THE ENCYCLOPÆDIA

OF RURAL SPORTS

BY

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AN
ENCYCLOPÆDIA
OF
RURAL SPORTS.

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AN

ENCYCLOPÆDIA

OF

RURAL SPORTS

OR

COMPLETE ACCOUNT (HISTORICAL, PRACTICAL, AND DESCRIPTIVE) OF

HUNTING, SHOOTING, FISHING, RACING, &c. &c.

BY DELABERE P. BLAINE, ESQ.

A NEW EDITION, REVISED AND CORRECTED

ILLUSTRATED BY ABOVE SIX HUNDRED ENGRAVINGS ON WOOD BY R. BRANSTON
FROM DRAWINGS BY LEECH, ALKEN, T. LANDSEER, DICKES, ETC.

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PREFACE

TO

THE THIRD EDITION.

In Sporting, as in every other art, science, or pursuit, knowledge is progressive, and the last few years have contributed much information which ought to be embodied in an "Encyclopædia of Rural Sports." Statements true enough in their day required to be considerably modified, to bring them into accordance with existing facts; events, which were fresh in the memory of readers when former editions appeared, have faded into a distance which has not "lent enchantment to the view;" men and steeds of mettle and prowess in sporting annals have given place to their successors; and new modes, plans, and appliances of sporting in its various branches have been discovered and brought into use. To meet new times and new men, a new book was requisite.

Under these circumstances it was found necessary, before bringing out another new edition of this Encyclopædia, to supersede considerable portions of the work by matter more adapted to the present day,—for which purpose the various portions have been submitted to the revision of sportsmen well qualified for the undertaking. While passing through the press, the new Jockey Club rules appeared just in time for insertion.

This edition will be found to be embellished with many additional engravings, from drawings by Mr. John Leech. In a word, no efforts have been spared, either in the letter-press or the illustrations, to render the work a faithful exposition of what Sporting is — or ought to be — in the present day, and to make it an instructive and entertaining manual at once to the sportsman and the general reader.

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AN
ENCYCLOPÆDIA
OF
RURAL SPORTS.

PART I.

THE ORIGIN, PROGRESS, AND PRESENT STATE OF FIELD SPORTS.

ABORIGINES HUNTING THE WILD BOAR.

By *field sports* we imply principally the chase after wild animals, — the love of which pursuit, though held cheaply by some, and deprecated by others, is, we are prepared to contend, inherent in our very nature. Man is essentially an omnivorous being; prompted by necessity, while in a savage state, to make war on the inferior tribes of animals, which contribute to his food, clothing, or other wants, and in a more refined condition urged by the demands of luxury, the love of excitement, or the pursuit of health, to subdue and convert to his use and well-being the subordinate inhabitants of the mountain, field, and flood. Nor is the present continuance of the chase, within proper limits, less innocent, or indeed less necessary, than its pursuit in former times, both as regards the nurture of man, and the safety of his empire over all below him. Our subject is, therefore, neither unimportant nor uninteresting; and if, by some novelty in the method of treating it, we can stimulate the votaries of the chase hereafter to mingle a little philosophy with their sporting practices, we are well assured that we shall have greatly added as well to their importance as to the pleasure to be derived from them.

BOOK I.

HISTORY OF THE CHASE.

2. *The history of the habits of the aborigines* of the earth is involved in such great obscurity, that any attempt to offer a correct chronological account of the origin and progress of the arts of capturing animals, would be but substituting conjecture for fact. Our principal early records are those contained in the writings of Moses; and although the abhorrence of the Jews to all the sports and pastimes of the Gentiles rendered the sacred pages almost barren on the subject of the chase, as a source of amusement, yet they occasionally afford a glimpse of the arts and stratagems employed in the capture of wild beasts, as a pursuit of necessity. For, as expressively observed by an elegant writer, with men approximating to a state of nature "hunting was not the by-work of leisure hours, but the call of continual urgency; not the jocund diversion of a day, but the toilsome and perilous occupation of a life." The translator of Arrian seems fully impressed with the opinion, that the capture of animals was practised by the ancient Hebrews; and that their methods of hunting did not differ materially from those of the pagan world. He also quotes Wase, who observes that " Canaan was hemmed in with deserts: there was the great Lebanon, and there was Mizpeh, and Tabor, and other mountains which abounded with game; and in the royal age, I believe, hunting itself was much frequented: for though the sacred history does not, *ex professo*, take care to deliver to us any thing concerning those lighter recreations, yet the frequent representations made by it throughout the writers of that age do give some probability that it was a frequent object among them, and taken from the common use. David's persecutions are sometimes likened to fowling, oftentimes to hunting; his enemies dig a pit for him, they set a snare to catch his feet: 'his enemies bend their bow, and make their arrows ready upon the string, to shoot at the righteous.' Neither was it unknown to the Jewish huntsmen, the way of driving beasts by immission of fear, which is the *formido et pinnatum*," &c. (*Arrian on Coursing*, 1831, 8vo. pp. 198, 199.) We may add, that all the prophets make numerous allusions to gins, traps, nets, nooses, snares, &c. The book of Job and the Prophecies of Isaiah abound with metaphoric allusions to the methods of capturing animals; hunting practices must therefore have been prevalent in Canaan. It cannot, however, fail to strike the biblical scholar, that in all the allusions made to hunting operations throughout the Hebrew Scriptures, there is not one that points to the employment of the dog as a coadjutor, the Jews, like the modern Parsees, holding him in contempt. What would hunting in the present day be without the dog? Nay, how many of the ordinary comforts and securities of life must be abandoned without him? Fortunately, however, for our purpose, profane history is more replete with the information we seek. The observations made by travellers on the predatory habits of such nations or tribes as still live in a state of nature, are also assistants in our research; and with these conjoint aids we hope to be able to trace, with probable accuracy, the progress of the chase from its earliest and rudest beginnings to its present popular and highly improved state.

Chap. I.

The Origin of Field Sports, and the Rude Methods employed in the Capture of Animals by the Primitive Races of Mankind.

3. *Man was, unquestionably, designed to be omnivorous*, as his geographical distribution was intended to be universal. By this wise provision, wherever he travelled, he met with supplies adapted to his physical necessities. In the digestion of animal food, so much essential nutriment is derived as greatly to endanger the constitution, unless the excess of stimulus thus received be kept down by very considerable bodily exertions. Man, we are informed, was first placed in Asia, where the climate not being favourable to great or long-continued bodily exertion, he was instinctively led to prefer fruits and vegetables to animal matter: and this preference was continued as long as he remained in his more simple and primitive state. Any considerable digression from this regimen, as long as he was an inhabitant of burning skies and arid soils, must have proved injurious to him. As he approximated temperate climes, the use of animal food would be less hurtful; and having reached the frigid zone, it even became essential to his well-being: thus the Greenlander not only eats the muscles of the whale in a raw state with avidity and impunity, but even slakes his thirst with its blood as an additional stimulant.

Sect. I. *The Origin of Field Sports.*

4. *Man, it is probable, first pursued animals for the sake of their skins*, as a covering for his own body, which the winters of even an eastern climate rendered necessary. Their flesh at length furnished him with food also. Scriptural accounts, however, point to the huntings of the first races, as principally directed to gaining the skins of the animals slaughtered. It is in accordance with this belief, that an old English writer has quaintly

remarked, "some hunted for playe and lykyng, other for love of bestes' skynnes; for men ete no flesshe before Noe's flood." The Mosaic records do certainly bear out this assumption. "Every herb bearing seed, which is upon the face of the earth, and every tree in which is the fruit of a tree yielding seed, to you it shall be meat." (*Gen.* vi. 29.) In the directions given by divine command to Noah, relating to the food to be taken into the ark, we observe that vegetable matter alone was chosen for the purpose: "And take therefore unto thee of all food that is eaten, and thou shalt gather it to thee; and it shall be food for thee, and for them." (*Gen.* vi. 21.) But whatever restraints were put on man previous to the flood, they ceased to be rigorously enforced after Noah left the ark, not only from the impracticability of raising vegetable food from ground overturned and saturated with saline moisture, but also from the decreased temperature of the earth, which required animal food as an additional stimulus. Man was therefore encouraged to "take, kill, and eat" of the beasts around him. "Every moving thing that liveth shall be meat for you, even as the green herb have I given you all things." (*Gen.* ix. 3.) Both sacred and profane history, however, would lead us to the belief that, as the fruits of the earth became again plentiful, man became again principally frugivorous; and that this propensity, agreeing with the renewed temperature of the climate, was therefore encouraged in him. Thus, when the Israelites journeyed through the wilderness, they were supported by manna, a known vegetable production; but, to prevent satiety, they were allowed during one month the flesh of quails. This early predilection in favour of vegetable food remained long, and was extensively diffused over all the eastern parts of the world. Porphyry the Pythagorean informs us that the ancient Greeks lived entirely on fruits and vegetables: the Syrians of the same times also abstained from all animal food; and by the laws of Triptolemus the Athenians were strictly forbidden from eating of any living creature. (See *Porphyr. de Abstinentia.*) We must not, however, conclude that either the divine command, the prejudices of habit, or even the instinctive wants of man, extended to the total exclusion of all animal food, and we know that it was eaten by the aged and infirm as a necessary means of renovation; thus the patriarch Isaac directed his son Esau to go out to the field with his weapons, and take some venison to make him savoury meat.

5. *As man multiplied he became more diversified in his habits;* and those restrictions which first confined animal food to particular ages, persons, or situations, gradually gave way to a general admixture of it with vegetable matter, as the support of all who could procure it. This would naturally diversify and extend the pursuit of animals, and convert the chase into the business of mankind generally.

Sect. II. *The early Artifices practised in the Capture of Animals, and the rude Weapons employed against them.*

6. *The indigent state of the aboriginal human tribes* may assure us that, in the capture of the beasts of the field, stratagem, rather than force, would be employed; and as it was of the skin of these animals that their clothing was formed, it follows, as a necessary consequence, that these endeavours would be principally directed against the larger beasts.

7. *Pitfalls* were among the first devices resorted to for this purpose, and are still employed by the savage Indians and rude Hottentots. In digging these, the depth of the hole, and the form of its sides, were made to suit the size and activity of the prey intended to be taken; and as the larger of them, such as lions, tigers, buffaloes, &c., from their affording the strongest and largest skins, were chiefly in request, these traps, without doubt, were made both deep and capacious. As the enterprise of man became heightened by success, he increased and varied his means, so as to ensnare the hippopotamus, and even the mighty elephant, whose thick and ample hide would form a most valuable defence, while his tusks might be applied to the formation of weapons and ornaments. In after times the flesh of this animal became an edible also, and was esteemed a delicacy by the savages of both Asia and Africa.

8. *Traps* were likewise of early invention. At first they were of the simplest construction, such as an impending bough, or even a massive stone nicely poised, after the manner of those to this day used by the peasants of the north of Europe in the destruction of the wolf and bear. These decoys were placed in the direct path traversed by wild animals in their prowlings, or in delusive tracks purposely contrived to lure them to a spot where their attention was arrested by a tempting bait; in the endeavour to seize which the foremost animal disturbed the support that upheld an impending weight, which immediately fell upon and killed him, or precipitated him into a deep pit below. Our illustration of this subject (*fig.* 2.) represents a lion that, having made a spring over the boughs which conceal a pit, purposing to seize the living bait hung over it, finds himself foiled; for although his spring has disturbed the bait, and almost overturned himself, yet he has not succeeded, but is seen sinking into the chasm below.

2

LION TRAP.

9. *Nooses and snares*, made of leathern thong or of hair, or of tenacious grass, were early means employed to take the smaller animals. These being laid in the accustomed paths of beasts, and hung in the usual

haunt of birds, would be successfully used in their capture; and toils to take the larger animal tribes would be suggested by the success of these.

10. *Lines for the capture of fish* were formed of similar materials, and a hook was appended to each, made of shell, horn, or bone, after the manner of the natives of uncultivated countries in later times. These rude means were sufficient for the capture of the unwary fish, not yet familiarised to the predatory attempts of man.

11. *The club, the javelin, and spear* were early weapons employed against wild beasts. Any well-grown bough would form a club, and experience soon taught the user to grasp the smaller end to increase the force of the blow. The dangers resulting from closing in with a savage animal produced the rude spear; and the want of an instrument of an intermediate length between the club and spear, which might answer the purposes of each on occasion, gave rise to the javelin. Types of these early inventions are to be met with in the offensive weapons of the countries visited by Captain Cook, the admirable fashioning and the ornamenting of which gave proof of the slow but certain advance of improvement among the rudest savages in a gregarious state.

> "New and unpolish'd was the huntsman's art;
> No stated rule, his wanton will his guide.
> With clubs and stones, rude implements of war,
> He arm'd his savage bands, a multitude
> Untrain'd; of twining oziers form'd, they pitch
> Their artless toils, then range the desert hills,
> And scow'r the plains below: the trembling herd
> Start at th' unusual sound, and clam'rous shout
> Unheard before; surpris'd, alas! to find
> Man now their foe, whom erst they deem'd their lord,
> But mild and gentle, and by whom as yet
> Secure they graz'd." — *Somerville's Chase*, b. i.

12. *On the predatory practices of early times*, the classical translator of Arrian observes, — "Acquiring knowledge by experience, man advanced in the mechanism of his hunting gear, as in other articles of increasing civilisation. Finding, on patient trial, the *χάος εὐρὺ περιστεφὲς* of Oppian [*'fovea ampla circumsepta,'* 'the spacious pitfall fenc'd around,'] with its rude accompaniment of fire, &c., insufficient for capturing the more wary creatures, he had recourse to the various kinds of weapons, snares, and wily inventions of slaughter which are described by Xenophon, Gratius, Oppian, and Nemesian; and often alluded to by other writers, both sacred and profane." (*Appendix*, p. 183.)

> "Tum laqueis captare feras, et fallere visco
> Inventum." *Virgil, Georg.* i. 139.
>
> "Then toils for beasts, and lime for birds were found."
> *Dryden's* Trans.

13. *The formation of nets* followed these practices, and the industry of whole families must have been employed in manufacturing them of such strength and extent as to enable them to surround and retain wild animals within an enclosure formed by their means. Thus encircled, they were either destroyed without mercy, by means of missiles, or they were further entangled so as to be retained alive if necessary. Philetas, son of Parmenio, had hunting nets which would take in a space of a hundred furlongs. The Greeks added to the enclosure the *pinnatum*, or feathered line, called, from its effects, *formido*, terror, and *δειματα θηρῶν*, the terror of wild beasts. Seneca has it, "Cum maximos ferarum greges linea pennis distincta contineat, et insidias agat; ab ipso effectu dicto *formido*." "When the line, with feathers attached, encloses large herds of wild animals that have been collected by stratagem, it is designated, from its very effects, *formido*, or terror." This feathered line, strongly scented, according to Wase, being drawn about, particularly in the intermediate or open spaces, so frightened the prey, but above all the deer, that they became easily ensnared. By means of nets the waters also were subjected to a wholesale ransacking; for man, after he became carnivorous, would soon become piscivorous also.

14. *Combined huntings of wild beasts* were an early result of increasing population, and of confidence in the use of hand weapons. Families, friends, and neighbours, by uniting their energies, surrounded whole herds of the gregarious tribes, which being driven into some defile or narrow space, were assailed by the offensive weapons then in use. The ostrich was thus hunted down, with the emu, cassowary, dodo, and other birds unfitted for flight. The hunting of the partridge in the mountains, as alluded to in Scripture (2 *Sam.* xxvi. 20.) was thus effected; and Shaw informs us that the Arabs to this day do the same, chasing them singly, or with several persons together. The birds, after a flight or two, become so tired that they are easily killed by the zerivatty or bludgeon. To understand this, however, we are to remember that it was either the migratory partridge, or the quail, that was meant; the latter, we know, when, in their periodical passage, they land in Malta, are found so fatigued as to be frequently caught by hand by active persons; nor is there any doubt but such is the case also with the partridge after its migratory flight.

Sect. III. *The Progress of Field Sports after the Invention of Missiles.*

15. *The introduction of missiles* was a great advance towards the conquest of animals, and afforded also powerful weapons of offence and defence to man against his fellows. Stone-throwing was an early method adopted to arrest the progress of animals on the retreat, and it is not a little surprising to observe how effective this simple aid becomes in the hands of some persons; and, in the absence of more active instruments, it was practised with great force and effect by the ancients. Stone-slinging succeeded to hurling from the naked hand. Taught by accident, probably, the additional force given to the mass when impelled by a lengthened arm, the cleft-stick and stone, it is likely, were first brought into use; which being improved by the supple sling, a missile was produced that long continued to be employed in the pursuit of wild beasts with much effect, as well as in the warfare of man with man. (See *Archery*, infrà.) The Benjamites, we learn from the Bible, were peculiarly gifted as slingers, and they are figuratively said to have been able to sling to a hair's breadth. The Grecians were very favourable to the sling, although it is said that they never arrived at much proficiency in the practice of slinging. Both Strabo and Diodorus Siculus eulogised it. Alexander, however, is said to have contemned it as a mean weapon: but if, as recorded, the sling could act with sufficient force to propel a bullet through a three inch board, it deserved more credit from the conqueror. Among the Romans, the slingers (*funditores*) of the Balearic Isles were congregated into military bodies. Mezentius, in the ninth Æneid of Virgil, observes on the practice of these men, that before the stone was loosened from its hold, it was whirled three times round the head. The sling in various forms is found in most parts of the globe, and the invention of it may be considered as the first dawn of projectiles as an art; and as rude man, in every situation, is found predatory and warlike, we incline to discredit the general opinion that stone-slinging was not an early

British practice, but first taught by our Saxon ancestry. However, be that as it may, our record informs us that English slingers attended the bowmen in battle, and that the precision of their aim was such that a beast sitting, or even running, seldom escaped; and that even birds on the wing were often hit by them.

16. *The invention of the bow and arrow*, as an early weapon, must have greatly assisted towards that conquest which man, as well by necessity as choice, was led to contemplate over the animal kingdom. By this instrument he was enabled to overtake the swift, and conquer the strong, without personal contact with either. From a hidden recess he could also select his prey, and even repeat his successes until satiated. The very general, and the very early diffusion of this weapon over every quarter of the globe is alone sufficient proof of its importance, both as a warlike instrument, and as an essential implement in the chase of wild animals. The immediate origin of the bow has occupied the attention of antiquarians, and engaged the researches of the learned in every age. As we shall embrace another opportunity of noticing the subject more fully, we shall at present simply offer to the reader the conclusion, which we are justified in forming, of its great antiquity, from a bow-shot being a common measure of distance at a very early age; for the author of the Book of Genesis says of Hagar (*Gen.* xxi. 16.) "She went and sat her down over against him a good way off, as it were a *bow-shot.*" We know little as to the figure, or the component parts of the primitive bows and arrows; but we can form some opinion of the effective nature of the instrument, and the proficiency of the early archers in their use of it, by the directions given by Isaac to Esau in *Gen.* xxvii. 3. "Now, therefore, take, I pray thee, thy weapons, thy quiver and thy bow, and go out to the field, and take me some venison." From which we infer, not only that there was abundance of deer, but that there was a supposed certainty in the mind of the father with regard to the success of the son's archery. The annexed illustration (*fig.* 3.) intended to represent Esau going to the field to seek venison for his father, is copied from Strutt, by whom it was taken from a Saxon MS. in the Cotton Library, supposed to be written about the eighth century; and if the introduction of it does little to embellish our pages, it nevertheless serves to show the interest excited by sporting details in the earliest times; and that even in those days of bigotry and superstition they were not thought unworthy of a place in the most serious memoirs. It is probable that the throwing of the javelin or lance, which was practised prior to archery, first suggested the idea of a bow. Darts were only small javelins, and it was a great step in the march of improvement to enclose them within the hollow of a reed, and thus to force them, both with precision and velocity, by the simple impulse of the breath. In after times the work of destruction was extended, and death ensued by the slightest puncture of either the arrow or the dart, by means of poison attached to their points. (See *Archery as a Modern Sport*, infrà.)

3

ESAU.

Sect. IV. *The Animals subjugated by Man, and trained to become Assistants in the Chase.*

17. *Without the assistance of animals* in league with himself, man would have held every country in which he set his foot by a very precarious tenure. A writer in the *Library of Entertaining Knowledge* well observes, "A contest is incessantly going on, between man and the inferior animals, for the possession of the earth. Where civilisation is established his domination is secure; but where man proceeds in his career of improvement by slow and solitary steps, he has long to dispute possession with the original brute tenantry, until they find their resistance unavailing: if he recede, the lion, the elephant, &c. return to their ancient domain. Whatever man holds in this world must be held by an unceasing exercise of his energy: if he neglect to maintain his ground by the same activity of intellect by which he has acquired it, an enemy starts up on every side. Even the commonest processes of nature require to be watched. They are either allies or foes. The sun, and the rain, and the dew, and the wind, are as much annoyances as assistants, unless they cooperate with an intelligence which directs them to good. If the lion break not into his fold, and the elephant tread not down his plantations, the minutest insects are at hand to injure his flocks and to destroy his harvests, when the universal conqueror indolently ceases to defend his empire." (*Menageries*, vol. ii. p. 37.) What we know under the term cattle formed a principal portion of the riches of early man, who was not yet strictly located to any fixed spot. It is however necessary, to prevent any misapprehension of the sacred page, to take into the account, that the term cattle is there used in a very extensive sense; at one time expressing all four-footed animals whatever, and at another signifying such only as were under the protection of man; but even in the latter case it included all kinds of beasts so subjugated.

SUBSECT. 1. *The Domestication of the Dog.*

18. *The dog* was probably the first animal selected by man to assist him in his own predatory pursuits as a hunter; but by no means is it clear that he was the first object of subjugation among the beasts of the field. It is more likely that sheep and kine were the earliest subjects of human conquest; with the skins of these, man formed for himself a defence and clothing, and from the milk which they yielded he could derive nutriment. But as these would offer no companionable qualities; and as they could render him no assistance in his meditated conquest over yet wilder and more ferocious animals, he would eventually be led to look around him for such a companion and assistant as the dog would be likely to prove. The marked prejudice which existed against the dog in portions of the East, however, must necessarily have protracted his perfect domestication; nor was it likely that, until his valuable qualities had gradually, but irresistibly, conquered this prejudice, he would be enlisted into the confidence and esteem of man, and his services be duly appreciated and properly rewarded. But when it was found that in him were united exquisite powers of scent and vision, great strength, rapid progression, determined courage, and an instinctive ardour in the pursuit of all wild animals, he must have fixed his future association with man by an indissoluble tie. It is not unlikely that the unity of purpose displayed by wild dogs in their gregarious state, when spontaneously pursuing game, might first impress man with the idea of enlisting them into his service; as it might also afford him a useful hint with regard to the advantages he would himself derive by congregating himself and fellow-men into large hunting parties, the better to accomplish his predatory schemes.

19. *The first dogs*, it is likely, were taken in the pitfalls, traps, and snares, employed for the capture of animals generally. Such dogs as were pregnant might be selected for preservation, in which case their progeny would gradually become domesticated, and, as they yielded to future discipline, would prove eminently useful not only in the chase, but also as a guard against the incursions of wild animals among the domesticated herds of sheep, goats, &c. Cuvier, however, is so convinced of the natural union between dog and man, as to pronounce that, in his early state, man first domesticated this animal, because nature had given it a tendency to that peculiar mode of life which he himself pursued. But, for reasons already stated, we incline to the opinion, that the ruminants preceded the dog in being enslaved by man; and we cannot but regard the opinion of Cuvier as in direct opposition to historical notices.

SUBSECT. 2. *The Domestication of the Ass.*

20. *The subjugation of the ass* (*fig.* 4.) appears, from the records of the Bible, to have preceded that of the horse; and we infer from the same authority, that this subjugation took place prior to that of the dog. That portion of the globe to which the sacred page more directly relates, is singularly favourable to the increase and perfection of the ass, whose strength of body, capacity of receiving support from the coarsest vegetables, and ready submission to control, without doubt led to this preference. We read that Abraham had sheep, and he-asses, and she-asses, and camels (*Gen.* vi. 16.), but no mention is made of horses. When Benjamin and his brethren travelled towards Egypt to buy corn *they rode on asses.* (*Gen.* xliii. 24.) At a period of time, considerably posterior to this, when Moses quitted Midian, he took his wife and his sons, and set them on *asses.* The wealth, indeed, of individuals of that day was in a great degree measured by the number of asses they possessed: thus Job was said to have had a thousand she-asses. This predilection for she-asses is considered by most writers to have arisen from the milk they might supply: but either the young must have always accompanied the mother in their journeyings, or the constitutions of the European race of these animals is altogether altered. For the lactation of the ass differs from that of ruminants; which latter, in most instances, by the mere stimulus of drawing away their milk, continue to secrete it. In the ass, on the contrary, this maternal supply fails as soon as the young is taken away. The cow, we know, is milked for months after the calf is otherwise disposed of; but the invalid who drinks asses' milk warm from the living fountain, must share it with the little shaggy offspring which frisks at his mother's side: remove him and the supply is withheld, the sympathetic stimulus of maternity having ceased. She-asses were principally enumerated as the stock, because one male was sufficient for the impregnation of many females, whereas the female could gestate no more than one foal at a time.

4

WILD ASS.

21. *The patriarchal preference of the ass* to the horse will not excite surprise when we cease to consider the former in the light in which he appears with us, in a country not favourable to the development either of his size or his powers. If we look to both the native and cultivated asses of Persia, Egypt, and Arabia, they will be seen to be but little inferior to the horse in size, and nothing inferior in strength; while, in freedom from disease, and, as already observed, capability of subsisting on coarse and scanty fare, they proved, particularly in arid climes and rocky paths, by far the more eligible servants to man before refinement and luxury had multiplied his desires and his wants. Man, in his early state, did not go mounted to the chase; consequently, the active services of the ass, in the first instance, were principally required in bearing burdens, or assisting in tillage, and, probably, in occasionally carrying the sick and the aged. When, indeed, riding became common, there is no doubt but that the ass, and the camel also, but particularly the former, was employed for the purposes of hunting; and if we take into the account what is related by Xenophon, the horse was little wanted in the chase by those who possessed the eastern ass. Describing the country near Cunaxa, he says: "Of wild creatures the most numerous were wild asses, ostriches, bustards, and roe-deer, which our horsemen sometimes chased. The asses, when they were pursued, having gained ground of the horses, stood still (*for they exceeded them much in speed*), and when these came up with them they did the same thing again, *i. e.* distanced the horses, so that our horsemen could take them by no other means but by dividing themselves into relays, and succeeding one another in the chase."

22. It appears paradoxical, but it is true, that, although the wealth of the Hebrews was measured by the number of asses they possessed, yet they treated them with indignity when dead, refusing them that burial which they afforded all other animals. Jehoiakim, king of Judah, was, as a punishment, "to be buried with the burial of an ass, and *cast forth* beyond the gates of Jerusalem." (*Jeremiah* xxii. 18.) The case was very different with the heathens; their astronomers placed them as signs in the heavens, where two asses figure in Cancer. The jolly god Bacchus is, however, said to have had some hand in this profanation, for, losing his senses in a contention with madam Juno, he sought to recover them by a visit to the oracle in the Dodonæan temple of Apollo. In his journey he was stopped by a river, but, mounting one of two asses he found at hand, he was carried over dry and safely. Having recovered his wits by oracular intervention, to immortalise the part the friendly ass had taken in the affair, he placed the pair among the stars. How few of our armorial bearings can boast of such high origin! The Romans, also, had among their festivals one called the Feast of Asses, at which the bakers crowned these animals with loaves. The ass, in his unreclaimed state, was known to the ancients as the onager, and under this term he has been highly eulogised. It is, we repeat, in a warm climate only, that his form attains its maximum of development. In Guinea the asses are said to be even larger and more finely formed than the horses, and, like the camel race, they are divided into two varieties; one heavy, strong, and slow; and another light and extremely agile. The wild ass has served as a theme for the ancient writers and poets. Oppian says the onager has feet like the whirlwind; and Xenophon, in his Anabasis, describes it as fleeter than most horses of his day; and Homer, than all other animals whatever. The deserts of Libya and Numidia at present contain vast herds of wild asses which possess great speed. The natural hardness of their hoofs, and their peculiar formation, affording, as it does, a remarkable facility of retaining their foot-hold in ascending and descending the rocky precipices of unmade ground, rendered asses, in these localities, more eligible for the purpose of travel than horses. As luxury and refinement made their advances, the horse, particularly in cool climates, in a great degree superseded the ass: in the chase, especially, he obtained the preference; for, though less hardy, he proved more courageous, and, under high cultivation, more speedy and enduring also. The ass, however, is still employed for the saddle by many of the orientals, in preference to the horse.

Subsect. 3. *The Natural History of the Ass.*

23. *The natural history of the ass* (*Equus Asinus*, Linn.) presents some interesting circumstances to the curious zoologist, inasmuch as it tends to strengthen the opinion maintained by some writers, that the diversity of *species* is owing to accidental causes, and that nature did not originally establish a separate type for each. The horse genus furnishes two domestic species only; the camel does the same; and this peculiarity is confined, as far as we know, to them alone in the wide range of quadrupeds. The horse and the ass couple, and produce living specimens; but reproduction, if not impossible, is most rare from the hybrid. The structural differences between the horse and the ass are trifling; perhaps that on which the very different tones emitted by the voice depends is one of the most striking. (See *Anatomy of the Vocal Organs*, infrá.) In all other essential points the organisation of the horse and ass is the same; and, with the exception of the lengthened ears of the ass, their form, size, and proportions, in a wild state, differ but little: consequently, they possess conditions more favourable to the multiplication of species than those afforded by any other nearly allied animals. The varieties of the ass in countries favourable to their development are great. In Guinea the asses are large; and, in shape, even excel the native horses. In Persia, also, they are finely formed, some being even stately, and much used in draught and carrying burdens; while others are more lightly proportioned, and used for the saddle by persons of quality. With us, on the contrary, they unfortunately exhibit a stunted growth, and appear rather to vegetate as a sickly exotic, than to riot in the luxurious enjoyment of life like the horse. In the horse, the differences which exist between the several breeds are infinitely more marked than in the ass; yet they both own one common property of preserving the purity of their original character. In the midst of all the differences observed between the varied races of the horse, not one has ever been known with the long ears of the ass: neither among the varieties of the ass has any one ever appeared without them. (See *Natural History of the Horse*, infrà.)

24. *The ass gives indubitable proofs of its eastern origin*, for it is in eastern countries only that he arrives at his maximum of size and perfection: as he advances northwards he degenerates; Spain is the northernmost in which he is seen to advantage. The geographical distribution of the horse and ass, therefore, are somewhat different, which of itself presents a distinctive line between them, not, however, often remarked on by naturalists. The horse flourishes in temperate climes, and can maintain life in countries bordering on the frigid zone: the ass, on the contrary, is curtailed in his growth even in temperate localities, and doomed by nature to be incapable of much improvement in moist and cold climates.

Subsect. 4. *The Domestication of the Camel.*

25. *The camel* (*fig.* 5.) *must have proved an invaluable acquisition to the early races of man.* When these aborigines were doomed to rove in search of new localities, they found in

the camel all that their necessities required. From the milk and flesh they derived food, the skins made them clothing, and the backs of these willing animals served to transport their families and their baggage in search of new locations. As man advanced in civilisation, the services of the camel became more varied; and in the combined huntings of early times he was, without doubt, very useful. Nor must he be condemned for being altogether "slow," for he has exhibited his powers as a racer among the Mahomedans, who, at particular seasons and festivals, make camel-races one of their popular amusements. Burckhardt particularly notices these pastimes in the neighbourhood of Mount Sinai. The intrinsic value of the camel has always enabled him to compete with the ass in forming the riches of the patriarchal age, and particularly at those times when caravans traversed the deserts, and transported loads of merchandise from one country to another, for which labour the ass was physically unfitted. The sacred writings abound with notices of the camel, some of them of very early date. When the brethren of Joseph had cast him into a pit, "they sat down to eat bread; and they lifted up their eyes and looked, and, behold, a company of Ishmaelites came from Gilead, with their camels bearing spicery, and balm, and myrrh, going to carry it down to Egypt." (*Gen.* xxxvii. 25.) The camel must have been common in Egypt from the earliest recorded dates. Pharoah, we are told in the twelfth chapter of Genesis, bestowed camels on Abraham for the same purposes that he gave him asses also. In later times camels continued to be in use among the Israelites; for it is related in Judges how Gideon arose and slew Zebah and Zalmunna, and took away the ornaments that were on their camels' necks. The Hebrews themselves were also accustomed to ornament their own camels with collars studded with gold; and the same custom still prevails in many parts of Asia. With all these proofs of the early and continued use of this animal, it is remarkable that it is never represented in the ancient sculptures and paintings of Egypt. It is, however, foreign to our purpose to enter on any inquiry into these contradictory evidences; but the inquisitive reader will find the subject noticed at large in the natural history of the animal in the *Library of Entertaining Knowledge*.

5

AFRICAN CAMEL.

26. *The sporting character of the camel,* if not very striking, is sufficiently diversified. He has occasionally carried the hunter in the pursuit of wild beasts; he also graced the war-chariots of old, and has figured in mounted as well as in chariot racings; aye, and even in matches against time. Camel-fights were formerly encouraged, and they are so still in Turkey, Smyrna, Aleppo, and Egypt. The camels of Smyrna, when they are to be thus engaged, are led out to a large plain filled with eager crowds. They are muzzled, to prevent their being seriously injured; for their bite is tremendous, always bringing the piece out which their teeth embrace. A couple being let loose, they run at each other with extreme fury. Mr. MacFarlane thus describes this curious scene: — "One of the favourite holiday amusements of the Turks of Asia Minor is furnished by the camel-combatants. An enclosure is made, and two camels, previously muzzled, so that they cannot hurt each other much, are driven in, and incited to fight with each other. Their mode of combat is curious: they knock their heads together (laterally), twist their long necks, wrestle with their fore-legs, almost like bipeds, and seem to direct their principal attention to the throwing down of the adversary. During this combat the Turks, deeply interested, will back, some one camel and some the other; and they will clap their hands, and cry out the names of their respective favourites, just as our amateurs do with their dogs, or as the Spaniards, at their more splendid and more bloody bull-fights, will echo the name of the hardy bull or the gallant *matador*." (*Loc. cit.* vol. i. p. 246.) The camel, in eastern countries, was also employed instead of the war-horse, and numerous are the accounts of the battles in which they have figured. They are also still thus engaged, and were used in "1755–9 against the Eleuths; Akony, their military mandarin, and commander-in-chief, even carried swivels on their backs. In India, camels similarly armed precede the nabobs on occasions of state to fire salutes. The East India Company also maintain a corps of dromedaries, mounted by two men each, and armed with musquetoons or swivels."

Subsect. 5. *The Natural History of the Camel,*

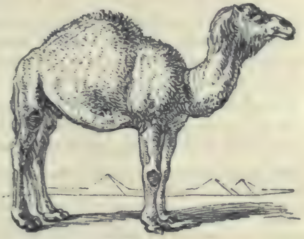
27. *The camel presents two distinct species, and several subordinate varieties.* The Arabian, or dromedary (*Camelus dromedarius*, Linn.), with one hump or hunch, forms one; and the Bactrian or Asiatic camel, with two humps (*C. Bactrianus*, Linn.), the other. The teeth

of the camel of both species differ from those of other ruminants, and present that formation best adapted to the use of an animal whose browsings on branches, twigs, and shrubs, required a particular cutting apparatus. "The teeth of the camel," says Major Smith, "do not present a continuous series in the upper maxilla; the foremost, in the shape of a crook, being separated from the others, and placed midway in the diastema, or interval in the mouth, between the molars and the incisors. Before these are two strong canines, and, what is more singular, instead of a total absence of incisors in the upper jaw, as obtains in all other ruminants, two, corresponding to the lateral ones, appear, and have likewise the form of canines; so that the animal shows three of them on each side of the upper maxilla. Below, the two external incisors assume a corresponding pointed form, and insert themselves between the upper incisor and the canine behind it; and the foremost of the molars, particularly in old animals, growing likewise in the diastema, with the forms of a canine, reduces the true grinders to five, and offers two of these pointed crooked canines on each side of that jaw."

28. *The Arabian camel, or dromedary (fig. 6.), is divided into several varieties.* Of these breeds there are the Ashary, Mahairy, Oont Egin; but the most celebrated for speed, as it is said, is the Mahairy, or dromedary of the Greeks. The dromedary is more tucked up in the belly, as a sportsman would call it, his legs are lighter, and altogether he appears more fitted for riding upon than the Bactrian camel.

29. *The African or Bactrian camel (fig. 5.)*, distinguished by having two humps, one on the shoulder, and the other on the croup, is stronger and taller than the dromedary, being sometimes seven feet and a half high from the top of the hunches to the ground; his legs are also proportionably shorter than those of the Arabian species; and he likewise has a fleecy coat of a dark colour. In India both species are common, being constantly supplied by fresh importations from the north-west.

6



ARABIAN CAMEL.

30. *The importance of the camel to man* is thus depicted in the *Library of Entertaining Knowledge:* — "The camel has been created with an especial adaptation to the region wherein it has contributed to the comfort, and even the very existence, of man, from the earliest ages. It is constituted to endure the severest hardships with little physical inconvenience. Its feet are formed to tread lightly upon a dry and shifting soil; its nostrils have the capacity of closing, so as to shut out the driving sand, when the whirlwind scatters it over the desert; it is provided with a peculiar apparatus for retaining water in its stomach, so that it can march from well to well without great inconvenience, although they may be several hundred miles apart." Bewick also gives an admirable summary of the claims of this animal to our admiration. "He combines," says this writer, "the various qualities of the horse, the cow, and the sheep; and is to the Arabian, in a great measure, what those useful creatures are to us. Its milk is rich and nourishing; and, being mixed with water, makes a wholesome and refreshing beverage, much used by the Arabs in their journeys; the flesh of young camels is also an excellent and wholesome food. Their hair or fleece, which falls off entirely in the spring, is superior to that of any other domestic animal, and is made into very fine stuffs, for clothes, coverings, tents, and other furniture. The Arabian regards the camel as the most precious gift of heaven; by the assistance of which he is enabled to subsist in those frightful intervals of nature which serve him for an asylum, and secure his independence. Possessed of his riding (not a baggage) camel, the Arabian has nothing either to want or to fear: in one day he can perform a journey of fifty leagues into the desert, where he is safe from every enemy; for, without the aid of this useful animal, no person could pursue him amid sandy deserts, where nothing presents itself to the eye but one uniform void, naked and solitary.'

31. *The camels*, it may be remarked, which are seen about our streets present a very humble type of those met with in Asia. The climate of England, from its coldness and moisture, renders it enfeebled and lifeless; and its longevity, extending in its native air to fifty years, is curtailed one half in those which have been brought into England, France, and Germany. Even at Pisa, where the dromedary has been bred for more than two centuries, it is small, weak, and betrays marks of degeneracy; nor does it there reach to the usual term of the camel's life. For two months of the year this animal suffers *œstrum*, or sexual excitement, and is then irritable, and sometimes ferocious; but at all other times is most harmless and obedient. Its term of gestation is between eleven and twelve months, and it produces one only at a birth.

32. *The camels of both Asia and Africa* are capable of immense fatigue, wonderful privations, and some of them are able to continue a trot of nine miles an hour for several hours together; but to an English rider the seat is most inconvenient, and the gait galling. Denon, who accompanied a division sent by Desaix, during the French invasion of Egypt, thus describes the first lesson of the party in camel riding: — "The *boute-selle* (the mounting at a signal) was very amusing. The camel, slow as he generally is in his actions, lifts up his hind legs very briskly at the instant his rider is in the saddle; the man is thus thrown forward; a similar movement of the forelegs throws him backward. Each motion is repeated; and it is not till the fourth movement, when the camel is fairly on his feet, that the rider can recover his balance. None of us could resist the first impulse; and thus nobody could laugh at his companions." The foot of the camel presents an organisation which admirably adapts it for travelling in arid and deep sands. It is cloven in the front, but is furnished behind with a bulbous mass of elastic frog, forming a cushion or pad, which prevents the foot from sinking in the loose soil he treads on.

33. *The stomach of this ruminant* also presents a singular adaptation to his peculiar habits, wants, and the localities he inhabits. Accustomed to traverse sandy deserts, where succulent herbage is scarce, and water seldom to be met with, he can derive nutriment from thorns, thistles, and briars, for the cutting of which his teeth, as already observed, are particularly formed. But his capability of abstaining from drinking in these arid regions is derived from a structural peculiarity witnessed in none but himself and the lama, in which latter, however, it exists but imperfectly. The stomach of the camel is enabled to receive and preserve water by means of numerous cells, closed by muscular orifices, which are opened one by one, only at the pleasure of the animal, to relieve its wants. It is by means of this supply that the camel can travel where water is not met with for several days; and it has happened that, when the traveller himself has been famishing with thirst, a camel has been killed to obtain a supply from its continent cells. (See *Home's Comp. Anat.* vol. i. p. 169.)

Subsect. 6. *The Domestication of the Horse.*

TAKING OF WILD HORSES.

34. *The horse appears by a bountiful Providence* to be particularly designed for the use of the inhabitants of temperate climates. Capable as he is of enduring considerable variations of temperature, he becomes of vast importance to the inhabitants of Great Britain, as well as to those of most parts of Europe. Our present notice of him, however, will be confined to his aboriginal state, and to the early means employed to subjugate him to the use of man. Hereafter we shall treat of his several natural and artificial varieties, whether resulting from the influence of climate, or effected by domestication or culture. Our figure (7.) is intended to represent wild horses pursued for capture in their native plains, by means of the lasso.

35. *Both sacred and profane history* are silent as to the exact period when the subjugation of the horse took place; but we have much reason to conclude that neither the ass nor the horse was generally mounted, until long after the employment of them for other domestic purposes. Their services were at first, no doubt, confined to the treading out corn, the bearing and the drawing of burdens placed on sledges, or on platforms moving on rollers; the inconvenience resulting from which eventually led to the invention of wheels. There is also reason to suppose, when horses were first employed to draw, that the load was attached to the tail. Uncouth as this method may appear, it was probably not deemed so absurd by those who had recourse to it; and we know that both as to horses and other beasts a similar method has been practised by rude tribes in much later times. In uncultivated countries, where beaten tracks are unknown, a mass to be moved has but little chance of progressing when the moving power is horizontally applied, as it is by us of the present day.

36 *The collar seems to be an after-invention.* The *Iliad* bears testimony to the importance which Homer attached to the various methods of harnessing the horses during the siege of Troy. The plough, described by Virgil in his *Georgics*, was drawn by oxen with neck collars. The sacred records first notice horses as travelling with Joseph when he carried his father's remains from Egypt to Canaan, which occurred more than 1600 years before the birth of Christ.

37. The passage itself has the word "*horsemen*," but it is difficult to reconcile this term to any other meaning than that it signified the *attendants* on the horses, which were undoubtedly laden, or otherwise were drawing burthens. Horses, however, appear not to have been in high repute in the east, even after they were subjugated; for king David, when he had taken three hundred which drew the war chariots of the Syrians, retained only one hundred, and destroyed the rest. In Palestine the use of the horse was wholly forbidden by divine command; and the eastern countries, now so celebrated for their breeds of these animals, appeared unapprised, in those times, of the value which would at a later period be set on them. Providence had, as already observed, given them in the camel an animal every way adapted to the region around. In the construction of its stomachic reservoir for water, its physical wants were supplied in journeying through the vast uncultivated plains of the east; and the wide-spreading prehensile construction of its feet rendered it stable on the sandy plains, where the horse would have been famished with thirst, and buried in the dust.

38. *At what period the horse became generally mounted*, is a question involved in much uncertainty, and has occasioned much disputation; but it was probably not far in advance of the time when he first assumed, by common consent, in eastern countries, the name of the courser, from the speed he displayed in scouring the plains, and from his emulous rivalship to outstrip his fellows. One might, *à priori,* suppose that the invention of the saddle would soon follow the art of riding; but Suetonius tells us that the Greek's and Romans rode without this convenience. We shall not, however, pursue this subject here, but refer, what we have further to say on it, to the section on the *Natural History of the Horse;* at present simply remarking, that the rivalry of the owners of horses, and the emulous spirit of the animals themselves, were early shown in trials of speed or racings; not, however, as in after-times, between mounted horses, but between fiery steeds attached to the gaudy car. These early carriages were low, and the charioteers stood up in them to manage and guide their cattle. Riding on horseback appears to have been long confined, in the countries where it even originated, to military purposes, and to those alone. The Numidians, Mauritanians, Massyleans, and Libyans, were celebrated for their military equitation, although history reports that they rode without saddle or bridle, guiding their steeds by a switch only. One of the African kings, who reigned a century and a half before Christ, at ninety years old, is reported to have sat without a saddle on horseback for several successive days, with his head totally uncovered. These were the war-horses so much commended by Xenophon, Oppian, and Ælian. The Grecians appear to have learned equitation from the colonists who

emigrated from Egypt and Phœnicia before the siege of Troy. The Romans became equestrians from the example of the Grecians; and, without doubt, the practice of horse-riding soon extended throughout the whole of civilised Europe. For a long period, however, after military equitation was common, the inhabitants of the east continued to use asses and mules for transporting them from place to place.

39. *The employment of horses in the chase of animals is not noticed until after the Christian era.* They might probably have been occasionally used in some predatory exploits on a large scale, and in the feats of the lasso; but the general pursuit of beasts in the chase, properly so called, seems not to have been under much obligation to their services in early times: indeed, it may be remarked, that the hunting expeditions were then commonly conducted on foot; for the animals to be attacked were most of them so powerful and ferocious that the horse could not be readily brought to face them. At the sight of a tiger, even in our day, a horse has been known to become wholly paralysed with terror, and rendered incapable of resistance and even of flight; and yet, such is the power of education, that these natural workings of fear, and instinctive dreadings of mortal foes, can be nearly eradicated by training, and a reliance on the protection of man. A remarkable proof of this is, that the hunting leopard is allowed by the well-trained horse to spring on his back, either behind or before his master, when he goes to the field in pursuit of game.

40. *From what has been said, as well as from historical records,* we are warranted in concluding that it was not until after the diffusion of population had become extensive, nor until cultivation had ridded vast tracts of the larger and more ferocious beasts, that the sporting uses of the horse were called into full action: the dog had, therefore, long before the horse, become the grand coadjutor of man in his predatory pursuits. For the immediate means employed to bring the ass, the camel, and the horse, under the personal control of man, we must refer to what has been already said of the capture of animals in the earliest times, and also to the account which is to follow of the field sports of each distinct quarter of the globe. Of the horse we have yet much to remark in our *History and Practice of Horse Racing*, infrà.

Subsect. 7. *The Domestication of the Elephant.*

41. *The Indian or Asiatic elephant* (*fig.* 8.) is that species which we will suppose to have been first subjugated by man; but that either kind is likely to stand very high in the sporting list of the British fieldsman, when he regards the matter as a mere sportsman, we are not prepared to contend. But as it is our great aim to direct the attention of the reader far beyond the bare instinctive pursuit of animals, we would have every sportsman to be also somewhat of a philosopher, being well assured that the more extensively he views nature in all her relations, the more intensely will he enjoy her. It would be well for the reputation of field sports, and for a more successful practice of them, if every turfman, every fox-hunter, and every gunner, aye, and every angler too, were what is fashionably called an "*out-door naturalist.*"

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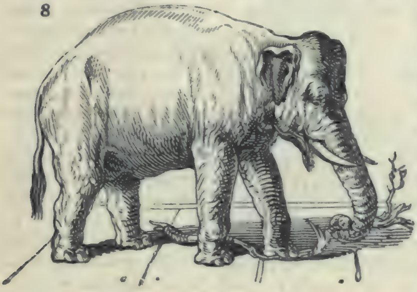

INDIAN ELEPHANT.

42. *The elephant, therefore, under the view we advocate,* is an object of admiration to the sporting world at large; for all must feel an interest in his powers both of mind and body; and to the natives of Asia and Africa, he must be more particularly so. In all the imposing spectacles of their native princes, whether sporting or military, he forms a most important appendage. To preserve, therefore, the uniformity of our plan, we shall here glance at his domestication, and the means whereby it has been effected, together with the sporting purposes to which he has been applied. We shall also take a cursory view of his natural history, as a subject too interesting to be entirely passed over. These various notices must, however, be somewhat condensed, as we shall again have to notice the subject in the sports of Asia and Africa.

43. *The elephant was subjugated to the use of man* more than eleven hundred years before the Christian era; since which time he has, both in Asia and Africa, been a useful auxiliary in the chase. But it must be allowed that he has shone most conspicuously as a domestic agent in labour, a powerful assistant in war, and one of the most important and striking objects in the ostentatious parade and magnificent spectacles of eastern princes. Of the value of the conquest of this stupendous animal to the countries of which he is a native, the following is a good picture: — "The domesticated elephant is the most friendly and obedient of all animals: he is entirely attached to the person who feeds and takes care of him. In a short time he understands signs, and the sound of his master's voice. He distinguishes the language of passion, of command, of satisfaction; and acts accordingly. He receives his orders

with attention, and executes them with alacrity, but without precipitation. He easily learns to bow his knees and lower his body, for the convenience of those who mount him. He lifts burdens with his trunk, and assists those who are loading him in laying them on his back. He delights in shining harness and trappings. When yoked in a cart or waggon, he pulls equally and cheerfully, unless he be abused by injudicious chastisements. His guide is generally mounted on his neck, with a small rod of iron, sharp at the point, in his hand; he directs his motion by pricking him on the ears and head; but, for the most part, a word is sufficient. One of them will do more labour than six horses, but he requires a proportional quantity of food. They are the principal beasts of burden in many parts of Africa and the East Indies, carrying sacks and bundles of all kinds on their necks, backs, and tusks. They seldom lose or damage any thing committed to their care: but will stand on the edge of a river, take bundles off their necks and tusks, lay them carefully in a boat wherever they are desired, and try with their trunk whether they are properly situated. If they be loaded with casks, they go in quest of stones to prop them and prevent them from rolling." — *London Encyclopædia.*

44. ***The first capture of the elephant must have been a bold undertaking.*** — It was, no doubt, a combined enterprise, and probably undertaken by digging a pit in an accustomed track of these animals, to which one or more of them might be particularly tempted by some favourite food being strewed in the way. In Ceylon, little more than a century ago, a pit covered over with loose boards, and garnished with such grass and boughs as the elephant is known to be fond of, was employed for his capture; and Sieur Brue describes it as that used by the Africans of Senegal, who feed on the flesh of this animal.

45. *The method of taking elephants in numbers* varies according to the nature of the country, and the means possessed by the originator of the enterprise. Captain Williamson, in his *Oriental Field Sports*, says, "the most common mode, when many are known to frequent a particular spot, is to surround a portion of the locality with a broad and deep ditch, fortifying the outside with strong timber palings, very powerfully propped and supported; it being almost inconceivable to calculate on the force that is employed in the simultaneous rush of a few elephants uniting in concert. Some idea of it may, however, be formed by recurring to the published accounts of the exertions of poor Chunee, the lamented martyr of Exeter Change. The mouth of the keddah, or enclosed area, is funnel-shaped: into the larger end of this the elephants are forced by the noise of surrounding multitudes, made by shoutings, drums, and trumpets; the effect being heightened by the blaze of fire-works, which intimidate them so much as to make them rush towards the smaller entrance, within which they are strongly secured. This operation often takes up many days; for, when a distinct herd is not near, they are to be gradually collected from distances of twenty, thirty, or even forty miles, and must then be driven with a slow pace and with great caution, otherwise the object of the enterprise is discovered, and some old refractory males breaking away, are soon followed by the whole. The elephants being thus enclosed, were formerly tamed by starvation, by tying the legs, and other cruelties: but this practice only soured the temper, and rendered them irretrievably morose; and the ligatures employed often occasioned incurable wounds. Cruelty, therefore, was abandoned; and the generous nature of these animals soon led them to yield obedience to mildness on the part of the captors; and to reward the kindnesses shown them, they became willing, faithful, and most useful servants." A sum equal to sixty guineas was the price paid by the East India Company for each elephant they purchased; but none were received under seven feet high. It might probably by a common observer be thought, that all attention to points of configuration in an animal presenting such an uncouth and broad outline would be superfluous. The reflecting mind will, however, be aware that animal mechanics must apply as much to the elephant as to the horse and dog; and accordingly the purchasers for the Honourable East India Company's service, as we are told by Captain Williamson, required the following points in such as they bought: — "A well-arched back, a broad barrel, the hind quarters full and square, the hind-legs short and firm, the toe nails thick and black; of which, to please a native, there should be five on each fore-foot, and four on each hind foot; odd numbers being considered by them as unlucky." "I have known," says this gentleman, "some with fifteen nails, which no native would purchase; and I have heard of one with twenty, but I do not recollect seeing one with more than eighteen. The tail should be long, very thick at the insertion, and taper well to the end, where it should be well furnished, on each side, with a row of single hairs, or rather bristles for about a foot, forming a fork at the end, much resembling the feathers, or wings, on an arrow. This circumstance regarding the tail is considered by the natives perfectly indispensable; for a short tail, or a broken one, or a want of hair at the termination, are formidable objections with them. No man of consequence would be seen on an elephant whose tail was barren of hair, and particularly if broken short, as is not unfrequently the case from a habit these animals have, in their wild state, of seizing each other's tails with their trunks, and twisting them off, sometimes very close to the croup; even servants of inferior degrees are averse to riding on elephants so blemished. The chest should be wide and full, the fore-legs muscular and well turned; the forehead broad, and ornamented between the eyes by a protuberance gracefully harmonising with the surrounding parts; the top of the head should be thick set with hair, carried rather high, and square; the trunk

thick and very elastic. The teeth of a male should be exactly alike, thick and long; they should diverge from each other, so as to be rather more distant at their tips than at their insertion, and with a graceful curve; the ears should be large and free from raggedness at their edges; the cheeks full; and, above all things, the eyes clear from specks and rheum." It therefore appears, according to Captain Williamson, that although a gentleman may be able to suit himself very well with an elephant, where there may exist no intention of disposing of it again, yet to traffic in them as an article of merchandise, especially among the natives, requires not only some skill in respect to form, &c. but a complete knowledge of the prejudices entertained regarding particular points.

46. *A white elephant, as being very rare, is an object of great estimation and veneration in India;* for the Indian elephant is generally black; few of them, however, are entirely so: many are sprinkled over the ears, trunk, jowl, shoulders, chest, and legs, with dun-coloured spots. An elephant of a dirty white is not so rare; the nabob vizier had what was called a white elephant, but it was really a dun, and was an unique in Bengal; yet Captain Williamson had been informed, that in Ceylon such are by no means rare. We are inclined, notwithstanding, to believe that this assertion is erroneous, and that a really white elephant is very seldom seen, even in Ceylon. White elephants, although now extremely rare, were nevertheless known to the ancients, and were very highly prized by them. A title of the king of Siam is, "Lord of white elephants." Mr. Craufurd (*Embassy to Siam, &c.*) gives in his work an engraving of one of these animals, which was kept at that court at the time of his visit in 1821.

47. *The sporting history of the elephant*, though interesting, is much more confined than that of the horse and dog, he having been more employed in transporting the means and the messengers of death, than by engaging personally in the enterprise. The tiger and lion could, however, only be hunted with real safety by means of this animal. "His great stature, by which the hunter, when mounted on him, is lifted out of danger, renders him peculiarly fitted for such enterprise. Horses cannot be brought to follow the track of a tiger, and camels are unable to defend themselves if attacked by the ferocious beast. The hunting party is generally numerous; and the sportsmen seated on the backs of their elephants in their howdahs fearlessly proceed into the jungle, well armed for the expected combat: occasionally the hunter, with his rifle, is mounted merely upon an elephant's back. The presence of the tiger is generally made known by the elephants, which, scenting their enemy, become agitated, and make a peculiar trumpeting, indicative of their alarm. If the tiger moves, many of the elephants become ungovernable; their trunks are thrown up into the air; and if they consent to go forward, their cautious steps evince their apprehensions: those that remain steady under these circumstances are considered particularly valuable. If the motion of an animal through the jungle be perceived, the nearest elephant is halted, and the rider fires in the direction of the waving rushes. The tiger is sometimes wounded by these random shots; and he then generally bounds through the cover towards the nearest elephant (*fig.* 9.); at which time very few of them can resist the impulse of their fears. If the trunk, which the animal invariably throws up as far as possible out of reach, should be scratched by the tiger, all command is lost." Marco Polo has recorded, with great minuteness, the mode of the Grand Khan's proceeding to the chase, with his ten thousand falconers, and ten thousand "tarkoal," or waiters, whose duty it was to secure the stray falcons. "On account of the narrowness of the passes in some parts of the country where his majesty follows the chase, he is borne upon two elephants only, or sometimes a single one, being more convenient than a greater number; but under other circumstances he makes use of four, upon the backs of which is placed a pavilion of wood, handsomely carved, the inside being lined with cloth of gold, and the outside covered with the skins of lions — a mode of conveyance which is rendered necessary to him during his hunting excursions, in consequence of the gout with which his majesty is troubled. In the pavilion he always carries with him twelve of his best gerfalcons, with twelve officers from amongst his favourites, to bear him company and amuse him. Those who are on horseback by his side give him notice of the approach of cranes, or other birds; upon which he raises the curtain of the pavilion, and when he espies the game, gives directions for letting fly the gerfalcons, which seize the cranes and overpower them after a long struggle. The view of this sport, as he lies on his couch, affords extreme satisfaction to his majesty."

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FIGHT BETWEEN ELEPHANT AND TIGER.

48. *The elephant was himself also an early subject of the hunter's toil.* The Indian marked his footsteps, and then proceeded to entrap him by a pitfall. The Caffre pursued him to his deepest retirements, and then planted a poisoned arrow in some penetrable part of his body. His flesh was an object with some; his ample hide with others; but his ivory tusks were sought by all.

49. *The various modes of taking wild elephants in India* have undergone little variation for several centuries; and they are, more or less, practised in all parts of Asia, where these animals are still required to maintain the splendour of oriental luxury. Pliny, describing the manner

of capturing elephants in India, says, "The hunter mounts on an elephant already tamed; and when he meets with a wild one, separated from the herd, he pursues it, and strikes it until it is so exhausted that he is able to leap from the one to the other, and thus to reduce the wild animal to obedience." This process is as summary as that which the Roman naturalist also notices as the practice of the Troglodytes, whom Diodorus Siculus, by an expressive epithet, describes as warring against the elephants. These are said to suspend themselves on the branches of trees under which the wild herd passes, and, slipping down over the crupper of a particular animal, seize his tail with one hand, and ham-string him with the other. Although the elephant is destroyed by an experienced African marksman with much more precision than by this process of cutting his hams, he is certainly not reduced to obedience so quickly by the Indian hunters of the present day as by those whom Pliny has described for bringing him into captivity. But the operation, however slow, is at least effective; and the discipline does not require a constant repetition, as that effected by beating must have required, even if it could have been performed without danger. The various modes which are employed in India, and the adjacent islands, for keeping up the present supply of elephants for domestic use, are much more complicated than the Roman naturalist appears to have thought necessary; and these modes are now followed up, not with cruelty, but with a steady application of mild coercion, which at length effectually converts the unwieldy force of this large quadruped into a motive power, as effective and as precise in its operations as almost any one of those many ingenious inventions of modern times, which have been purposely framed to supersede the irregular movements of animal power.

50. *The rudest mode of taking the elephant* is by digging a pit in his native forests, which is covered over with loose boards, and with the boughs and grass upon which he feeds. This is mentioned as the custom of Ceylon a century ago; and the Sieur Brue describes this as the mode of taking the elephant, for his flesh, by the Africans of Senegal. Captain Williamson states, that in places where the natives find the elephants destructive neighbours, they dig a pit, covered with a slight platform of branches and grass, towards which the herd is seduced by a tame elephant; when the leading pursuer is precipitated into the trap, and the remainder retire in great alarm. This practice is evidently not very successful; and, we apprehend, that the instinctive caution of the elephant, not to tread upon any insecure ground, must render it unavailing, except when his natural prudence gives way to the more powerful impulses of terror or lust.

51. "*The method of getting elephants out of pits, also*," according to Captain Williamson, "is somewhat curious, but extremely simple. The animal is for the most part retained until sufficiently tractable to be conducted forth, when large bundles of jungle grass, tied up into sheaves, being thrown to him, he is gradually brought to the surface, at least to such an elevation as may enable him to step out." The elephant will do the same if he is swamped in boggy ground, thrusting the bundles of grass and straw into the yielding earth with his heavy feet, and placing them so around him with his trunk that he at last obtains a firm footing. Pliny says, that the companions of the unfortunate animal who is thus captured will throw branches and masses of earth into the hole to assist his deliverance. This might appear somewhat incredible, were we not aware of their great sagacity. An anecdote published by Mr. Pringle also shows a similar disposition in these animals to assist each other in distress.

Subsect. 8. *The Natural History of the Elephant.*

52. *The natural history of the elephant is too interesting to be passed over in silence.* It is well known that there are two varieties of this animal; the Indian and the African; the specific distinctions between which had remained vague and undetermined until the researches of Baron Cuvier. Indeed, neither Buffon nor Linnæus conceived that there was more than one species. Camper appears to have first detected the variation between the *dentition* of the elephants of India and Africa, as exhibited in each; presenting in the Indian a series of narrow transverse ribands of an equal size, whose edges are, as it were, scolloped; while, in the African species, the ribands assume a lozenge form, being larger towards the centre than at the extremities, and having rarely any scollops on the edges. The laminæ being larger in the African species than in the Indian, a smaller number are required to form a tooth.

53. *The Indian elephant* (*Elephas Indicus* Cuv., *fig.* 8.) stands thus characterised by this great naturalist:—"An oblong head, concave forehead, with the tops of the cheek teeth presenting undulating transverse ridges, which are the separations of the laminæ which compose them, worn by trituration. This species has the ears smaller than the other, and has four nails on the hind feet. The females have only short tusks, and many of the males are like them in this respect. The Indian elephant is found in all the southern countries of Asia, in Cochin China, in Siam, Pegu, Ava, and Hindostan. In the island of Ceylon they exist in great numbers. Although the Asiatic elephant is considered the smallest, yet it is said that a skeleton of one in the Museum, which was sent to the Czar Peter by the King of Persia, is sixteen feet and a half in height. It is to be observed, however, that this species seldom exceeds ten feet from the top of the shoulder to the ground."

54. *The African elephant* (*Elephas Africanus* Cuv., *fig.* 10.) presents a rounder head, a convex forehead, large ears, and cheek teeth with lozenge-shaped sides on their crowns. It seems to have only three nails to the hind feet. The female tusk is as large as the male, and these are generally longer than in the Indian species. The African elephant inhabits all the countries of the western side of Africa, from the Niger and the Senegal to the Cape of Good Hope. As may be observed by the figure, there is little proportion between the ears

of the two species, those of Africa having them two or even three feet in length and breadth. Elephants have been used in Asiatic warfare from a remote period; their employment in the field is recorded as early as the era of Semiramis. In modern times, it has indeed been found that although they will suffer small arms to be discharged from their backs without terror, the sight of fire and smoke from heavy artillery has caused them continually to resort to precipitate flight. Such is their docility, however, that they have been taught in the British Indian army to conquer their alarm from this cause. They were used in the late war, before the first Sutlej campaign, to drag 24-pounders and heavy mortars in the march, and thus enable the heavy artillery to keep pace with the movements of the army. At Goojerat, in the last Punjab campaign, they brought the 18-pounders into position, *under fire*, three elephants being attached to each heavy gun; and they seemed to disregard the heavy shot which was falling around them. In the Goorka campaign, in the Himalaya Mountains, 6-pounders dismounted from their carriages were hoisted on the backs of elephants, and thus taken to places to which they could not otherwise have been conveyed.

55. *The African elephant*, in the vicinity of the equator, attains to a greater size than further southward; and Mr. Cumming reports that he possesses a pair of tusks, the larger of which is ten feet nine inches in length, and weighs 173 lbs. The price which the largest ivory fetches in the English market is from 28*l.* to 32*l.* per cwt. The food of the elephant consists wholly of vegetable food, and whole acres may be seen ploughed up by his tusks in search of products. Elephants pass the greater part of the day and night in feeding, and consume immense quantities of food. Mr. Cumming graphically describes the peculiarities of this animal: "Old bull elephants are found singly or in pairs, or consorting together in small herds varying from six to twenty individuals. The younger bulls remain for many months in the company of their mothers, and these are met together in large herds. About sundown the elephant leaves his mid-day haunt, and commences his march towards the fountain, which is probably from twelve to twenty miles distant. This he generally reaches between the hours of nine and midnight, when, having slaked his thirst, and cooled his body by spouting large volumes of water over his back, he resumes his path to his forest solitude. . . . During the night they will feed in open plains and thinly wooded districts, but as day dawns they retire to the densest covers within reach, and here they remain, drawn up in a compact herd, during the heat of the day." (*A Hunter's Life in South Africa*, i. 309. 311.)

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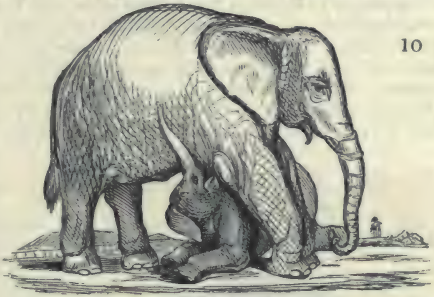

AFRICAN ELEPHANT

56. *The pace of the elephant*, when the animal is undisturbed, is bold, free, and sweeping, and characterised by gentleness, except when roused by the hunter; he then proves a most dangerous enemy, charging with the most extreme force and impetuosity. His vertebræ generally, but particularly those of the neck, are singularly short, which renders the motions of his head so confined, that he can never succeed in carrying it either to the ground for grass, or apply it aloft to browse the tender branches of trees, and even had this been otherwise, his enormous tusks would have interfered with the endeavour. Nature has, therefore, given him an organ of compensation, which unites within itself all the perfection of the human hand, with the addition of other faculties unknown to that organ.

57. "*The proboscis, or trunk of the elephant*," says the writer on this animal in the *Menageries*, "has commanded the admiration of all who have witnessed its remarkable powers. The child and the philosopher, the refined Roman, and the rude African, have equally been struck with its astonishing union of flexibility and strength. Cicero calls it, by a bold figure of speech, 'the elephant's hand;' Lucretius even more expressively describes it by the word '*anguimanus*,' the snake-hand; and the Caffre, who has learnt nothing from the poets and orators, but is taught by nature alone, when he kills an elephant, approaches the trunk with a superstitious awe, and, cutting it off, solemnly inters it, repeatedly exclaiming, 'The elephant is a great lord, and the trunk is his hand.' This organ is neither ossific nor cartilaginous, but is formed of the compactest membranous matter, inlaid with an infinite series of muscular layers, which perform its varied motions, and give it its great flexibility. Unlike most other organs, whose perceptions are marked by their delicacy and tenuity, this unites the most exquisite acuteness of perception with Herculean strength. The centre of the trunk is pierced throughout by two long canals, which are the prolongations of the nostrils, and which are separated one from the other by a fatty substance, about a third of an inch in thickness. In their whole course these channels are nearer the fore-part of the trunk than the hind; and they preserve the same diameter almost throughout, till they come as high as the centre of the bone (*os intermaxillare*) in which the tusks are planted. At this point they suddenly turn, to approach the anterior surface of this bone, making a semicircular curve. They are so compressed at this point, that unless there be a muscular action of the animal to dilate them, they operate as valves, to prevent the ascent of any liquid to a higher point. Beyond this curve the canals again

widen, and recurve back, to approach the bony part of the nostril. The elephant, by this construction, can use the trunk as a reservoir for water, drawing the liquid up by suction to a certain point, beyond which it cannot pass. Cuvier considers that the trunk is not in itself an organ of smell, because the passage of any liquid through the canals would be incompatible with the delicacy of the membrane with which the nostrils in the head are lined. That membrane in man is sensibly affected with pain when any liquid enters the nose; and, for the same reason, the sense of smell does not exist in the nostrils of those cetaceous animals that are constantly using them as a passage for water, such as the whale, that makes them operate as a *jet d'eau*. The sense of smell in the elephant, according to this great comparative anatomist, is confined to that part of the nostril which is enclosed in the bones of the head." (*Menageries*, vol. ii. p. 52.) The trunk of the elephant is terminated by a prolongation of the muscles and membrane of the organ, which is gifted with all the delicacy of perception of the human fingers, and the combined power of numerous hands. This extended portion may in fact be considered in the light of fingers, and is opposed by a more elongated papillary protrusion, which acts the part of a thumb. For wise purposes, without doubt, but which are unknown to us, the male and female terminations of the snout are not exact facsimiles of each other.

58. *The whole process of gathering and conveying food to the mouth of this animal* is so admirably described in the volume we have just quoted from, and the figures appended thereto are so illustrative, that we recommend the reader to a careful perusal of the work itself. The trunk of the elephant may be regarded as an instrument for collecting his food, which consists of vegetable substances generally, from the foliage of the forest and the grass of the plains, to the most farinaceous grain and the choicest fruits. Though his enormous bulk, requiring that his provender shall be in large quantity, renders a plentiful supply of the commoner vegetable productions necessary to him, yet his palate is highly pleased with delicacies, and is consequently peculiarly sensitive. A large quantity of liquid is equally necessary to his existence, and here again his trunk is the organ by which he is supplied. Through the channel of the trunk he draws up the required quantity by suction; he then folds the extremity of it into his mouth, and ejects the fluid there.

Subsect. 9. *The Hyæna, the Hunting Leopard, and the Once, as Assistants in the Chase.*

59. *The crocuta or spotted hyæna* (*fig.* 11.) owns the following dental characters: — three false molars above, and four below, all of which are remarkably large and strong; the upper canine tooth having two protuberances, and the lower two very strong-pointed processes; which, acted on by very powerful molar muscles, enables him to hold his prey with great ease. "This animal," says Barrow in his *Travels in Southern Africa*, "has lately been domesticated in the Snewberg, where it is now considered one of the best hunters after game, and as faithful and diligent as any of the common sorts of domestic dogs." Mr. Bennett also observes on the hyæna, that, "notwithstanding the brutal voracity of his habits, and the savage fierceness of his disposition, there is scarcely any animal that submits with greater facility to the control of man. In captivity, especially when taken young, a circumstance on which much depends in the domestication of all wild animals, he is capable of being rendered extremely tame, and even serviceable. In some parts of Southern Africa, the spotted species, which is by nature quite as ferocious in his temper as the striped inhabitant of the north, has been domiciliated in the houses of the peasantry, among whom he is preferred to the dog himself for attachment to his master, for general sagacity, and even, it is said, for his qualifications for the chase. That the striped hyæna might be rendered equally useful, is highly probable from the docility and attachment which he manifests towards his keepers, especially when allowed a certain degree of liberty, which he shows no disposition to abuse. If more closely restricted, his savage nature sometimes returns upon him; and it is for this reason that those which are carried about the country, from fair to fair, pent up in close caravans, frequently become surly, and even dangerous." Independent of these claims to our regard, the natural history of the hyæna is well worthy of attention, as one among the numerous proofs of the harmony of nature's works, which all tend to show that, however varied the several genera of her living subjects may be, yet that the species which compose the grand chain are so modified, that each separate link owns a likeness both to the one which preceded it, and to the one that is to follow it. This is particularly exemplified in the several varieties of the hyæna, all of which seem formed to unite the canine and feline races. To render the intermediate links still more smooth and uniform, the hyæna-dog, the *Canis pictus* of Desmarest, appears compounded of the wolf, the jackall, and the fox; for his teeth are seen to present all the canine characters, with this slight exception, that the small lobe in front of the false molar teeth is more perfectly developed. In all the rest of its osteology it very greatly resembles the dog, except that it has but four toes instead of five. For a portrait of this animal we would refer the reader to the Tower Menageries. The hyæna-dog, we believe, too, is also employed in the chase; and, as it is less weighty and somewhat more nimble than its congeners, it may be more conveniently carried abroad. It has long been our firm conviction that there is not an untameable animal in existence; we are therefore pleased with the opportunity of introducing the following notice relative to the hyæna from the *Library of Entertaining*

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HYÆNA.

Knowledge, art. Hyæna. "Bishop Heber saw a gentleman in India, Mr. Traill, who had one for several years, which followed him about like a dog, and fawned on those with whom he was acquainted; and the bishop mentions this as an instance of 'how much the poor hyæna is wronged, when he is described as untameable.' M. F. Cuvier also notices one that had been taken when young at the Cape, and was tamed without difficulty. His keepers had a complete command over his affections: in proof, he one day escaped from his cage, and quietly walked into a cottage, where he was retaken by them without offering any resistance. And yet the rage of this animal was occasionally very great when strangers approached it. The fact is, that the hyæna is exceedingly impatient of confinement; and feels a constant irritation at the constraint which, in the den of a menagerie, is put upon his natural habits. An individual at Exeter Change, some years ago, was so tame as to be allowed to walk about the exhibition-room. He was afterwards sold to a person who permitted him to go out with him into the fields, led by a string. After these indulgences, he became the property of a travelling showman, who kept him constantly in a cage. From that time, his ferocity became quite alarming; he would allow no stranger to approach him; and he gradually pined away and died. This is one, out of the many examples, of the miseries which we inflict upon animals, through an ignorance of their natural habits; and the same ignorance perpetuates delusions, which even men of talent, like Goldsmith, have adopted; and which still, in the instance before us, leads many to say with him, 'though taken ever so young, the hyæna cannot be tamed.' It is very doubtful whether any animal, however fierce, is incapable of being subjected to man." This one we well remember to have seen at Exeter Change, and also how extremely pleased we were with his marked fondness for his keeper. The method of using the hyæna as a hunting servant will be introduced with our notice of the properties of the hunting leopard; we shall here only remark, that his size and powers made it prudent to chain and hoodwink him, and thus to transport him to the field in an enclosure, such as a stout bamboo cage, slung between a party of men, or, where the roads would admit of it, in a small waggon drawn by an ox. In some instances, a well-trained falcon is also taken, which, settling on, or hovering over the prey, distracts its attention; and, by arresting its progress, greatly assists its capture.

60. *The hunting leopard, or chetah, of India* (*fig.* 12.) be it observed, is one of the smallest of its kind. Cuvier places it as the last of the large spotted cats. Its dentition is the same as that of the *Felinæ:* but it is remarkable, as we are told by Mr. Griffith, for the non-retractility of its claws, which weakens its predatory powers, and brings it more on a level with the canine race; for, not being capable of withdrawing them into a protecting sheath, they are liable to become blunt and non-prehensile. This animal, therefore, like the *Canis pictus*, appears a connecting link between the feline and canine tribes, which draws forth from this eminent illustrator of the *Animal Kingdom* the following ingenious remarks: — "In this species we have again, in a remarkable manner, the opportunity of observing the mutual harmony existing between the mental impulses and the physical powers of animals; their disposition or inclination to destruction is precisely in unison and proportion with their bodily powers. If very weak, they are exceedingly timid; if extremely strong, they are equally undaunted; while those which hold a medium station in this respect, seem generally to appreciate, as it were, with more sobriety, the conditions of their existence, and to submit themselves to the dominion and artificial education of man more easily than the rest. The hunting leopard is in this intermediate situation: about as big as a large dog, its leading weapons of offence, the claws, are in the same situation as those of that animal; incapable of being withdrawn into a sheath for protection, they are therefore equally exposed to the friction of the ground, by which they become worn and blunt, and so much the less effectual for active warfare; but, otherwise, the animal has all the suppleness and elasticity, the trenchant teeth and powerful jaws, of the cats. Partially deficient, therefore, in the physical powers of its congeners, it is equally wanting in the extreme ferocity of its disposition." Yet, in Ceylon, the chetah bears a bad character, and Lieut.-Colonel Campbell (*Excursions, &c. in Ceylon*, i. 100.) reports that one which was captured had, according to account, carried off six children within three weeks, and that within fifteen months twenty children had been lost by these animals. The slim make of the body and limbs of this animal, calculated apparently rather for speed than strength, assimilate it in a remarkable degree to the canine race, with which we have already compared it. In a certain aptness or capability it possesses of being trained for field sports, it is also more like the dogs than the cats. It is, therefore, strictly speaking, intermediate; and we appear to pass naturally from the latter race of animals through this species to the former. It also exhibits the first step or remove from the perfect fitness for carnivorous and predatory habits, in the loss of the retractile power of the talons. M. F. Cuvier says of the individual he

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HUNTING LEOPARD.

describes, that, except in regard to that mistrust natural to the cats, he had all the habits of those animals, playing in the same graceful manner, and with the same address; and, although his nails were not trenchant, he exercises his forepaws in play in the same manner as the cat, striking any small moving body with his paw, and seizing his food with both. Under all these circumstances, he was altogether a cat, and differed only from his congeners in his much greater degree of confidence, and in all the consequences resulting therefrom. Familiar with every one, he was always ready to make the slight noise we call purring, whenever he was caressed." (Vol. ii. p. 471.)

61. *The sporting uses of the hunting leopard* are brought into action by taking him hoodwinked to the field in a bamboo basket slung between two men. He is less frequently removed by means of a small waggon, as is the case with the hyæna; nor is he so often taken behind the horseman as the once; but occasionally two are placed in a cage, on the back of an elephant trained to the purpose. The game pursued are commonly the varieties of the deer or antelope. When the prey comes into view, the hood of the leopard is removed, and his attention is directed towards it. Catching sight of it, he usually starts off, and by leaps and bounds soon reaches and seizes it: being however soon followed by the sportsman, he is obliged to relinquish his prey; but usually he is first rewarded, which done, the hunter again hoods and replaces him from whence he came, until fresh game starts into view. When the hunting leopard is unsuccessful in capturing his prey after a few bounds, he relinquishes the pursuit, and returns to his master of his own accord. The capture of deer by means of the chetah, will be farther noticed when we treat of *Deer Hunting in India.*

62. *The once* (*Felis uncia* Linn., *fig.* 13.) *is smaller than either the hyæna or the leopard.* It is spotted on a dull white ground, and its tail is rather long and ringed. It is thought to be the same with the small panther of Oppian; and is a native to both Africa and Asia, at least to the warmer regions of the latter. Buffon has confounded it with the hunting leopard. It is taken to the field in the same manner as the leopard, but being smaller, it may be readily carried before or behind a horseman in a moderate-sized cage. After the manner of the leopard, if the caption be not quickly made, it gives up the chase and returns to its master. It is to be noted that this is not the *Felis uncia* of Gmelin, but a much smaller animal.

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THE ONCE.

63. *Effigies of animals are likewise made use of to facilitate the approach of the sportsmen.* Figures lightly stuffed to represent horses, asses, camels, deer, and sheep, were sometimes made to enclose a man; or, at other times, he *stalked* under cover of the image, after the manner of the stalking-horse of this country. Buchanan, in his *Notices of Mysore, Canara, and Malabar*, informs us, that the wild tribe of Chensie Carir have neither houses nor any fixed resting-places to encourage cultivation, but move from spot to spot, collecting their food from wild fruits and the flesh of wild animals; their children and moveables being carried on asses. Each family has a cow, which, in addition to its other useful properties, is taught to march along in the haunts of game, concealing its master by its bulk, who is thus enabled to approach sufficiently near to shoot his object with an arrow.

Subsect. 10. *Birds trained to assist in the Capture of Animals.*

64. *The birds of the air were also leagued in the predatory compact.* As the artifices of associated man became more numerous, the breaking in of the falcon and hawk tribes to assist in the chase became common. Although we may naturally conclude that this was at first a work of some difficulty, and not attended with all the success that was desired, yet at length their training became so methodised and improved, as to render them valuable aids. In the *grandes battues* of by-gone times, the great sportsmen of the east, whatever was the principal object of the chase, never went unprovided with falcons to let fly in the pursuit of any accidental game which might be met with. Eagles were also trained to stoop at wolves; pitching on their necks, their grasp was so powerful as partially to strangle the stoutest, and paralyse the resistance of the most active among them, the cruel foe commencing the work of disintegration by tearing out the eyes, and completing it by devouring the carcass. Even wild horses, it is said, were overcome by the eagle, who, fixing himself firmly on the crest, and violently striking the head and eyes with his wings, in time wore out the strength of the animal in fruitless efforts to get rid of his adversary, so that he became readily overtaken by the dogs and mounted hunters which pursued him. The eastern records inform us, that the great Khan Kublai, emperor of the Moguls, in his vast hunting expeditions, was accompanied by ten thousand falconers, who carried with them hunting eagles and hawks of every description, in immense numbers. The nobles, likewise, who accompanied him, had their falcons and falconers. Every one of these birds, we are told, had a silver ring on its leg, with the name of the owner engraved on it. As the vast retinue proceeded on their hunting expedition, the cranes, storks, swans, herons, pheasants, partridges, &c., were all attacked in succession as they appeared. Some of the Siberian hawks were of a milk-white colour, with the exception of one or two wing or tail-feathers, which

were black. The Russian czar, Ivan Vassilivitch, had three hundred falconers, who had the best gerfalcons in the world, which were mostly brought from Siberia. We have also another proof of the prevalence of hawking in early times, in the account of Olearius, who observes, that "in a walk of a league from Astracan, among the habitations of the Tartars, it was remarked that every hut had its falcon."

65. *The capture of the splendid and monstrous sized butterflies of this country* by means of sparrows trained to the purpose, was long ago an amusement here; and it may be supposed to have formed a sort of mimicry of the hawking of the czars. It is thus in every country, that the dangers of a hostile feeling of the lower classes expends itself in either a humble or a burlesque imitation of the sports of their superiors.

BOOK II.

THE PROGRESS OF FIELD SPORTS AFTER MANKIND HAD PEOPLED THE FOUR QUARTERS OF THE GLOBE.

66. *It may be supposed that as man extended himself over the earth, he would carry with him his habits and manners.* That this was the case appears fully proved; for wherever a new race has been met with, it has always been a predatory one, fully employed in the pursuit of the various animals around. These living objects necessarily vary according to the locality; and thus, to pursue the subject of foreign sportings through the middle ages to the present time, with any degree of precision, it requires that we treat of it according as it is practised in the different quarters of the globe. The subject, as it relates to *extra* British sportings, must necessarily be rather slightly sketched, that we may be enabled to enter into a more full and ample detail of those that are *intra* British. It may be further remarked, that field sports being principally founded on the pursuit of the wild animals of any locality, so, to practise them successfully, the means used must be adapted to the size, form, habits, and resting-places of those animals. This being granted, it follows, that some previous inquiry into such particulars as relate to the game found in the different quarters of the globe cannot be irrelevant; but, on the contrary, must assist the views of such sportsmen as are on the eve of visiting foreign countries, by enabling them to make the requisite preparations for such sporting purpose. What would be thought of the angler who produced a heavy jack-trolling apparatus on the banks of a swift Welsh pebbly-bottomed stream? or of one going out on a snipe-shooting expedition with a duck-gun and swan shot? The "fore-horse of the team," it is true, has been seen at a fox-chase, and *in place* too; but it was an extraordinary case, and one sanctioned and immortalised by circumstance and necessity. Contrast the northern in pursuit of the arctic bear, with the light clad English sportsman, Septemberising in a stubble-field on a sultry day. Each is now *in his place.* Change them, and how completely would each be *out of place*, out of *material*, and certainly out of sport. To a traveller, we repeat, a general knowledge of the distribution of animals is useful, and indeed necessary. Almost any man, but certainly every sportsman, who was going abroad, whatever might be the occasion of his travel, would without doubt have an eye to the by-play he might meet with. To him it would be most important to know the animals of the countries he was to pass through, and particularly those of the locality he was bound for. Under this view, we propose to append to each principal geographical division a slight sketch of its zoological contents and circumstances of distribution; particularly observing that, as it is intended principally to refer to the living subjects connected with field sports, it must necessarily be incomplete. Should it, however, excite a wish for further information on the subject, we would refer to the works of our most eminent naturalists, and particularly to the *Geographical Distribution of Animals* by Mr. Swainson.

Chap. I.

The Progress of Field Sports in Asia.

67. *This quarter of the globe, as it appears to have been the cradle of man*, may also be supposed to have been the birthplace of field sports; and here we have seen that they really received an extension, in some measure commensurate with the size and powers of the wild animals with which the Asiatics had to contend. It was here the elephant was entrapped, and merchandise made of his ivory tusks; and it was here also that man fought with the tiger for the fastnesses he occupied. The rhinoceros was rendered scarce, the wild ox tamed, the camel reduced to slavery, and even the wild horse and ass taught to exert their speed in the service of man, seeking him as a benefactor, instead of flying from his approach

as an enemy. As population increased, and man sought a wider field of action, he carried with him his habits, and wherever he rested, and became naturalised, there he introduced field sports; first, as an aid to his support, and, as his civilisation advanced, he continued and varied the practice of them for his amusement. We thus trace the extension of the sports of the chase with the progress of population and civilisation throughout India, into Persia, Spain, Italy, and Gaul.

68. *Asia, therefore, as the birthplace of field sports, has an especial claim to our attention.* Vast in its extent, and diversified in its temperature and productions, it presents animals of widely distinct characters and habits; but in nothing does it more strongly claim our attention than in the presumption that our most valuable and important animals are of Asiatic origin. The horse, we are informed by history, was derived from the deserts of Tartary, as the ox is supposed to have been first domesticated by the Caucasians; and we believe it to be notorious that some of the most important of our domestic fowls were derived from this quarter of the globe. It was here that man first met with that mimic representation of himself, the ouran-outang; and in proof that diversities in form are necessary to meet the peculiarities of location, it may be remarked that, although Asia owns its lions as well as Africa, yet they are of a distinct species, as may be readily seen by observing them in our menageries, particularly in the Surrey Zoological Gardens. That peculiar equine variety, *hemionus,* known also as the *dziggtai,* or Mongolian horse, is derived from central Asia; where likewise the long-armed ape, with other caricatures of the human form, abound; while panthers, leopards, lynxes, hyænas, and jackals, are in such plenty, that there can be no lack of sport for the hunter; nor can the gunner draw a blank, while the innumerable tribes of land and water-fowl teem as they do in this region.

69. *The northern confines of Asia exhibit few large animals.* The desert steppes of Siberia are principally occupied by varieties of the *Rodentia,* as rats, mice, lemings, &c., with rabbits and hares of diminutive breeds, but which afford never-ending amusement to both native and visiting sportsmen. As we approach central Asia, we meet with the Tartaric or yak ox, and the *arni* buffalo, which are occasionally hunted by travellers, and exposed to constant pursuit by the natives with rifles, and also to way-laying with poisoned arrows.

70. *Southern Asia,* as Mr. Swainson observes, *presents an exuberance of animal forms* in that high state of development which is the result of equinoctial latitudes. Thus it is that in southern India nature revels in the multiplicity and gigantic forms of her creatures. Here the apes and baboons reach their utmost limits of stature; and, as a notable instance of the effects resulting from similar degrees of latitude, this eminent naturalist notices the striking analogy between the animals of equinoctial India and those found under the same latitude in Africa. It is not in the apes and baboons alone that this is witnessed; it is seen in the elephant also, in which that of India finds a correspondent rival in that of Africa; which, however, was not until of late years discovered to be a distinct species.

71. *The feathered tribes of Asia, generally, are splendid in the extreme.* Of those of China we know less than we wish. A few living specimens have reached England, among which the *golden pheasant* of our aviaries (*Nycthemerus pictus* Swainson, *fig.* 14.) is a prominent example, which this naturalist considers as a subgenus of the pheasant, by the head being more or less naked, and by the males possessing either a feathered or a fleshy crest; which, under his view, makes them a connecting link between the common pheasant and our barn-door fowls. We know that this gorgeous bird will breed in this country, although the occurrence is rare. M. Temninck, however, thinks this principally arises from over care and close confinement. He recommends that they should, on the contrary, be set at liberty; and assures us that in Germany they have been turned down into an unconfined pheasantry with the common species, and did well. We know that something of the kind was tried by our Zoological Society also; but we are not aware of the result, though we have no doubt but that in a very sheltered situation it would succeed, if even it did not do so in the Society's grounds. China, indeed, would appear to have been the cradle of the gorgeous gallinaceous tribes: the *ring-necked pheasant,* which with us is regarded as an accidental variety, is indigenous to the northern provinces of this empire. The *silver pheasant* (*Nyc. argentatus*), another beautiful ornament of our menageries, is likewise derived from China, where nature seems to revel in the number and exquisite colourings of her birds and insects. Until our communication with this country is more intimate, we must, however, content ourselves with such resemblances of beasts, birds, &c., as they send

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GOLDEN PHEASANT.

us; and, as we know the Chinese are not very imaginative, we may rely on the numerous coloured drawings of them which they send being faithful representations; under which view we cannot fail to be struck with the elegance of their forms and the brilliancy of their plumage. The gallinaceous birds of central Asia generally (the originals of our own domestic breeds), we also know to be equally beautiful and varied; and it is their plenty that has lured so many of our countrymen to their destruction by the pursuit of them over woody swamps and under burning skies.

72. *The existence of bears in India was long denied*, but further acquaintance with that country corrected this error; and many accounts of bear hunts had reached us long before Captain Williamson had so well depicted them. Subsequently, Mr. Johnson and others have detailed the chasings of the black bear in the hilly parts of India as very common, though notices of any other variety are very meagre. Instead, however, of there being only one kind of bear in India, the interior furnishes "three distinct and peculiar species, *Ursus Libiatus*, *Malayanus*, and *Thibetanus*, all of which are inhabitants of the mountainous districts." It is not only in its lions that Asia differs from Africa, but also in other varieties of the *Felinæ;* thus the true tiger is unknown in Africa: neither is the rhinoceros of Asia and that of Africa consimilar. Four distinct varieties of oxen have long been domesticated in Asia. First, the common Indian ox; second, the *yak*, or ox of the Tartars, so well described by Ælian, under the name of *poephagus;* third, the buffalo, long native of the southern parts of Asia, India, and China, called *arni* by the Indians, and said to be equalled in size only by the elephant. This is the beast that it was usual for the native princes of India to match in battle with the elephant. Fourth, the *gayal*, domesticated among the Burmese, and running wild in some parts of India under the name of *gaur*. Sheep and goats, both wild and domestic, are numerous. The broad-tailed sheep is a singular object, as having a tail which frequently yields ten pounds of fat. Among the goats, the celebrated shawl-goat of Cashmere must not pass unnoticed, which, though of very mean and ordinary appearance yet yields wool of such fine texture as to be unequalled; and, though himself not very showy, his coat forms a most elegant article of dress for the ladies of Europe.

Sect. I. *The Field Sports of China, Thibet, and Indo-Chinese Countries.*

73. *In this populous and ancient empire, it may be supposed that the pursuit of wild animals is very varied and extensive;* but our intercourse with its natives being very limited, from their jealousy of the eyes of strangers, little that is recorded on the subject has reached us, and even that little is probably mixed with fable. We are, however, fully aware that the Chinese have always pursued the wild beasts of their country with ardour and with true Asiatic pomp and pageantry. Rankin, in his *Historical Researches*, says, "the Chinese emperor Kamhi, gave a hunting entertainment in his park, near Pekin, to the Russian ambassador. After hunting until near four, we came to the top of an artificial hill, where were tents for the imperial family; after dinner, the emperor sent to the ambassador, to inform him that three tigers should be baited for his amusement; preparations being first made to secure the principal spectators from danger by ranks of guards armed with spears. The first tiger was let out of his cage by a man on a fleet horse, who opened the door by means of a rope, and then rode off. The tiger came out, rolled on the grass, then growled, and walked about. The emperor fired bullets with his matchlock, but was too distant: he then sent to the Russian ambassador to try his gun, who, advancing within ten paces, shot the tiger dead. The second tiger was then let out, and rolled on the grass like the first. A man to rouse him to action, shot at him with a blunt arrow. He pursued the man, who narrowly escaped by the fleetness of his horse, and the tiger attempted to leap over the ranks of guards, but was killed by them. The third when let loose at once made towards the emperor's tents, and so was quickly dispatched with the soldiers' spears. This emperor used to hunt tigers in their native woods in his youth, but being now sixty, he refrained from pursuing them beyond this immense forest, which is enclosed for many miles extent with a high wall of brick. It contains besides tigers, leopards, lynxes, boars, deer, hares, partridges, quails, and pheasants. The emperor was surrounded by his sporting establishment, and close to him was the master of the chase with greyhounds. The grand falconer was also present with hawks, many of which were as white as doves, with only one or two black feathers in their wings or tails; these came from Siberia. They generally raked the pheasants flying; but if the pheasants escaped to the reeds or bushes, they nevertheless soon caught them."

74. *The wild boar, the tiger, the leopard, the buffalo, the rhinoceros, and the wild bear, are all natives of China;* but the lion cannot be said to be one of its *indigenæ*, nor is the elephant common there. Of deer, they have two or three varieties, and most of the lesser beasts which we follow in our sportings are also found there. The Chinese, from the highest to the lowest, are fond of the water, and

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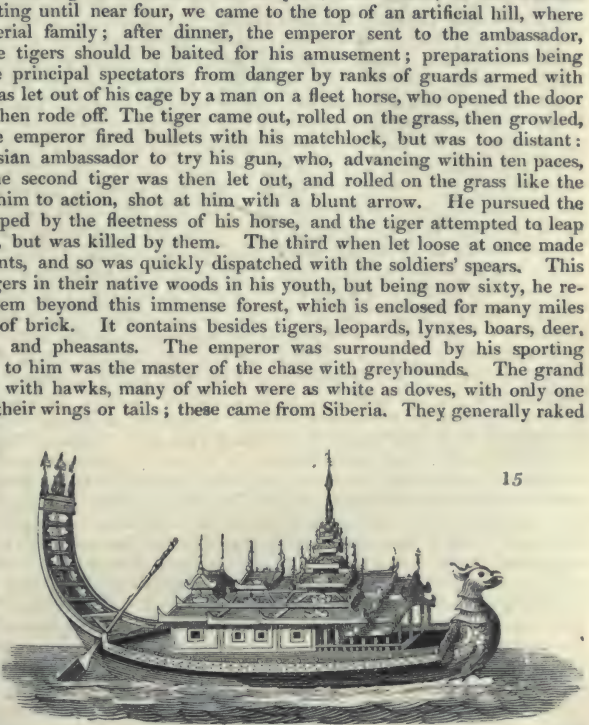

CHINESE BARGE.

spend much of their time on it in various aquatic amusements, as fishing, wildfowl shooting, &c. The great men, on these occasions, take the water in a very splendid state barge (*fig.* 15.), in which they amuse themselves in making coasting excursions, and sometimes in the capture of ducks, after the following manner: — "Waders and swimmers are employed, each having to scoop a calibash, or large gourd, and fit it to the head, leaving proper apertures for sight and respiration. Thus prepared, the fishers make their way in the water, sinking their bodies up to the chin. The ducks, which are fond of this kind of fruit, and are accustomed to see them floating in the fens, make up to the gourd, and at the very instant they go to peck at it, the fisherman seizes them by the feet."

75. *The methods of taking fish in China are very varied*: Vast numbers of the Chinese live on the great rivers and lakes in barges or floating houses, and subsist principally on the produce of the water; by which their ingenuity in devising new methods of taking the finny tribes is in continual exercise. In addition to the havoc made by lines and nets, as practised by us, they have several other contrivances, among which may be noticed the training of birds of the cormorant kind to fish for them. These fowls are taught to follow the fishermen to their boats as obediently as so many dogs, and to begin their work usually by day-break in the following manner: — "At a signal given by a dash of an oar upon the water, these birds dive into the river, seize the first fish they meet with, and return with it in their bills to the boat; but, as these birds are naturally greedy of fish, to prevent their devouring or otherwise damaging their prey, they enter on their work with a ring round their neck, which hinders them from swallowing the fish. When at any time one of these birds meets with a fish that is above its match, then two or more will join together, both in the attack and the conveyance of it, whilst one at the tail, and the other at the head, fly with their prey to the boat."

76. *In some of the Chinese provinces the fishermen entrap fish thus:* — They make use, we are told, of long narrow boats, to each side of which they fasten a plank of the length of the boat, and about two feet in breadth. These planks, which are painted white and overlaid with a shining varnish, slope downwards, with an easy descent, to the water. The fishermen take water in these boats in a clear moon-shiny night, when the fish, playing on the surface, mistake the brightness of the plank for that of the element, and, leaping into the boat, are caught in the trap. Fish are also shot by them with arrows, which, being fastened to the bow with a long string, the same serves both to save the arrow and likewise to draw in the fish when shot. Sometimes, also, they catch fish by diving; and at other times they do it by concealing themselves in the boat, from which they strike them suddenly with a kind of barbed trident; they frequently even catch them with their hands only.

77. *The field sportings of Thibet do not occupy much space in the accounts of travellers,* although the zoology of this mountainous region is worthy of notice. Here the musk deer is found, from whose body is extracted that costly drug musk, which of course renders the animal a constant object of pursuit by the natives, as well as one of much interest to the inquisitive visitor. We have already cursorily noticed that direct link between the horse and ass, known to the moderns as the *dziggtai*, or *Equus hemionus* of Pallas, to whose travels and researches we are principally indebted for what is related of it. In height, it is equal to a moderate-sized horse; and were it not for its more elongated ears, straighter back, and tail more like that of the cow than the horse, it might pass for one; it also herds in troops of from twenty to a hundred in number. There is little reason to doubt that it is the wild mule of the ancients, but no records of its ever having been tamed have appeared; which can only be accounted for by the early subjugation of the horse, whose docility, contrasted with the wild and fiery aspect of this animal, might have deterred the natives from such an attempt. Its hair, like that of the horse of Europe, is deciduous, being in winter long and fleecy, but short and fine in summer. The Thibet goat has been already noticed as an Asiatic native, that luxuriates here. The yak ox also is here abundant; it is an animal as large as an English bull, long bodied, with horns which rise in a line from the profile, and a tail which is used in India as the *chauri*, or fly-flapper. The ibex of Thibet is larger than the European species, and has long curved horns, one specimen of which, in the possession of Mr. Vigne, measured four feet and a quarter from base to tip. The *kuch-kar*, a gigantic mufflon, the *sha*, or goat-deer, allied to the Corsican mufflon, but much larger, fifteen different species of wild sheep, the bear, wolf, fox, hare, marmot, &c., are amongst the other wild quadrupeds of Thibet. The country has, however, been so little explored by Europeans, that we are scarcely acquainted with the field-sports of its inhabitants, and Mr. Vigne, from whose *Travels in Cashmere, Ladakh*, &c., we derive our chief information, treats more of *changan*, a game imported from Persia, in which a ball is dexterously struck with mallets borne by riders on horseback, than of hunting, fishing, or other modes of taking wild animals. The birds of Thibet are some of them such as would glad the heart of the sportsman to pursue, and of the ornithologist to be able to stuff for his museum. Among them the horned *pheasant* (*Phasianus cornutus*) stands conspicuous. This magnificent bird, in size larger than our pheasant, presents a red head, having a blue horny patch over each eye; the throat also has a blue naked flap with orange spots, the breast and back being red, and the rest of the plumage of a deep chesnut brown, which is relieved by white spots edged with black. The *Impeyan pheasant* (*Lopophorus refulgens*), called by Indians the "bird of gold," is somewhat less than the former, but equally beautiful, exhibiting lanceolate feathers of a splendid metallic lustre. The zoology of Thibet is, in fact, much richer than the paucity of its vegetable products would lead us to anticipate.

78. *The Indo-Chinese countries are next to be noticed.* Here, also, nature displays her most luxuriant forms. The mountains are very lofty, and their sides being very thickly wooded, afford excellent covers for a great number of wild beasts. Within this range are the ouran-outang, large, lesser, and silvery gibbons, and Malacca stag. In both Malacca and Java the *crowned pheasant* (*Cryptonyx coronatus* T.) is met

with, and likewise the gigantic Argus pheasant, which is more than six feet long, and is celebrated for the large snowy spots or eyes on its tail feathers, which give the whole a beautiful effect. Here, also, snow-white cockatoos, red lories, parrots, and parrokeets, abound in great variety. Of serpents there is no lack; and the insects are as numerous as they are beautiful, and some of them as troublesome as those which any other country can produce. Hawking is here a very common sport, even among the ordinary natives. A small variety of hawk is trained by them to frighten the birds under the cover of a very large net. Dogs of several varieties are likewise used in the chase, which have the good fortune, when too old for the service of the field, to be killed for the table. In Cochin China fishing is pursued to such an extent, that dried fish forms one of the exports of the country; and on the Indo-Chinese coasts is collected the substance known there as sea slug, *tripang*, or *biche de mer*. The gelatinous birds' nests, elsewhere noticed. are here also collected, both being in great request in the Chinese markets.

Sect. II. *The Field Sports of India.*

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INDIAN SPORTSMEN TAKING THE FIELD.

79. *Our intercourse with this extensive country being as intimate and common, as it is confined in China*, we shall enter somewhat more into detail on the subject of the Indian chase. Field sports of every variety are here pursued with extreme avidity, and perhaps it is not too much to assert, that there cannot be a more imposing spectacle than the morning turn-out of even a common Indian sporting party, which our cut (*fig.* 16.) is intended to represent. Captains Williamson and Munday have both been very felicitous in their descriptions of these scenes, and to the *Oriental Field Sports* of the former we owe much. Captain Munday also, in his *Pen and Pencil Sketches of India*, presents some very imposing accounts of the sportings of the native princes of that vast territory; in particular he thus details one hunting fête given by the king, Nuseer-ood-deen Hyder: — " Early in the morning, the whole party, including ladies, mounted elephants, and repaired to a palace in the park, in one of the courts of which the arena for the combats was prepared. In the centre was erected a gigantic cage of strong bamboos, about fifty feet high, and of like diameter, and roofed with rope net-work. Sundry smaller cells, communicating by sliding doors with the main theatre, were tenanted by every species of the savagest inhabitants of the forest. In the large cage, crowded together, and presenting a formidable front of broad, shaggy foreheads, well armed with horns, stood a group of buffaloes, sternly awaiting the conflict, with their rear scientifically *appuyé* against the bamboos. The trap-doors being lifted, two tigers, and the same number of bears and leopards rushed into the centre. The buffaloes instantly commenced hostilities, and made complete shuttlecocks of the bears, who, however, finally escaped by climbing up the bamboos, beyond the reach of their horned antagonists. The tigers, one of which was a beautiful animal, fared scarcely better; indeed, the odds were much against them, there being five buffaloes. They appeared, however, to be no match for these powerful creatures, even single-handed, and showed little disposition to be the assaulters. The larger tiger was much gored in the head, and in return took a mouthful of his enemy's dewlap, but was finally (as the fancy would describe it) ' bored to the ropes and floored.' The leopards seemed throughout the conflict sedulously to avoid a breach of the peace. A rhinoceros was next let loose in the open court-yard, and the attendants attempted to induce him to pick a quarrel with a tiger who was chained to a ring. The rhinoceros appeared, however, to consider a fettered foe as quite beneath his enmity; and having once approached the tiger, and quietly surveyed him, as he writhed and growled, expecting the attack, turned suddenly round, and trotted awkwardly off to the yard-gate, where he capsized a palankeen, which was carrying away a lady fatigued with the sight of these unfeminine sports. A buffalo and a tiger were the next combatants; they attacked furiously, the tiger springing at the first onset on the other's head, and tearing his neck severely; but he was quickly dismounted, and thrown with such violence as nearly to break his back, and quite to disable him from renewing the combat. A small elephant was next impelled to attack a leopard. The battle was short and decisive; the former falling on his knees, and thrusting his blunted tusks nearly through his antagonist. On our return from the beast-fight, a breakfast awaited us at the royal palace; and the white table-cloth being removed, quails, trained for the purpose, were placed upon the green cloth, and fought most gamely, after

the manner of the English cockpit. This is an amusement much in fashion among the natives of rank, and they bet large sums on their birds, as they lounge luxuriously around, smoking their hookahs. Elephant fights were announced as the concluding scene of this day of strife. We soon discovered two of the combatants slowly advancing towards each other from opposite sides of the plain. As they approached, their speed gradually increased, and they at length met, with a grand shock, entwining their trunks, and pushing, until one finding himself over-matched, fairly turned tail, and received his adversary's charge in the rear. This was so violent, that the mahout of the flying elephant was dislodged from his seat; he fortunately fell wide of the pursuer, and escaped with a few bruises. Five or six couple were fought, but showed little sport; the sagacious animals instantly discovering when they were over-matched."

80. *Elephant hunting is common in Ceylon*, where the elephant has been said by Finlayson and others to attain a greater size than on the continent of Asia, though Major Forbes reports, that during his residence of eleven years in the island, few elephants out of all the numbers he saw exceeded nine feet, and but one ten feet in height. The native hunters of Ceylon take the wild elephant alive by noosing him in his walks, dexterously slipping a noose of bullock's-hide rope around one of his hind legs as he raises it, and at the next moment fixing the other end of the rope round an adjacent tree. The animal presently stumbles and falls, and before he has time to rise he is effectually secured by assistants, who place other strong ropes around his limbs. Another method employed is to suffer the animal to place his foot within an area bounded by a concealed noose, the other end being already tied to a tree; the hunter in ambush then suddenly raises it around his leg, and by the aid of assistant hunters the capture is often effected without much difficulty. Another plan is, to ensnare the elephant in a kraal or large enclosure, formed of trunks of trees driven three or four feet into the earth, and rising to about twelve feet above it, transversely across which posts large branches are fastened, propped up by other forest timber. The native hunters then dispose themselves so as to surround the herd, which, by shouting, firing guns, and the noise of rude instruments, they frighten towards the kraal, where tame decoy elephants are sometimes stationed to lead the wild ones into the snare. The opening of the kraal being then closed up, the hunters would spread themselves around the outside, and repel with their weapons the efforts of the terrified and enraged prisoners. The skull of the elephant is so massive, that rifle balls of any description striking the bone scarcely make any impression on the animal beyond augmenting its fury. Neither are balls simply of lead of much avail in the chase of the elephant, and brass balls or leaden bullets, hardened by the addition of some other metal, are commonly made use of. Colonel Campbell (*Excursions in Ceylon*, 277.) avers that even with these balls it is useless to fire at an elephant from a greater distance than fifteen or twenty yards. He states, indeed, that with bold sportsmen it is the practice in Ceylon to walk deliberately up to within probably a dozen yards of the animal, which stands staring fixedly at the hunter, and then with a double-barrelled rifle to plant a brass ball in the space between the eyes, or in the eye itself. If one shot fail, a second generally finishes the business; though if the aim of both be missed, the destruction of the adventurous sportsman is all but certain. (*Ibid.* p. 279.) The elephant will, however, sometimes receive a great many shots before any prove fatal. Mr. Cumming states that he attacked a first-rate male in a dense jungle near the Limpopo river in South Africa, and fought him "from half-past eleven until the sun was under, when his tough old spirit fled, and the venerable monarch of the forest fell, pierced with fifty-seven balls." (*A Hunter's Life in South Africa*, ii. 194.) Elephant hunting is fully treated of in the works already quoted, and in Major Forbes's *Eleven Years in Ceylon*. See also our section on *Field Sports in Ceylon*.

SUBSECT. 1. *Hunting the Rhinoceros.*

81. *The rhinoceros* (*Rhinoceros unicornis* Linn.) in size and strength is inferior only to the elephant. The Indian and African species of this genus differ in their leading characters, both as to the number and form of their teeth. The incisors are either altogether wanting, or there are four in each jaw, two very strong, and two small and weak. Canine teeth they have none, but the cheek teeth are seven in each jaw on each side. The Indian species (*fig.* 17.) has one horn only; that with two horns is most common in Africa. The horns of both present a singular character; they do not envelop a bony axis, like the horns of ruminating animals, nor do they partake of the osseous nature of the horns of stags;

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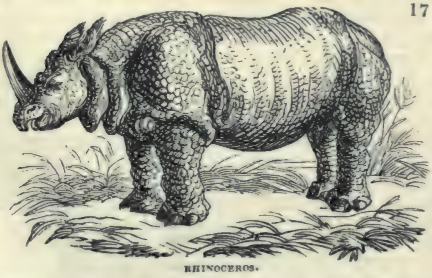

RHINOCEROS.

but they appear to be formed of horny fibres, like thick hairs closely agglutinated together. Some incline to think this to be the unicorn of the ancients. Bewick's general account of the rhinoceros runs thus: — "The body, from the muzzle to the tail, is twelve feet long, and in circumference it is nearly the same; thus, were it not for the shortness of its legs, it would be little inferior in size to the elephant. The body and limbs are covered with a skin so hard and impenetrable, that he fears neither the claws of the tiger, nor the more formidable proboscis of the elephant; it will turn the edge of a scimitar, and even resist the force of a musket ball. It is of a blackish colour; and, as seen by the figure, forms itself into large folds at the neck, the shoulders, and the crupper, by which means the motion of the head and limbs is facilitated. Round the neck, which is very short, are two large folds; there is also a fold from the shoulders, which hangs down upon the fore-legs, and another from the hind part of the back to the thighs. The body is every where covered with tuberosities or knots, which are small on the neck and back, but larger on the sides; the thighs, legs, and even the feet, are full of these incrustations." The rhinoceros is occasionally ferocious in the extreme, and indeed at no time can he be approached with safety. Between him and the elephant a great antipathy is said to exist; but the latter seldom willingly attacks the former: on the contrary, it would appear from some statements in which Mr. Williamson confided, that if a herd of elephants encounter this formidable animal, they retreat, if possible, without hazarding a battle. Major Sully also informed the same gentleman, that he once witnessed from a distant hill a most desperate engagement between a large male elephant and a rhinoceros, in which the former was worsted and fled. Major Smith also relates that a hunting party of Europeans, with their relative attendants and elephants, met with a herd of seven rhinoceroses, apparently led by one, much larger and stronger than the rest, which boldly charged the hunters. The leading elephants, instead of using their tusks as weapons, suddenly wheeled round, and received the thrust of the rhinoceros's horn on the posteriors — the blow brought them and their riders to the ground. No sooner had they risen than it was repeated; and in this manner did the contest continue, until four of the seven were shot, when the rest retreated.

82. *Hunting the rhinoceros is also undertaken by shecarries*, or native sportsmen, in India, for the skin of the animal, which is much valued for its durability and impenetrability. A shield made from it is able to resist a leaden bullet; it will also take a very fine polish. "The shecarries, who lie in wait for the rhinoceros, are ordinarily furnished with *jinjals*, or heavy matchlocks, such as are commonly appropriated for the defence of mud forts, and may be properly classed with the arquebus of former times. They carry balls from one to three ounces in weight; and having very substantial barrels, are too heavy to fire without a rest. Many have an iron fork, of about a foot or more in length, fixed by a pivot not far from the muzzle, which being placed on a wall, in a bush, or even on the ground, serves to support it, and enables the shecarrie to aim with great precision, which he seldom fails to do. To the power of an iron ball, discharged from a jinjal, even the rhinoceros must submit; though sometimes he will carry off one or more balls, and wander many hours before he drops. The aim being taken from a tree, or from some inaccessible situation, in which the shecarrie feels himself secure, and a steady cool sight can be taken, rarely proves incorrect. Levelling with precision at the eye, the thorax, or under the flap of the shoulder, all which are principal objects of the attack, he generally inflicts a fatal wound. The rhinoceros now becomes desperate; roaring, snorting, stamping, and tearing up the ground both with his horn and his feet, as bulls are wont to do, butting at trees, and at every object that may be within his reach. The cautious shecarrie waits with patience for his last gasp; sensible that, while a spark of life remains, it would be highly imprudent to venture from his state of safety, or to approach the ferocious prey. Oxen are ordinarily used to drag the carcass away, which is the common mode of conveyance; horses not being employed in India, except for riding among the natives, and because elephants and horses are so afraid of even a dead rhinoceros, as to render it peculiarly difficult to induce their approach within either sight or smell of one. Elephants that have been long taken, and which in all probability may have in some measure forgotten their old enemy, do not in general evince such extreme dread; though, when they do venture, it is always with very evident distrust, and after much evasion." (*Oriental Field Sports*, vol. i. p. 169.)

Subsect. 2. *Hunting the Tiger.*

83. *The natural history of the Bengal or royal tiger* offers to our notice an almost isolated species of the *Felinæ*, distinguished from the other species by his transverse striping (*fig.* 18.). "Compared with the lion," says Mr. Griffith, "he is thinner and lighter, and has the head rounder. The upper part of the body is yellow, the under part white. The whole internal face of the ears, and a spot on the external surface round and over the eyes, the end of the muzzle, cheeks, throat, neck, chest, belly, and internal sides of the limbs, are white; and the tail is annulated with black on a whitish-yellow ground. The eye pupils are generally said to be round, and indeed we have never observed it otherwise; but, in the instance mentioned by Major Smith, they assumed an elliptical figure."

83. *a. The statement that tigers* sometimes attain the length of fifteen or sixteen feet must be regarded as a fiction. The largest of which we have received any authentic account (says Mr. Campbell) did not much exceed eleven feet from tip to tail. While young, and exclusively inhabiting the recesses of the forests and jungles, the tiger feeds chiefly on deer, and will seldom attack man, unless provoked or forced by hunger, preferring rather to fly than fight, by sneaking through the tall grass in which it commonly lies concealed. When once, however, the tiger has tasted human flesh, he prefers it to any other, and thenceforth often leaves his secluded lair, and fixes his quarters in the neighbourhood of some village, prowling about to seize upon every unsuspecting victim whom he can seize upon. Such tigers acquire the name of man-eaters. Although more bloodthirsty and cunning than previously, they are said to be also more cowardly; and it has been thought that human flesh is not so suitable as an aliment for them, notwithstanding their acquired taste for it, since confirmed "man-eaters" have been found apt to become mangy, and their colour to deteriorate much in brightness, though these may, with equal reason, be supposed the effects of age.

84. *The methods of attacking the tiger are various*, and have increased in number and ingenuity as the resources of man have become multiplied. Traps have long been common, and are seen of different constructions. "Sometimes they have been made in the form of strong cages, with falling doors, into which the beast is enticed by a goat or dog enclosed as a bait. Sometimes they manage so that a large beam is made to fall in a groove across the tiger's back; at other times it is *noosed* about the loins with strong ratans, or led to ascend a plank nearly balanced, which, turning when it has passed the centre, lets the animal fall upon sharp stakes prepared below. Instances have occurred of a tiger being caught by one of the former modes, which had many marks in its body of the partial success of this last expedient. The tigers of Sumatra are very large and strong. They are said to break the leg of a horse or buffalo with a stroke of the forepaw; and the largest prey they kill is, without difficulty, dragged by them into the woods. This they usually perform on the second night, being supposed on the first to gratify themselves with sucking the blood only. Time is by this delay afforded to prepare for their destruction; and to the methods already enumerated, besides shooting them, may be added that of placing a vessel of water strongly impregnated with arsenic near the carcass, which is fastened to a tree, to prevent its being carried off. The tiger having satiated himself with the flesh, is prompted to assuage its thirst with the tempting liquor at hand, and perishes in the indulgence." (*Animal Kingdom*, vol. i. p. 440.)

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TIGER.

85. *Poisoned arrows* are also used by the native sportsmen, or shecarries, in the destruction of the tiger. These animals are also shot from platforms and various ambushes in which the gunner lies concealed. Captain Williamson thus details the construction of the most usual apparatus for self-discharging bows to shoot tigers by arrows either poisoned or not. "The bow is fixed at the middle by two stakes, distant enough to allow the arrow to pass freely without touching, and at about eighteen inches, or two feet, from the ground, according to the size of the animal to be killed. The great nicety is, to fix the bow so that the arrow may fly quite horizontally; or, at least, as much so as the principles of projectiles will admit. The chord of the arc should be parallel to the road frequented by the tiger. The string being drawn back, so as to bend the bow sufficiently, is kept at its stretch by means of a stiff piece of stick, cut just the length, so as to pinch a wedge against the inside of the bow. This wedge comes down six or eight inches, and at its lower end has a strong line fastened to it, which being carried across the pathway, for perhaps twenty or thirty yards, and strained moderately tight, is there fastened to a strong stake driven into the ground for the purpose, if no sufficient bush be at hand. This being done, the arrow is gently deposited in its proper place; for to give it the requisite position before the cord was stretched would be dangerous, as in setting the latter tight, the wedge might be drawn, and the arrow be discharged at the operator. The reader will, from this description, understand that the bow is firmly fixed, and that the wedge, introduced between the inside and the extended string of the bow, operates as a lever; for when any power, such as the step of a tiger, presses against the string, and causes it to depart from its right line, the wedge must necessarily give way to the force, and turn the extending stick downwards, thereby setting it at liberty, and occasioning the bow to act instantaneously. Such is the velocity of the arrow, and so quickly does this simple contrivance act, that tigers are, for the most part, shot near the shoulder. But even were it less rapid, we might naturally conjecture that the tiger, feeling his leg obstructed by the line, would pause, and afford ample time for the arrow to take effect, before he could completely pass its range. Generally tigers fall within two hundred yards from the fatal spot, being most frequently struck through the lungs, and sometimes through the heart. If the arrow be poisoned, as is very commonly the case, locality is no particular object; though, without doubt, such wounds as would of themselves prove effectual, unaided by the venom, give the shecarrie least trouble. The poison never fails to kill within an hour. It is not always necessary, but it is usual, for one or more persons to be at hand in the nearest trees, or in some secure situation, commanding a view of the spot, to watch the event, as well as to caution travellers who might inadvertently be proceeding towards the snare, and be liable to its mischief." (*Oriental Field Sports*, vol. ii. p. 15.)

86. *A well detailed account of a tiger hunt* appears in the *Journal* of the late excellent Bishop Heber. He proceeded on an elephant, armed with pistols and a double-barrelled gun, in company of the rajah of Kulleanpoor, and Mr. Boulderson, collector of the district, and attended by a large concourse of people on foot and horseback. The rajah, on a small elephant, hardly bigger than a Durham ox, and shaggy as a poodle, "sat in a low

howdah, with two or three guns ranged beside him, ready for action. Mr. Boulderson had also a formidable apparatus of muskets and fowling-pieces projecting over his mahout's head. We rode about two miles across a plain, covered with long jungle grass, which very much put me in mind of the country near the Cuban. Quails and wild-fowl arose in great numbers, and beautiful antelopes were seen scudding away in all directions." The bishop then describes the beating of the jungle, the rushing out of two curious animals of the elk kind, called the *mohr*, and the growing anxiety of all the people engaged in the hunt. He then proceeds thus: — "At last the elephants all drew up their trunks into the air, began to roar, and stamp violently with their forefeet. The rajah's little elephant turned short round, and in spite of all the mahout (her driver) could say or do, took up her post, to the rajah's great annoyance, close in the rear of Mr. Boulderson. The other three (for one of my baggage elephants had come out too, the mahout, though unarmed, not caring to miss the show) went on slowly, but boldly, with their tusks raised, their ears expanded, and their sagacious little eyes bent intently forward. 'We are close upon him,' said Mr. Boulderson, 'fire where you see the long grass shake, if he rises before you.' Just at that moment my elephant stamped again violently. 'There, there,' cried the mahout, 'I saw his head.' A short roar, or rather loud growl, followed, and I saw immediately before my elephant's head the motion of some large animal stealing through the grass. I fired as directed, and a moment after seeing the motion still more plainly, fired the second barrel. Another short growl followed; the motion was immediately quickened, and was soon lost in the more distant jungle. Mr. Boulderson said, 'I should not wonder if you hit him that last time; at any rate we shall drive him out of the cover, and then I will take care of him.' In fact, at that moment, the crowd of horse and foot spectators at the jungle side began to run off in all directions. We went on to the place, but found it was a false alarm; and, in fact, we had seen all we were to see of him, and went twice more through the jungle in vain. I asked Mr. Boulderson on our return, whether tiger-hunting was generally of this kind, which I could not help comparing to that chase of bubbles which enables us in England to pursue an otter. In a jungle, he answered, it must always be pretty much the same, inasmuch as, except under very peculiar circumstances, or when a tiger felt himself severely wounded, and was roused to revenge by despair, his aim was to remain concealed, and to make off as quietly as possible. It was after he had broken cover, or when he found himself in a situation so as to be fairly at bay, that the serious part of the sport began, in which case he attacked his enemies boldly, and always died fighting. He added that the lion, though not so large or swift an animal as the tiger, was generally stronger and more courageous. Those which have been killed in India, instead of running away when pursued through a jungle, seldom seem to think its cover necessary at all. When they see their enemies approaching, they spring out to meet them, open-mouthed in the plain, like the boldest of all animals, a mastiff dog. They are thus generally shot with very little trouble; but if they are missed, or only slightly wounded, they are truly formidable enemies. Though not swift, they leap with vast strength and violence; and their large heads, immense paws, and the great weight of their body forwards, often enable them to spring on the head of the largest elephant, and fairly pull him down to the ground, riders and all. When a tiger springs on an elephant, the latter is generally able to shake him off under his feet, and then woe be to him. The elephant either kneels on him and crushes him at once, or gives him a kick which breaks half his ribs, and sends him flying perhaps twenty paces. The elephants, however, are often dreadfully torn; and a large old tiger sometimes clings too fast to be thus dealt with. In this case it often happens that the elephant himself falls from pain, or from the hope of rolling on his enemy; and the people on his back are in very considerable danger, both from friends and foes, for Mr. Boulderson said, the scratch of a tiger was sometimes venomous, as that of a cat is said to be. But this did not often happen; and, in general, persons wounded by his teeth or claws, if not killed outright, recover easily enough."

87. *Spearing is also a common method of attacking all the larger Indian animals*, as will appear in the following account of a *tiger hunt*, which being given in the true nautical phraseology, can hardly fail to interest our readers. These sons of the ocean, when they treat us with a *con amore* description, either written or oral, of any active enterprise, particularly if it be of one common only to us "long-shore lubbers," seldom fail to entertain us much, by bedecking it in a nautical garb. That which follows is said to have been addressed from Java to a distinguished member of the Royal Academy by his brother. "At seven A. M., on the 2d. of October, I set out with my two sons, a Berzoekra man in my service, and about fifty natives, armed with pikes and hog spears: I was armed with a gun and spear. The tiger, for which we were on the look-out, was in a valley about two miles and a half distant from our port. The moment we arrived near him we commenced operations. About nine A. M. we effectually drove him out of his den of underwood, and, while he was doubling the brow of a hill, I had a rap at him, which took effect about six inches astern of his *tafferel*. Had I taken his *tafferel*, it would have disabled his *tiller-ropes*, and he would have been forced to *heave to*, and we should have had some sport with him whilst in

that situation. He now made over to the west of the valley, and into a thorny bush; but seeing that he was in danger, he made a start from that bush to another, where at length I got a clear sight of him; but before we could finish our task he made a spring, with an intention to clear the heads of three men who were to my right, at about a fathom distance; but they received and put three pikes and a hog-spear into him; the former entered his belly, the latter entered his *starboard* shoulder; this he took with him, but the pike-staves all broke. This shock to his delicate frame brought him down on one of the men, on whom he left the marks of three of his paws, but he got into a bush before I could turn round to have a rap at him. This was his last move, the time just twelve at noon. We gathered up our broken pike-staves, bound up the wounds of our man, and sent him off to the mill to await our arrival, but determined not to give up our prize, we remained quiet for about an hour to rest ourselves. During this time he was attempting to draw the hog-spear out of his *larboard* shoulder, which gave him much pain, and made him growl. We now saw the bush shake very much, so again we began operations by cutting down the small bushes to get a sight of him: this was soon accomplished, and enabled me to put a shot into his head: our work was now done, so we went up to him; but I think he was *closing his book* more from the pikes than from the shot. I had him carried home. His weight was three hundred and thirty-three pounds; stood three feet three inches high; length of body six feet, tail two feet four inches. I then dressed the wounded hunter, who was fourteen days under my hands, having received ten wounds on his body, left arm, and head. This, you will say, is no child's play."

88. *The bow and arrow* are also dexterously employed by the native Indian marksman against the tiger; in which case the apparatus used is proportionate in strength to the animal it is to act against. The wood which forms the bow is either of the *singeah dameen*, or it is of split bamboo, and its length ranges from six to eight feet. A more expensive bow, used by the wealthy natives, is made of two pieces of buffalo horn, having at each end a wooden tip to receive the string. These are further strengthened with several coats of varnish, or they are otherwise enveloped in some tenacious animal matter, as portions of intestines, bladders, &c. and then elegantly painted, the bow-string being of catgut. The common arrows are mostly of reed; those, however, which are used against tigers are of some tough wood, as the horny ash, &c. Captain Williamson, observing on the precision with which these natives take aim, and the force and extent of the flight of their arrows, says, "They will rarely miss an object about the size of a tea-cup, at sixty or seventy yards. I have seen a shecarrie, who was in the employ of the ever-memorable Colonel John Mordaunt, at Lucknow, repeatedly lodge an arrow in a common walking-stick at about that distance. But the most surprising feat of this kind I ever witnessed, was that of the poor itinerant so well known in Bengal, who was born without arms, having only a thumb at one shoulder; but who, fixing the bow with his feet, and drawing the string with his teeth, lying on his back of course, can direct his arrow with more certainty than most Europeans." It may be added that the tiger, when basking and sleeping in the sun, which is a very common custom with this animal, is often approached by the shecarrie, and receives a fatal wound.

89. *A fight between the tiger and buffalo* is a sport among the Indian men of rank and wealth, and the scene of combat is an area, encircled with a paling of bamboo, of thirty or forty yards diameter. Around the outer portion of the area, a gallery is constructed of sufficient dimensions to insure the numerous spectators a full view of the exhibition, without danger from the combatants. The tiger being brought into the area, steals along, endeavouring to conceal himself from view; he usually exhibits no appearance of relish towards any other than a defensive fight. The buffalo, on the contrary, in the words of Captain Williamson, "on entering the area smells the tiger, and becomes instantly agitated with eagerness. His eyes sparkle with fury, as they quest around for the skulking enemy, which is generally attacked the instant it is distinguished. The buffalo, shaking his head, and raking the ground for a few seconds with his foot, places himself in the posture of attack, and with his face brought parallel to the surface, his horns pointing forward, and his tail indicating both his determination and his vigour, rushes forward at his full speed. From the manner in which the horns are placed, as well as from the position in which the buffalo in common carries his head, that is, with the nose raised, so as to have the face nearly horizontal, whence the tips of the horns lie far below the level of the back-bone (as in *fig.* 19.), one would be apt to conjecture that they were not calculated to do much mischief, and might be easily avoided; but such is by no means the case. The buffalo, perhaps at the distance of thirty or forty yards from the object, inverts his whole position, bringing his nostrils between his fore-legs, and carrying the horns pointed forward, probably not more than an inch or two from the ground. In this manner he proceeds at full speed, his eye sternly bent according to his aim, which is for the most part so correct as to leave little doubt of the issue, were the opportunity

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BUFFALO AND TIGER.

given for the charge to take effect: a quick removal, however, to the right or the left, when the buffalo is within two or three yards, is sufficient to insure safety. The motions of buffaloes are so rapid, and their fury so very urgent, that a second charge must invariably be expected, followed up by others, which seem to become the more keen in proportion as the animal becomes more irritated, either by his disappointments, or by any wounds he may have received from his antagonist. The natives assert that a buffalo, not absolutely defeated, will never quit a tiger until its death may proclaim his victory; and that, even when the subdued opponent may be breathless, the buffalo will amuse himself, as it were glutting his revenge, by tossing the tiger about." (*Oriental Field Sports*, vol. ii. p. 45.)

90. *Lion hunting is occasionally practised in India*, but it is not so popular or so common a sport as tiger hunting; for neither is the animal so frequently met with, nor so greatly dreaded as the tiger, although he is equally powerful, and, according to Mr. Boulderson, a noted sportsman already alluded to, even more courageous than the tiger. This gentleman repeatedly mentions the superiority of courage in the lion, which seems to disdain all flight, and, on the contrary, rather courts than shuns the attack. This very courage, however, occasions him to be much more easily and certainly destroyed than the tiger, who in most cases steals away if he can, being seldom willing to "show fight," unless pressed into close quarters. This account, however, is somewhat at variance with what we have heard asserted by gentlemen long resident in India, who appear to consider the tiger as by far the most formidable foe. Perhaps much of this opinion may be formed on the greater frequency of meeting with the tiger than the lion in this country. (See *Lion Hunting in Africa*, infrà.)

Subsect. 3. *Hunting the Wild Hog.*

91. *Hunting the wild hog forms one of the most popular amusements of India;* and as the retreats of these animals are well known, a "blank day" is never anticipated when it is proposed to hunt. The wild hogs inhabit the jungles, in which they fix themselves, and subsist on roots, insects, and reptiles. The custom of firing the jungle grass every year forces the wild hog to a new location, which is usually in the sugar plantations, or in the rice, or, as there called, the "paddy fields." *Rhur* plantations also are favourite resorts of theirs; this species of *lupin* affording them excellent shelter, and the rhur itself being no less relished by them than the sugar-cane, and both yield an excellent cover, from which, when the plantations are large, as is often the case (those of the rice being frequently more than sixty acres), it is difficult to dislodge them. We repeat that, in such cases, it requires formidable bodies of persons to drive these porcine gentry forth.

92. "*Hunting the wild hog from the canes* requires," says Captain Williamson, "that the beaters should not be more than five or six feet distant from each other, else the hogs will frequently turn back, and rush through the intervals; sometimes they will squat, and suffer the beaters to pass them. They should preserve an even line as much as possible, so that the canes may be equally searched, and the game be induced to proceed before them. In order to effect this, the whole of the persons employed should be previously arranged along the outside of the cane, each man furnished with a *lattie*, or bamboo staff. The persons who carry drums, trumpets, &c. should be equally divided in the line. The hunters should be stationed at the several corners of the cane, so that two may see any hog that may start, and follow instantly. All being arranged, the signal is given to move on through the cane, with all the clamour that can be raised. It sometimes happens that the game will bolt instantly; at least will proceed to the verge, peeping out to see if the coast be clear, when, if any object appear to them suspicious, they will return, and often occasion infinite trouble to expel them. Sometimes, indeed, nothing can force them to run. A sow with pigs is very difficult to dislodge; she will frequently come to the edge, and running along the skirt, re-enter the cane with her litter, and dash through the line of beaters repeatedly. The most arduous and unpleasant species of chase occurs where much heavy cover, either of canes, or of rhur, happens to be somewhat contiguous. On such occasions, one or two of the party should hide themselves behind any patch of cover that may stand between the cane where the people are beating and that next to it, in the direction to which they are proceeding; so that, when the hog may have taken fairly out, he may be surprised with a sudden attack, which, if it be not successful in spearing, at all events will force him forward through the next cover, and tend to blow him the sooner. Those horsemen, who are posted at the nearest corners, should gallop round to watch for the hog passing on; and, giving the halloo, should dash at him full speed, spearing as they come up. Some hogs, however, are aware of the scheme, having been hunted before: many may be seen with large scars, evidently the result of wounds received on former occasions; and such are extremely difficult to deal with. They will break the line repeatedly, ripping up all they meet, and eventually creating such terror, as effectually to discourage the beaters, who thence get into groups; and though they continue their vociferations, act so timorously, as to render it expedient to withdraw them for the purpose of trying a fresh cover. It is very common to see ploughs at work at the very edge of the canes where the villagers are beating for hogs; and, as the bullocks employed are extremely

skittish and wild, it rarely happens but on the hog's *debût* they take fright and run off with the plough, which is often broken to pieces. The ploughman, alarmed with his cattle, also takes to flight, as do all the peasants who may see the bristling animal galloping from his haunt. Those employed in drawing water from wells, by means of large loaded levers, are in general less concerned, though not quite out of danger, as the hog might chance to bolt upon them unawares; the wells made for the purpose of irrigation being generally close to the canes." (*Oriental Field Sports*, vol. i. p. 23.)

93. "*Porcupines are often found in beating canes for hogs*, and are easily speared. The flesh of the young ones is very good, and somewhat similar to pork or veal. With respect to shooting their quills, it is altogether fabulous: dogs are apt to run upon them, and the quills, being sharp, penetrate so deeply, and hold so fast, as to occasion them to quit their matrices or insertions in the porcupine's skin. The wounds are not dangerous, except from their depth. Many horses will not approach porcupines when running, by reason of a peculiar rattling their quills make against each other. The horseman should stab his spear into them without hesitation; there being no danger in approaching them." (*Ibid.* p. 29.)

94. *The method of hunting the wild hog in the grass jungles* does not differ in any material respect from that in the sugar, rice, or *rhur* covers; and, as the final attack is the same in all, we shall proceed to draw from Captain Williamson's account what is essential to the illustration of our general subject, strongly advising the curious reader, who may not have met with his splendid work, by all means to refer to it for an ample and interesting detail of all the methods of field sporting in India. "In grass covers," says the gallant Captain, "a hog is often started, hunted, and killed, without being seen till he is dead. This occurs in grass from three to five feet in height, which, being generally as thick as a heavy sward of hay, effectually screens the game from the view of the hunter; who must keep his eye on the top of the grass, watching its motion, and be ready to turn as the hog may deviate to the right or left. A tall horse certainly is an advantage on such occasions; but a good eye and quick hand give the hunter great superiority." The account now digresses to inform us of the several dangers and difficulties which attend the chase; such as tumbling into a *buffalo hole*, or over *goanchies*, which are lumps of two feet high, formed from the tangling of the roots of this Patagonian herbage. A still more formidable danger often is at hand; for the rider may in an instant be precipitated into a *nullah*, or ravine, of several feet in depth. "To search" (continues Captain Williamson) "for either a hog, or a hog deer, the persons employed should be extended in a line, distant from each other according to the height of the grass; but, in general, four or five yards. In this line, elephants, camels, led-horses, and the hunters mix. The latter dividing themselves equally, and at all events occupying the flanks; the whole proceed through the grass with silence, so that the game may not be roused too early, and steal off unperceived. As soon as a hog is roused, the two nearest to him should follow. If the ground be good, and the cover of a moderate height, they will in general suffice: if the number exceed three, they do more harm than good. Besides, it often happens that two or more hogs, or deer, lurk in the same grass; consequently, unless the circumstances be urgent, the fewer good hands follow, the better chance will exist of killing additional game." (*Ibid.* p. 34.)

95. Mr. Johnson's description of a scene of this kind is too animated and interesting to be omitted. "It is difficult," he says, "to imagine or express the anxiety a keen sportsman feels when sitting on his horse near a sugar-cane, hearing the beaters calling out '*Burrah suer*' (a large boar), and perhaps, at the same instant, hearing his grunt, and the crashing of the cane as he dashes on before them through it, expecting every moment to see him come out. I have often been thus situated, and have trembled all over as if I were in a fit of ague, which did not arise from fear but from extreme anxiety, which went off the moment the hog made his appearance. When a hog has proceeded to what is considered a sufficient distance from a cane, the nearest hunter should follow him at a good rate, and when he is off about a quarter of a mile, he should put his horse out at full speed, pressing him as much as possible, observing minutely his motions. If he slacken his pace suddenly, he is probably waiting for an opportunity of making a desperate charge at the horse, and if he be in wind, it would be hazardous to withstand his charge; but if the hunter is determined to push on and spear him, which is often necessary near a heavy cover, by understanding and observing his manœuvres, he will be prepared for the charge. If the country is open and clear, I think it is more prudent to draw in the horse, slackening his pace agreeably to the hog's, keeping nearly at the same distance from him, as he was before he showed signs of hostility. When he finds that the horse does not come on as he expected, and sees others following, he will be induced to increase his pace again, will soon be out of wind, and allow the hunter to ride up near him without preparing to charge. Now, however, the hunter should dash on at full speed, and as soon as he arrives within a proper distance, he should *deliver* his spear, as shown in *fig.* 20., and having so done, turn his horse instantly off to the left If other gentlemen are following, the nearest to the first should keep immediately behind him, to take his place when he has delivered his spear; the other two should ride distant from each other, and wide of the hog, keeping him in a line between them; he will then see them, which will tend to prevent his turning about

towards the cane he started from; and if he should, they will be ready to meet him. If he is in bad ground, near to cover, and not in a good situation for spearing, crossing him in front will often bring him to bay, or draw him from his course into better ground, where he can be more easily speared." (*Indian Field Sports*, p. 258.) Both Captain Williamson and Mr. Johnson offer instructive hints on the art of spearing; and we take this opportunity of remarking, that to do this in a sportsman-like manner, is the very feather in the cap of the hog hunter, and is more prized by him than the credit of the kill; indeed, so inferior is that in the estimation of such as are enthusiasts in this sport, if we be rightly informed, that the credit of the *death* remains with him who first tinges his spear with the blood of the hog. Another spirited writer on this subject, in the *Sporting Magazine* for July, 1827, says, "It will, perhaps, surprise those who have not enjoyed this sport to be informed, what is strictly the case, that the speediest horses cannot run into a hog that runs well (even on good ground), in less than from half a mile to a mile. But should the ground be bad, which is very often the case, three or four miles of a run may be expected. The best ground in this part of India tries the nerves of persons just arrived in the country; and what is reckoned good ground, on which no hog should escape, is ten thousand times more dangerous than any ground rode over with hounds, in the north of England or in Ireland. Another source of danger, and greatly against hard riding, is the number of cracks made in the ground by the intense heat of the sun, which are covered very often with grass as high as a man; and should your horse put his foot in one of them, the consequences will not be difficult to imagine. This long grass also adds greatly to the difficulty of killing; for when going at speed, the hog, being hard pressed, will double short (out of distance from the spear), and making a circle in the grass, will get some extent before discovered; and so completely is he hid by it, that the motion of the grass is the only means of tracing him. The plan to be pursued in such case, is to press him at the top of his speed from five hundred to six hundred yards; and if this be not possible from the nature of the ground, then push him whenever a good place will permit, by which means he will become winded, and then come to bay and show fight. If not pressed, he will completely tire out and beat the best horses."

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SPEARING WILD HOG

Subsect. 4. *Hunting the Buffalo, the Bear, the Antelope, and the Civet.*

96. *The Bos or ox family of India*, as sporting animals, will not detain us long. We shall commence what we have to say on the subject by observing, that no other group of quadrupeds displays such extremes of gigantic stature and pigmy proportions as this. The buffalo, or humped variety, presents specimens as large as our ox, and others not bigger than a Leicestershire ram. The larger buffaloes, when tamed, supply the place of our oxen as beasts of draft and burthen; and further, they are mounted also, and perform journeys of considerable length with a fair portion of expedition. In a wild state they are objects of the hunter's pursuit, and are said to afford excellent sport.

97. "*Buffaloes*," Captain Williamson says, "are chiefly hunted on elephants, much in the same manner as tigers, with the exception that the scene of action usually lies in very heavy grasses, or in a *jeel;* to either of which the buffalo instantly resorts when attacked by numbers, such as he feels diffident of opposing with success. When buffaloes charge, they often gore elephants severely, but have not the effect of frightening them so much as tigers. The bulk of the buffalo renders it sufficiently easy to hit, almost to a certainty; but unless the ball be large, and be directed to a vital part, it ordinarily does more harm than good, irritating the stupendous and powerful animal to the most formidable exertions." (*Oriental Field Sports*, vol. ii. p. 60.)

98. *The chickara, or four-horned antelope* (*fig.* 21.), we have been told by some officers of the Indian army, affords great sport to some of them, and to many more of the native hunters who live on the confines of the forests and hilly tracts in the western provinces of Bengal. It is delicately shaped, and measures about twenty inches high at the withers. Its hinder horns are about three inches, and its front about one inch and a half long. Agile in the extreme, like the chamois, it can only be taken by surprise, when it falls before the rifle. Now and then it is chased with hounds; but as the nature of the ground will seldom admit of a riding chase, the sport is fatiguing in the extreme. It is, nevertheless, a favourite pursuit with some of the British residents in India; and, as before observed, very many of the natives of hilly localities pursue it with an ardour equal to that of the chamois hunter.

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CHICKARA.

99. *Bears are common in some parts of India*, particularly the Malay bear, which the natives take in traps, or by nets, or they are killed from *michauns* or pits. These bears appear essentially herbivorous and insectivorous, by their eating fruits, bulbs, and insects of all kinds. Ants, they are said to be particularly fond of, which the native sportsmen turn to their own advantage. A strong noose is placed by them about each hillock, over which a man in ambush lies in wait, and when the bear stoops his head and buries his nostrils in the soft earth disturbed by the ants, for the purpose of licking, or as it is supposed snuffing them up, the watcher draws the noose round his neck. Bears are also speared by horsemen, their manner being rather to stand at bay, than to attempt to fly. They do much injury to the sugar-cane crops, and occasionally fall foul of the owners; habitually they are good climbers, but they usually seek natural cavities. It is only when they have been guilty of some monstrous cruelty, or have done much injury to the crops, that a village makes common cause against them. They are, however, more often disturbed through the cupidity of the villagers, who, being tempted by the sportsman's gold, will unite in a body to hunt them; when we are told that drums, trumpets, fireworks, and every kind of arms, are brought forward to scare them from their hidings among the canes, or their fastnesses among the precipices. When a bear is pursued, he is more frequently shot than speared; for it must be a very game horse that will come near bruin. If the hunter be mounted on an elephant, he may be speared with safety; but he is more certainly and more easily reached with fire arms. His skin is valuable; and his fat also is very highly prized, under a supposition, although a very erroneous one, that it will prevent baldness, and increase the growth of our hair. Pig's grease, or any other animal oil, we feel fully assured will answer the purpose equally well.

100. *The intrusion of the bear* is sometimes more unexpected than welcome, as will appear by the following amusing anecdote related by Captain Williamson:—"A gentleman, who was proceeding post to Midnapoor, found his palankeen suddenly put down, or rather dropped, without much ceremony, or regard to its contents, by the bearers, who as abruptly took to their heels in various directions. On putting his head out to ascertain the cause of so unpleasant a circumstance, the gentleman discovered a half-grown bear smelling about the machine. Bruin no sooner saw the traveller than he boldly entered at one side, and as the palankeen was of the old fashion, with a highly arched bamboo top, he could not be opposed: the gentleman thought it necessary to relinquish his situation in favour of his shaggy visitor, who, with as little ceremony as he had entered passed through, following the gentleman with some very suspicious hints, such as the barking and champing of his teeth. After some manœuvres on both sides, a close action commenced, in which either party at times might claim the victory. The bearers had collected themselves on a high spot, whence they could have an excellent 'bird's-eye view' of the battle; but whether from prudence, or impelled by curiosity to ascertain what would be the result of an engagement between an English gentleman and a Bengal bear, all kept aloof from the combatants. As the chances varied, so did the bearers express their approbation; cheering each as he seemed by his superiority to merit their plaudits. When the gentleman chanced to have the upper hand, they cheered him with '*sawbash sahib*,' i. e. 'well done, master;' and when the bear became lord of the ascendant, they paid the just tribute to his exertions with '*sawbash bauloo*,'' i. e. 'well done, Mr. Bear.' Now and then an interjectory *wau! wau!* expressive of the highest admiration, was uttered with no small emphasis, indiscriminately as it might in justice be merited by either party. Fortunately the gentleman succeeded; and after receiving many desperate wounds, throttled the bear. When the contest was over, the bearers returned, and after overwhelming their master with compliments, bore him on his journey. On their arrival at the next stage the bearers were all taken into custody; and the magistrate, according to the laudable custom prevalent in India, where offences are punished without very nicely examining the exact spot and hour of perpetration, bestowed on each of the critics a hearty chastisement in the market-place, while the applauding crowd of spectators did not fail, at each turn of the instrument, to repeat '*sawbash sahib;*' and when pain induced the culprits to writhe, in hopes to evade the whip, others would ironically exclaim '*sawbash bauloo.*'— To the best of my information, the gentleman is yet living, and occasionally amuses those who, being strangers, are curious to know the cause of his countenance being so disfigured, with the recital of his close intimacy with brother bruin." (*Oriental Field Sports*, vol. ii. p. 102.) Two other species of bear peculiar to India are also found in the interior, known to naturalists as the *Ursus labiatus* and *U. Thibetanus*. It is said, however, that they are only to be met with in the mountainous districts.

101. *Hunting the kuttauss.*—In India the *civet* (*Viverra Civetta*, *fig.* 22.), known there as the kuttauss, and as being one of the musk-yielding animals, is much hunted. In length it is about two feet and a half, and one foot and a quarter high; its body being banded with black on a grey ground, and partly spotted like the tiger. Its tail is ringed with black, and its extremity tufted with the same. Captain Williamson says,—"Hounds

are wondrously excited by the scent of a kuttauss; it seems to derange them. They defy all control; and often, disregarding the voice of the hunter, as well as the sickness occasioned by the nauseous stench of the animal, remain in the cover barking and baying until a sharp bite sends them off howling, after which they show great aversion to encounter a fresh attack. If a jackal, or other hunted animal, cross near the haunt of a kuttauss, he rarely fails to make his escape; for the dogs all quit the chase, and surround the stinking animal. Whether they be successful in killing or not, it matters little, for their scenting power is completely overcome for that day, and the hunter may assure himself that, unless a jackal take to a plain, and be run in open view, no chance exists of killing him. Indeed, after having worried a kuttauss, dogs treat all other game with perfect indifference; hence it is an object with those who hunt with hounds (which however are very scarce, there not being more than four or five packs in all Bengal), to avoid the banks of tanks, and rather to forego the abundance of game to be found there, than to risk the failure of their morning's diversion. Polecats, which affect hounds in the same manner, though not by any means so forcibly, are usually met with in the same situations. They are large and savage, and are started in sugar-canes, maize, &c., where they kill great quantities of vermin; not confining themselves to rats, mice, and birds, but attacking also large snakes, and generally with success, seizing them by the back of the neck, and shaking them violently." (*Oriental Field Sports*, vol. ii. p. 111.)

22

CIVET CAT.

Subsect. 5. *Hunting the Wolf and Hyæna in India.*

102. *The Indian wolf bears the same wolfish character* which belongs to his European congeners. He is a sly lurking assassin, ready to murder children at all times, and sometimes, if he can get a little help, he will attack a man; a woman is by no means safe in the sight of a single hungry wolf. Wolves are plentiful in most parts of India, but we believe they abound most where tigers, panthers, and leopards are scarce. Mr. Johnson says, "The natives dig deep pits to take them in. Over such a pit a lamb or kid is suspended in a basket, with a pot of water hanging above, having a small hole in it, through which a drop at a time falls on the kid and makes it cry. The sound attracts the wolves to the spot, and when they make their spring at the bait, they fall into the pit beneath, which is kept from their view by being covered with loose green leaves." (*Indian Field Sports*, p. 43.)

103. *The bagged wolf* is occasionally hunted by the English residents in India, as the following account, which appeared in the *United Kingdom* newspaper, for August the 11th, 1833, will testify: — " A letter from Benares, of February 5th, 1833, gives an account of two splendid runs in its neighbourhood, with a pack belonging to the 73d regiment, N. I., after a bagged wolf. ' Twelve minutes' law having been allowed, the dogs were laid on, and went away at a killing pace, for upwards of thirty minutes, when a check, caused by a drove of cattle crossing a dusty road in front, afforded a moment's breathing space for men and horses — a judicious cast forwards soon set matters right. The wolf was viewed while crossing a plain of considerable extent, and at last fell from mere exhaustion, when within three hundred yards of the tremendous ravines, for which he had from the first been making; and when the leading dog was within three yards of his brush, the pack were whipped off with the lashes of the hunting-whips. The more readily to effect this, a stout gentleman present volunteered to confine the brute's head, by placing a foot on his neck, which uncivil attack was resented by a gentle squeeze, having the double effect of spoiling a pair of Begbie and Navin's best boots and the symmetry of a well-turned great toe. The capture being at length effected, and a vehicle procured from a neighbouring village, the wolf was sent back to his kennel. All agreed in computing the distance to be at least sixteen miles. A fortnight after, the same wolf was again turned down, and ended a bursting run of fifty minutes by jumping into a well, about forty feet in depth; a deposit of soft mud at the bottom fortunately saved his bones; and a light weight, gallantly volunteered for the service, was let down by a rope, and passed a noose over the head of the wolf, by which he was drawn up and secured. He had received no injury from the fall, and still lives to afford further sport.' "

104. *The hyæna* (*Hyæna vulgaris*) of India, singly, is not formidable to man, but congregated is to be dreaded; and his extermination is to be sought for, in consequence of his predacity among the smaller beasts and the young of the larger. Hyænas occupy dens and fastnesses, after the manner of wolves, whence they are drawn out by cords artfully passed round their legs by some of the Indians. Lieutenant Conolly describes a somewhat similar method of taking hyænas, which is practised in the north of India. " I mentioned," he says, " that it was proposed to tie the hyæna in his den. It appeared a dangerous proceeding; but, according to the accounts of these people, it is not so for a man

who has strength and coolness, for the hyæna, though a savage beast, is easily frightened; and Syud Daoud was said to have tied three in the course of a day. However, it is of course a very dangerous undertaking for one who cannot sustain great presence of mind, as they testified by mentioning the case of a man who, a year or two before, had died of a bite that he got in a clumsy attempt. Syud Daoud himself described to me the mode of tying a hyæna in his lair, which is as follows: — 'When,' said he, 'you have tracked the beast to his den, you take a rope with two slip-knots upon it in your right hand, and with your left holding a felt cloak before you, you go boldly but quietly in. The animal does not know what is the nature of the danger, and therefore retires to the back of his den; but you may always know where his head is by the glare of his eyes. You keep moving on gradually towards him on your knees, and when you are within distance, throw the cloak over his head, close with him, and take care that he does not free himself. The beast is so frightened that he cowers back, and though he may bite the felt, he cannot turn his neck round to hurt you; so you quietly feel for his two forelegs, slip the knots over them, and then with one strong pull draw them tight up to the back of his neck, and tie them there. The beast is now your own, and you do what you like with him. We generally take those we catch home to the *khail*, and hunt them on the plain with bridles in their mouths, that our dogs may be taught not to fear the brutes when they meet them wild.'" (*Literary Gazette*, for March, 1831.)

Subsect. 6. *Deer Hunting in India.*

105. *The cervus or deer family* are favourite objects of the chase in India. A species of deer, the largest of the tribe, is called the *saumer*, *samber*, rusa deer, or elk. It is met with in the Neilgherry hills and other mountainous parts, and is as large as a good sized ox, usually standing about five feet, or, according to other accounts, sometimes reaching to sixteen hands in height. The neck and shoulders of the male are covered with a long, black, and shaggy mane. This animal stands resolutely at bay, and will, it is said, frequently attack the bison, with whom he has been seen to hold a most desperate encounter. The spotted deer of India (*Cervus axis*) very much resembles the fallow deer in figure, but has distinctly-marked white spots, and horns rounded, and without the terminal palm. The axis is generally found in herds of from fifteen to twenty, three or four of which are bucks. It is both difficult to find, and so shy that, if not shot when first discovered, it is next to impossible to get a second shot. The *nylghau*, the common red deer, and the antelope, are likewise hunted by the natives and European residents, both with Indian and with English dogs, much after the British method. The shecarries likewise shoot them from platforms, or they conceal themselves in pits, with their heads enveloped in foliage, where they remain undiscovered in the feeding-places of the wild herds, and thus make sure prey of the largest and finest amongst them. These people also are adepts in snaring them in various ways, and they capture them by means of the chetah or hunting leopard (already figured and described, p. 17.). Mr. Johnson observes on this method — " It is distressing to see them (the chetahs) catch the deer; they are led out in chains, with blinds over their eyes, and sometimes they are carried out in carts; and when antelopes, or other deer, are seen on a plain, should any one of them be separated from the rest, the chetah's head is brought to face it, the blinds removed, and the chain taken off. He immediately crouches and creeps along, with his belly almost touching the ground, until he gets within a short distance of the deer, who, although seeing him approach, appears fascinated, and seldom attempts to run away. The chetah then makes a few surprising springs, and seizes him by the neck. If many deer are near each other, they often escape by flight, their numbers, I imagine, giving them confidence, and preventing their feeling the full force of that fascination which, to a single deer, produces a sort of panic, and appears to divest him of the power, or even inclination, to run away or make any resistance. It is clear that they must always catch them by stealth, or in the manner I have described, for they are not so swift even as common deer. Antelopes are the swiftest of all deer. The keeper carries with him some carrion, commonly bullock's liver, which he gives the chetah when he has caught a deer, to induce him to surrender it, with which he is allowed to satisfy his hunger, when he is again blinded and chained. I believe they seldom, if ever, kill more than one deer with each chetah on the same day. Two are often loosened after the same deer, but more frequently after two or a herd. Among the Persians, falcons are trained up to hunt the antelope." The natives of India, taking advantage of the disposition of the antelope to graze in company with cattle, train bullocks to stand fire, and by making use of them in their hunting tours, they are able to approach the antelopes sufficiently near to reach them with their bows or rifles. In the use of the latter weapon it is not uncommon for two to be pierced by the same ball, so densely do the antelopes congregate.

106. *Hunting of hog deer*, as they are here called, is conducted somewhat after the English method of buck hunting, with the addition of the use of the hunting-spear, after the manner it is employed against the wild boar. The *parrah*, or hog deer, of India, is of the size of

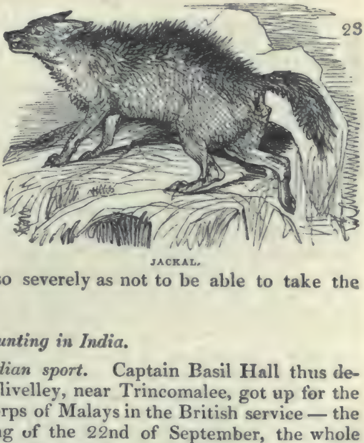
our fallow deer, but is much heavier in his figure. The buck will often run well, but the doe will not always do so. Captain Williamson tells us she is apt early in the chase to squat down, and suffer herself to be killed without resistance. The buck will also do the same, as regards squatting, but he does not remain so quiet; on the contrary, as soon as the horsemen have rushed past, he rises, and makes a most desperate charge against the hind quarters of the horse nearest to him. It is here that the spear is useful; and it is in fact to prevent this disposition to linger, that a species of mongrel greyhound is often used, which, according to Captain Williamson, are little less savage, and hardly less dangerous than the hog deer itself. It however happens, that if Europeans are principally concerned in the chase, a good account is commonly given of the game in the end.

Subsect. 7. *Fox and Jackal Hunting in India.*

107. *Fox hunting is practised in India*, but the Asiatic foxes are smaller than ours, and do not afford that gallant perseverance in flight so frequently shown by those of England. There are packs of fox hounds kept at several of the important settlements, which are replenished at a considerable expense from England. The *Madras Courier*, of 1826, states, "The pack of hounds in the southern Mahratta Dooab are, I believe, almost the only pack that have been kept together for any length of time in this country; they are but little known, owing to the distance of the 'Darwar country' from most of the stations of this Presidency." It proceeds to describe "a brilliant little affair," eminently calculated to remind the European sportsmen engaged in it of old sporting achievements in their native country. Johnson, in his *Indian Field Sports*, says, "Foxes are numerous in all parts of India. They are about half the size of the English fox, of a greyish colour, with large black brushes to their tails, which are usually tipped with white. They are beautiful animals, and live chiefly on rats and mice, and other small prey, and afford excellent amusement to sportsmen when coursed with greyhounds. Having the power of turning remarkably quick, they often baffle the dogs, and escape to their earths, of which there are generally three or four beds within a couple of miles; and it is for this reason they afford no sport when hunted with common hounds." Some of the most extraordinary creatures in this part of the world are the flying foxes, thus described by Colonel James Campbell, in his *Excursions, Adventures, and Field Sports in Ceylon:* "They are in size and colour nearly like foxes in England. They have wings (membranes) attached to their hind legs, which, when extended, are about four feet from the tip of one wing to that of the other; their hind feet are armed with long, strong, semicircular claws, with which they lay hold of the branches of trees, and thus suspended, with their heads hanging down, they sleep during the day. I am sure that I saw not less than fifty on one tree. I fired a barrel of my gun, loaded with heavy shot, amongst them, and brought down five, which were only wounded. Such irritable, furious-tempered creatures I never beheld; they contrived to lay hold of long and thick sticks, which we had procured to kill them; these they in several instances bit through, and it took many blows, well laid on, before they could be put *hors de combat.*" (Vol. i. p. 158.)

108. *Jackal hunting* (*fig.* 23.) *is also a favourite amusement with many of the English residents in India*, who consider that it approaches somewhat to the life and bustle of a fox chase. Johnson observes of it: — "Jackals are the game which English gentlemen generally hunt with hounds in India." Captain Williamson also relates some extraordinary accounts of the cunning and perseverance of these animals; and further states it has happened in hunting of one, that so many have come to the assistance of their persecuted brother, as to turn the *hunting* party into the *hunted*, which actually happened to a Mr. Punlock, whose hounds suffered so severely as not to be able to take the field for many weeks.

23



JACKAL.

Subsect. 8. *Alligator Hunting in India.*

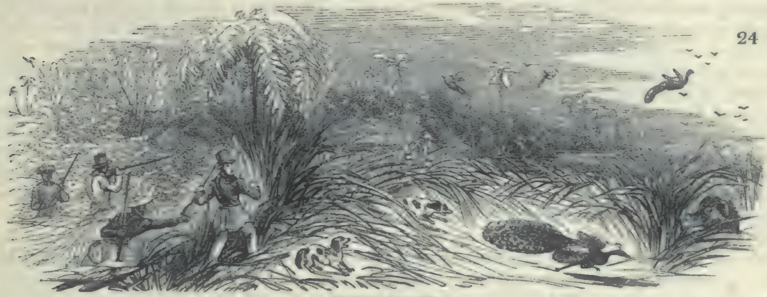
109. *Hunting of the alligator appears to be an Indian sport.* Captain Basil Hall thus describes one of these hunts, which took place at Nellivelley, near Trincomalee, got up for the admiral's express amusement, and performed by a corps of Malays in the British service — the 1st Ceylon regiment. "Very early in the morning of the 22nd of September, the whole regiment had stripped off their uniform, and every other stitch of clothing, save a pair of short trowsers and a kind of sandal. In place of a firelock, each man bore in his hand a slender pole, about six feet in length, to the extremity of which was attached the bayonet of his musket. His only other weapon was the formidable Malay crease, a sort of dagger,

or small edition of the waving two-edged sword, with which the archangel Michael is armed in Raphael's picture of the *Expulsion of our First Parents from Paradise.* Soon after the commander-in-chief came to the ground, the regiment was divided into two main parties and a body of reserves. The principal columns, facing one to the right the other to the left, proceeded to occupy different points in one of those sluggish canals I have already mentioned, connecting the lakes and pools scattered over the plain. These detachments, being stationed about a mile from one another, enclosed an interval where, from some peculiar circumstances known only to the Malays (who are passionately fond of this sport), the alligators were sure to be found in great numbers. The troops formed themselves across the canal in three parallel lines, ten or twelve feet apart; but the men in each line stood side by side, merely leaving room enough to wield their pikes. The canal may have been about four or five feet deep in the middle, the colour of the water being, when disturbed, a shade between ink and coffee; but no sooner had the triple line of Malays set themselves in motion, and the mud got stirred up, than the consistence and colour of the fluid became like that of peasoup. On every thing being reported ready, the soldiers planted their pikes before them in the mud, and, if I recollect right, each man crossing his neighbour's weapon; and at the word 'march,' away they all started in full cry, sending forth a shout, or war-whoop, sufficient to curdle the blood of those on land, whatever effect it may have had on the inhabitants of the deep. As the two divisions of the invading army, starting from opposite ends of the canal, gradually approached each other in pretty close column, screaming and yelling with all their souls, and striking their pikes deep into the slime before them, the startled animals naturally retired towards the unoccupied centre. Generally speaking, the alligators, or crocodiles (for I believe they are very nearly the same), had sense enough to turn their long tails upon their assailants, and to scuttle off as fast as they could towards the middle part of the canal. But every now and then one of the terrified monsters, either confused by the sound, or provoked by the prick of a pike, or mystified by the turbid nature of the stream, floundered backwards, and by retreating in the wrong direction, broke through the first, second, and even third, line of pikes. This, which would have been any thing but an amusement to unpractised hands, was the perfection of sport to the delighted Malays. A double circle of soldiers was speedily formed round the wretched aquatic, who had presumed to pass the barrier. By means of well-directed thrusts with numberless bayonets, and the pressure of some dozens of feet, the poor brute was often fairly driven beneath his native mud. When once there, his enemies half choked and half spitted him, till at last they put an end to his miserable days in regions quite out of sight, and in a manner as inglorious as can well be conceived. For the poor denizens of the pool, indeed, it was the choice between Scylla and Charybdis, with a vengeance; and I am half ashamed to acknowledge the savage kind of delight with which we stood on the banks, and saw the distracted creatures rushing from one attack right into the jaws of another. The Malays, in their ecstasy, declared that the small fry from one side rushed down the throats of the big ones, whom they met flying in the opposite direction. But this seems very questionable, though positively asserted by the enraptured natives, who redoubled their shouts as the plot thickened, and the two bodies of troops, marching from opposite quarters, drew within a hundred yards of each other. The intermediate space was now pretty well crowded with alligators, swimming about in the utmost terror; at times diving below, and anon showing their noses, well plastered with mud, high above the surface of the dirty stream, or occasionally making a furious bolt, in sheer despair, right at the phalanx of Malays. On these occasions half a dozen of the soldiers were often upset, and their pikes either broken or twisted out of their hands, to the infinite amusement of their companions, who speedily closed up the broken ranks, as if their comrades had been shot down in battle. The killed were none, but the wounded many; yet no man flinched in the least. The perfection of the sport appeared to consist in detaching a single alligator from the rest, surrounding and attacking him separately, and spearing him till he was almost dead. The Malays then, by main strength, forked him aloft, over their heads, on the end of a dozen pikes, and by a sudden jerk pitched the conquered monster far on the shore. As the alligators are amphibious, they kept to the water no longer than they found they had an advantage in that element; but as the period of the final *mêlée* approached, on the two columns of their enemy closing up, the monsters lost all discipline, floundered, and floutered up the weedy banks, scuttling away to the right and left, helter-skelter. *Sauve qui peut!* seemed to be the final watch-word for their total rout. That prudent cry would, no doubt, have saved many of them, as it has saved other vanquished forces, had not the Malays judiciously placed, beforehand, their reserve on each side of the river, to receive the distracted fugitives, who bathed in mud, and half dead with terror, but still in a prodigious fury, dashed off at right angles from the canal, in hopes of gaining the shelter of a swampy pool overgrown with reeds and bulrushes, but which, alas for most of the poor beasts, they were never doomed to reach. The concluding battle between these retreating and desperate alligators, and the Malays of the reserve, was formidable enough. Indeed, had not the one party been fresh, the other exhausted—one confident, the other broken in spirit

—it is quite possible that the crocodiles might have worsted the pirates, as the Malays are called in every other part of the world but the east, where they are generally admitted to be as good a set of people as any of their neighbours. It is needless to say, that, while all this was going on, our gallant admiral, Sir Samuel Hood, was a pretty busy spectator. His eager eye glanced along the canal, and at a moment took in the whole purpose of the campaign. As the war advanced, and sundry small affairs of outposts took place, we could see his face flushing with delight. But when the first alligator was cast headlong and gasping at his feet, pierced with at least twenty pike wounds, and bristled with half a dozen fragments of these weapons fractured in the onslaught, the whole plain rang with exclamations of boyish delight. When the detachments closed in upon their prey, every moment gave birth to some new prodigy of valour, or laid a whole line of the Malay soldiers prostrate on the muddy stream. Many on both sides were wounded; and all, without exception, covered with slime and weeds. Some of our party were actually pushed over, and fell plump in the mud, to the very provoking and particular amusement of the delighted admiral, whose superior adroitness enabled him to avoid such an undignified catastrophe, by jumping first on one side and then on the other, in a manner which excited both the mirth and the alarm of his company." Sometimes the alligators are taken by hooks, baited with pariah dogs, or flesh of other descriptions. In Ceylon, as Colonel Campbell remarks, in his *Excursions, &c.*, when once brought on shore, few of them showed much spirit, or ever attempted to bite their pursuers; and after having given a few thumps with their hard tails, they were quickly dispatched with spears and clubs by the people, who relish alligator chops and steaks as prime delicacies. Mr. Cumming, in his *Hunter's Life in South Africa*, vol. ii., describes his destruction of crocodiles by rifle-balls, against which neither the skull nor the thick armour of the animal would appear to be proof.

Subsect. 9. *Sporting with the Feathered Game of India.*

24



PEACOCK SHOOTING.

110. *Peacock shooting is an Indian diversion* (*fig.* 24.), attended with circumstances not common to the shooting of fowl in general. The size and splendour of the object shot at, and the danger with which the diversion is attended, from the religious veneration in which these birds are held by the natives, mark the sport with singular features. About the passes in the Jungleterry districts, Captain Williamson assures us he has seen whole woods covered with their beautiful plumage; and that, speaking within bounds, there could not be less than twelve or fifteen hundred within sight. Captain W. says, "The best mode of approaching them is by stealing under the trees at night; if there be a clear moon, so much the better. In this way, by looking up among the foliage, the peacocks may be readily distinguished. Where they are very numerous, and when only one bird is wanted, as certain a mode as any is, to lie in wait behind a bush near their feeding-haunts; but without the most perfect silence is observed, this will not succeed. They are strong birds, and require a smart gun to take proper effect, unless within twenty-five or thirty yards. The best is No. 4. patent shot; and with that size it is right to aim under the wing, if the position of the bird favour such an intention; otherwise, and more especially if the shot be smaller than the size above mentioned, it is best to aim at the head."

111. *The floriken, a species of bustard,* is also an object of the gunner's search; but he is extremely difficult of approach, principally frequenting open plains, where he can see the coming enemy. He is even more loth to rise on the wing than the peafowl, but his necessities less require it, for he is much more fleet in running. The best way of approaching and taking them is by riding round and round them on a well-trained pony, in concentric and decreasing circles; then, when near enough, suddenly dashing in amongst the flock, pulling up short when they rise or fly, and pouring in upon them a broadside of No. 2. shot, which is the smallest likely to be of service.

112. *Snipe shooting in India is also a bewitching, but most dangerous, sport.* In overflowed rice-grounds, snipes are met with in immense numbers, and are easily approached, and one is no sooner killed than another rises. This sport, in fact, is interminable; but as it must be pursued under a vertical sun, and with the body up to the middle in water, it cannot be wondered at that it proves the death of many, although few can withstand its fascinations. The snipes in India are of three species: one like the English bird in size and colour; the jack snipe, a small bird, and very rapid on the wing; and the painted snipe, a sluggish and heavy bird, which takes but a short flight, and is inferior to the others in point of flavour, but greatly surpasses them in beauty of plumage.

113. *Partridges and quails* of several species furnish amusement for the Indian sportsman. The shecarries pursue them for profit, decoying them with birdcalls, being themselves concealed behind a moveable screen. Over the birds which have been attracted by the mimic powers of call, they pass lines smeared with bird-lime, or they draw them to them by means of hair nooses. It remains to add, that wildfowl of all kinds are common in India, and the flocks of resident and migratory pigeons are very large, and add to the variety and plenty of sport met with there.

114. *Hawking has long been considered a noble sport in India,* and indeed in most parts of civilised Asia. As regards India simply, Captain Williamson observes, "The natives keep the middle-sized grey hawk, known by the name of the *bauz*, for the purpose of hovering over ducks, &c., which will not rise on such occasions; thus any quantity of wildfowl may be killed on small waters, where they cannot swim to such a distance as to be out of reach. If the bauz attempt to pounce among them, all are under water instantly. There is also a larger species of hawk called the *byree*, extremely strong and bold, which kills hares with ease, and is frequently sent in chase of the larger kinds of waterfowl; indeed, it is said, they will even attack the *cyrus*. These birds are of a beautiful form, of a light lead colour, with the head, and about three or four inches down the neck, of a rich crimson. Their beaks are very short in proportion to their size, not being more than four or five inches in length. The cyrus is to be seen in very large flights on the sands in the great rivers, and in the shallow *jeels*. Their scream is very shrill and loud, and on a still night it may be heard from two to three miles off. They stand at least six feet high to the crown of their heads. When the hawk is sent in pursuit of the cyrus, or of the *manickjoor*, *curraheel*, or any of the larger aquatic birds, he is compelled to make a very wide circle and to mount spirally, lessening his range as he gets higher. The cyrus can mount almost in a perpendicular direction; but it would appear that in so doing he is greatly fatigued, for the hawk seldom fails in a few minutes to obtain the ascendancy. When the cyrus perceives the hawk to be above his own level, he screams loudly, and presents his beak as a defence. The hawk, however, generally keeps moving round until he can get towards the cyrus's back, when he darts down upon him like a shot. The cyrus, on such occasions, either bends his neck back, or throwing himself over, presents both his beak and his feet to avert the fatal blow. In this way, the battle is often prolonged for a considerable time; but if the byree be staunch, he will in the end so weary the cyrus, that it cannot act with sufficient promptitude to prevent being seized by the head, where the byree, fixing his talons, commonly into the very brain, or in at the eyes, and closing his wings, they are both precipitated together. But if the hawk find himself in danger from the violence of the fall, on approaching the ground he spreads his wings, which, serving as a parachute, causes him to keep above the cyrus, and enables him to alight with less force. At this time the hawkers must gallop to secure the byree, which, after eating the brains, would be very apt to take a long flight, and occasion great trouble." (*Oriental Field Sports*, vol. ii. p. 69.) The musteline (*putorices kathiah*), a small animal from twelve to fifteen inches in length, of a dark brown colour, and found in Northern India, is highly prized by the Nepaulese for its hostility to rats and mice, which instinctively shun any house where it is kept. Its ferocity and cunning are brought into play for the entertainment of the wealthy in some parts of India, as the same qualities in terriers or ferrets have been with us. The musteline is easily tamed and domesticated.

SUBSECT. 10. *Horse Racing in India.*

115. *Horse races* have been established in many principal stations of British India. Most of the courses, however, are (or were) not turfed, which is neither favourable to the horses nor to the sport. Meetings were many years ago regularly held at Meerut, Cawnpoor, Calcutta, Barrackpoor, &c., and Arabians of the best breeds maintained the reputation of Indian racing. Arab horses have been repeatedly matched against English racers in India, although the celebrated race of 1829, over the Barrackpoor course of two miles, between Recruit, an English bred horse, and Pyramus, an Arabian, was supposed indisputably to settle the superiority of the English breed of horses over their progenitors. In candour, however, it must be observed, the running of the Arabs against the best English horses has raised admiration for their stoutness, courage, and a degree of speed more than commensurate with their size, when compared with that of their competitors. For full particulars on the horse racing of India, now in great vogue, we would refer our readers to the *Sporting Magazines*, where, in various Numbers of both the *Old* and the *New*, it is fre-

quently noticed; and also for a further account of the horses of India, see the *Natural History of the Horse*, infrà.

Subsect. 11. *Field Sportings in the Indian Archipelago.*

116. *The field sportings of Ceylon do not, we believe, occupy a very prominent portion of its history.* Its elephants, nevertheless, have been thought the largest and finest among all those of Hindostan; and their capture, which was effected much after the methods already described, has greatly increased the Cingalese revenues. The principal animals peculiar to Ceylon are the *lion-tailed monkey* (*Cercocebus silenus*), so called from the tuft at the extremity of its tail. The *Memina* (*Moschus memina*), or Ceylon deer, peculiar to the jungles of this island, is so small and slender, that it is said to be brought alive in baskets to the market in Colombo. The Ceylon stag also we believe to be peculiar to this island, but no specimen of it to our knowledge has yet reached England. Mr. Daniel has figured it; and, according to him, it exceeds the British red deer in size, and is known to the natives as the *gona*. It is said to be naturally fierce, and to secrete itself in the deepest recesses of the forest; whence, however, the enterprise of the British sportsman sometimes arouses and secures it. Of the *Felinæ*, the usual varieties of this part of the globe are to be met with; the royal tiger is not however among the number. Of the feathered tribes of Ceylon the most remarkable is the *tailless cock* (*Gallus ecaudatus* Tem., *fig.* 25.), at present, we believe, only known in its wild state in the forests. This fowl is interesting for not having even the rudiments of a tail, and though it has a comb, that also is not deeply indented or toothed like that of the gallinaceous fowls of the other parts of India. The forest birds are of the most elegant plumage, and vie with the peacock and birds of paradise.

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TAILLESS COCK.

117. *The fish of Ceylon*, both of the fresh and salt waters, are much prized; but although we have a near relation there, we hear little of the *anglimania* so prevalent here. The flat fish are taken by the natives in great variety, but the shark is so on the alert that he is as apt to make free with the fisher as the fish, and thus renders bathing a hazardous enterprise here. " The pearl fishery of Geylon has long been famous. The shell furnishing this precious gem is the *Margarita sinensis*, Leach: the fishery lasts from February to April. The divers go down by fives, and usually remain under water two minutes; but some have been known to continue four, or even five. The shells are all placed in pits, where the fish are left to die and rot before the pearls are searched for; these, as it is well known, are morbid concretions formed in the shell by the animal when diseased. The divers are hired, and are either paid in money, or by a portion of pearl oysters before they are opened; they generally prefer the latter." (*Murray's Encyclopædia of Geography*, p. 1122.)

118. *The Indian Archipelago,* from the number and importance of its islands, has claims on our attention, but our limits will confine us to a slight notice of those of Java and Sumatra; the zoology of which has been so ably illustrated by Sir Stamford Raffles and Dr. Horsfield. To this we incline from the sporting character of the natives as given by travellers, who tell us that every animal is hunted by them, from the elephant to the mouse.

119. *In Java the wild animals* are more remarkable for the number of their species than of their genera, but one and all are preyed on by the Javanese. A squirrel, known as the *two coloured*, from having its body brown above and of a golden colour underneath, is peculiar here, but it bears little resemblance to that of Britain. It is however a favourite, and is kept in confinement by many as a pet. The natives make a pet also of a much smaller squirrel-shaped animal, known to them as the *tupay*, which has been highly spoken of by travellers for its domesticity and its engaging and playful manners. It is indigenous, as is said, to the forests of Blambangan. A more important animal to the Javanese is the *muntjak* (*Cervus muntjak* Raffles), which is hunted with avidity both by the Javanese and Europeans. To the natives it is known as the *kidang*, and we are indebted to Dr. Horsfield for many interesting particulars regarding it, and the methods of hunting it, which sport is very popular here. The muntjak is larger than the roebuck, and has a strong musky scent, by which dogs can easily pursue it. "It does not go off like the stag, in any accidental direction; its flight, indeed, is very swift at first, but it soon relaxes, and taking a circular course returns to the spot from which it was started. After several of these circuitous starts, if the pursuit be continued, the kidang thrusts its head into a thicket, and in this situation remains fixed and motionless, as in a place of security, regardless of the approach of the sportsmen. Javanese of rank, especially in the more distant provinces, keep large packs of well-trained dogs for hunting the muntjak after the following manner, —' When the chase commences, the Javanese dogs are led with a line by an attendant to the spot; the peculiar exhalations inhaled by the dogs soon discover the kidang, and as soon commence the pursuit with great ardour, while the sportsman follows more deliberately, and generally finds the dogs at bay with the kidang. The male possesses a great share of courage, and by its tusks many dogs are wounded in the attack; and although the sportsmen appear very dexterous and attentive to sew up the wounds made by the muntjak,

yet many are irrecoverably hurt. To preserve the dogs from these wounds, the natives endeavour to reach the game and shoot it with small shot before it has stood long at bay. The inhabitants of the most distant districts are in the habit of bringing their best dogs to the capital, on occasion of their half-yearly attendance, to perform the feudal services to the sovereigns; at which times it is principally that these huntings are witnessed by the European visitors and inhabitants.' Other modes of chase are also employed by the natives of rank, one in particular, common in the western parts of the island, is thus conducted: —' A district is surrounded by a line of hunters, and the kidangs are driven in towards a central spot, when forty or fifty of them are in this manner often obtained at a single pursuit. Many of the hunters are mounted, and the horses are trained to the chase; and in many cases the mounted sportsmen endeavour to overtake the animal, and to kill it by a stroke of the sword.' The muntjak, we are told, yields excellent venison; but the male only is eaten." (*Penny Cyclopædia*, art. Deer.) The tigers and leopards here are not so nice; so the ladies are made prey of as well as the males.

120. *In Sumatra the zoological varieties appear even greater than in Java.* Tigers of more than one species are found here, and it is said Sumatra has its lions also; and farther, the king of Acheen told Sir Stamford Raffles, that in the eastern part of his kingdom an animal with two unequal horns was to be found, of the size and make of the horse. Two distinct species of rhinoceros grace the Sumatran *Fauna;* and we are also told, that a singularly marked tapir was discovered there by the late Major Farquhar, who reports it to be nearly equal in size to the buffalo. It is distinguished from the tapir of South America by being strictly marked, half black and half white, the white portion extending circularly over it, as though a white cloth had been stuck on its back (*fig.* 26.). Elephants and buffaloes abound here, and if the natives hunt the latter occasionally for food, and the former is now and then pursued on great occasions, yet neither the one nor the other, when these naturalists were there, were much disturbed. In Amboyna, the *Sus babyroussa*, with its enormous tusks, is found, where it is famed for its capacity for swimming, which is said to be such that it can pass from one distant island to another. Ornithology, entomology, and conchology, shine here equally resplendent in the specimens they offer, as well in numbers as in brilliancy of colouring.

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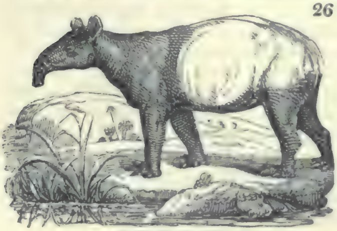

TAPIR OF SUMATRA

121. *The destruction of sharks is a sporting enterprise,* which some of the natives are said to achieve in a very extraordinary manner. One who professes to have been an eye-witness of it says, " I was walking on the bank of the river at the time when some up-country boats were delivering their cargoes. A considerable number of coolies were employed on shore in the work, all of whom I observed running away in apparent trepidation from the edge of the water — returning again, as if eager, yet afraid, to approach some object, and again returning as before. I found, on inquiry, that the cause of all this perturbation was the appearance of a large and strange-looking fish, swimming close to the bank, and almost in the midst of the boats. I hastened to the spot to ascertain the matter, when I perceived a huge monster of a shark sailing along — now near the surface of the water, and now sinking down, apparently in pursuit of his prey. At this moment, a native on the choppah roofs of one of the boats, with a rope in his hand, which he was slowly coiling up, surveyed the shark's motions with a look that evidently indicated he had a serious intention of encountering him in his own element. Holding the rope, on which he had made a sort of running knot, in one hand, and stretching out the other arm, as if already in the act of swimming, he stood in an attitude truly picturesque, waiting the reappearance of the shark. At about six or eight yards from the boat, the animal rose near the surface, when the native instantly plunged into the water, a short distance from the very jaws of the monster. The shark immediately turned round, and swam slowly towards the man, who in his turn, nothing daunted, struck out the arm that was at liberty, and approached his foe. When within a foot or two of the shark, the native dived beneath him, the animal going down almost at the same instant. The bold assailant in this most frightful contest soon reappeared on the opposite side of the shark, swimming fearlessly with the hand he had at liberty, and holding the rope behind his back with the other. The shark, which had also by this time made his appearance, again immediately swam towards him; and while the animal was apparently in the act of lifting himself over the lower part of the native's body, that he might seize upon his prey, the man, making a strong effort, threw himself up perpendicularly, and went down with his feet foremost, the shark following him so simultaneously, that I was fully impressed with the idea that they had gone down grappling together. As far as I could judge, they remained nearly twenty seconds out of sight, while I stood in breathless anxiety, and, I may add, horror, waiting the result of

this fearful encounter. Suddenly the native made his appearance, holding up both his hands over his head, and calling out with a voice that proclaimed the victory he had won while underneath the wave, *Tan, tan!* The people in the boat were all prepared; the rope was instantly drawn tight; and the struggling victim, lashing the water in his wrath, was dragged to the shore and dispatched. When measured, his length was found to be six feet nine inches; his girth, at the greatest, three feet seven inches. The native who achieved this intrepid and dexterous exploit bore no other marks of his finny enemy than a cut on his left arm, evidently received from coming in contact with the tail, or some one of the fins of the animal." (*Egan's Book of Sports*, p. 111.)

Sect. III. *The Chase as pursued in Tartary, Persia, Arabia, &c.*

122. *The combined huntings of the potentates of Tartary and of the Moguls* were conducted in the true style of eastern magnificence; and their inspections and visits to the different parts of their vast empires were little more than hunting expeditions on an enlarged scale. "In the camp of Aurengzebe there were tents for choice elephants, and for the other animals employed in hunting, for the birds of prey, for dogs, for leopards, for nylgaus and Bengal buffaloes, and even for lions and the rhinoceros also, all which were carried only for show. All the uncultivated land on the road was guarded with the utmost vigilance, to preserve the game for the king and his nobles, and the severest punishments were inflicted upon those who disturbed it." (*Menageries*, vol. ii. p. 173.) Marco Polo details also similar expeditions undertaken by Kublai Khan, whose tyrannical love of the chase was such that it was strictly forbidden to every tradesman, mechanic, or husbandman, to keep a vulture, hawk, or any other bird used for the pursuit of game; and even his nobles were restrained from all sporting in the neighbourhood wherever his majesty sojourned. According to Bernier, it was the great ambition of the Mogul to kill a lion from his elephant; any participation in which honour kings and princes only were allowed, except by special permission.

123. *The Asiatic lion is hunted*, according to Bernier, by fastening an ass near the spot which the gamekeepers have ascertained to be the lion's retreat. "The wretched ass is soon devoured, and after so ample a meal the lion never seeks for other prey, but, without molestation to either oxen, sheep, or shepherd, he goes in quest of water, and, after quenching his thirst, returns to his former place of retirement. He sleeps until the next morning, when he devours another ass, which the gamekeepers have brought to the same spot. In this way they contrive, during several days, to allure the lion, and to attach him to one place; and when information is received of the king's approach, they fasten an ass to the spot where so many have been sacrificed, down whose throat a large quantity of opium has been forced; this last meal being of course intended to produce a soporific effect upon the lion. The next operation is to spread, by means of the peasantry of the adjacent villages, large nets made on purpose, which are gradually drawn closer, in the manner practised in hunting the nylgau. Every thing being in this state of preparation, the king appears on an elephant barbed with iron, and attended by the grand master of the hunt, some omrahs mounted on elephants, and a great number of gourze-bedars on horseback, and of gamekeepers on foot, armed with half-pikes. He immediately approaches the net on the outside, and fires at the lion with a large musketoon. The wounded animal makes a spring at the elephant, according to the invariable practice of lions, but is arrested by the net, and the king continues to discharge his musketoon until the lion is at length killed." (*Ibid.* vol. ii. p. 174.)

124. *In Tartary, the quantity of game appears formerly to have been immense.* Father Gerbillon mentions that, on an embassy to Nertshink from Pekin, in the year 1689, he saw game of every description profusely spread over the country, and thousands of goats were seen on the banks of the Kerlon. Du Halde also observes on the numbers and size of the tigers, and the same of the wild camels, which were so swift that the hunters could seldom come up with them; and, consequently, very rarely reached them with their arrows. When on a party with the emperor, Paul Verbiest saw above a thousand stags enclosed in one moderate sized park or area; partridges rose in flights like starlings, and every day wolves and foxes were killed in abundance. The same emperor, according to Du Halde, destroyed eleven hundred and twenty-five hares in one day, and he reports that he continued to kill every subsequent day of hares, pheasants, and other fowls, a vast number. The woods in Tartary it is said are even now actually overrun with bears, wolves, elks, stags, roebucks and sables.

125. *Coursing is said to be a favourite amusement in Tartary at the present time;* but the Tartars would be thought unfair sportsmen by us, for they take out as many dogs as they can muster, and insure the destruction of poor puss by surrounding and besetting her on all sides, until she is hunted by one greyhound into the mouth of another. As soon as the Tartar hunters have picked up their prize, they immediately cut its throat, as they are forbidden to eat "flesh with the blood thereof." The hares of the Crimea are very large, generally weighing nine or ten, and often thirteen or fourteen pounds. Their fur becomes somewhat more grey in winter, but never white, as in the north of Russia and Poland.

126. *Fishing in the lake Baikal* appears to be as good, and to be conducted on as grand a scale as the shooting and hunting expeditions on land; and although the water is almost fresh, from fifteen hundred to two thousand porpoises are annually captured, being first shot or pierced through the holes in the ice. Sturgeon, carp, trout, pike, and salmon are also taken here in vast quantities. The aquatic birds found on its waters and around its banks are equally numerous with the fish it yields.

127. *The Persian field sports*, with a few exceptions, exhibit similar features to those of the Asiatic countries we have noticed. When Alexander the Great was in Persia, it is said

that he killed a fierce lion with his own hands, and the same account tells us how he was complimented on the occasion by the Lacedæmonian ambassadors. Philetas had nets made for the Persian huntings, which would enclose a space of a hundred furlongs; such was the scale on which the sports of the field were conducted in those days. Eagles, falcons, and hawks, are still bred here in great abundance, and it is said that they are remarkably well trained. Falconry was then a favourite pursuit, and it is said that it continues to be so to the present day. Every man of consequence professes to be a falconer; and after the fashion in olden times in our own country, no man of figure is without his hawks and his falconers.

128. *The effeminacy common to the Hindoos is unknown to the Afghans.* An Afghan, whenever he is met with, presents a figure equally martial and sportsmanlike. He is never seen without his rifle (*fig.* 27.); for hunting is the main pursuit over all Afghanistan, whose natives, we are told, pursue every living creature, and by every method which their means will allow them to employ. They are dexterous in netting, snaring, and decoying, by land or by water; and are said to pursue wild animals by arts and means peculiar to the country itself. They delight in the fighting of quails, cocks, and other animals, and encourage the combats of rams, dogs, and camels; they also delight in horse-racing. To possess themselves of quails, it is said they practise the following device:—"They stick two poles in their girdle, upon which they place either their outer coat, or a pair of trowsers, and these at a distance are intended to look like the horns of an animal; they then, with a hand-net, prowl about the fields, and the quail, seeing a form more like a beast than a man, permits it to approach so near as to allow the hunter to throw his net over it. In this manner they catch these birds with astonishing rapidity."

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AFGHAN.

Subsect. 1. *Sporting in Persia, Syria, and Arabia.*

129. *Hunting of wild asses is a favourite diversion in Persia.* An account, which relates to the year 1637, informs us, that thirty were betrayed into enclosures in the neighbourhood of Ispahan, by the orders of the king Shah Sefi, whose great amusement was to shoot at them, both with arrows and with balls. Those wounded with the arrows, it is said, attacked each other by biting and kicking furiously, until they either killed one another, or were dispatched by fresh wounds. Thirty more were then let in, and were destroyed in a similar manner, after which the carcasses were removed to the royal kitchen to be dressed, the flesh of the ass being a very favourite food with the Persians. We presume the royal invitations to the banquet were on a scale commensurate with the supply of asses' flesh. Sir William Jones observed, that such importance have the Persians always attached to sports of the chase, that the highest compliment they can pay to the memory of Hushing (probably contemporary with Minos), a king of Persia, B. C. 865, is the merit of being the first who broke dogs, and trained leopards to the hunting of animals.

130. *Falconry*, as we well know, has been long practised throughout the east. A writer informs us, he once had an excellent opportunity of seeing the sport near Nazareth in Galilee. "An Arab, mounting a swift courser, held the falcon on his hand as huntsmen commonly do. When he espied the prey on the top of the mountain, which was often an antelope, he let loose the falcon, which flew in a direct line like an arrow, and attacking it, fixed the talons of one of his feet into its cheek, and those of the other into his throat, at the same time extending his wings obliquely over the animal, spreading one towards one of his ears, and the other to the opposite hip. The creature thus attacked made a leap twice the height of a man, and freed himself from the falcon; but being wounded, and losing both its strength and speed, it was again attacked by the bird, which, fixing the talons of both his feet into its neck, held it fast, till the huntsman coming up took it alive, and cut its throat. The falcon was allowed to drink the blood, as a reward for his labour; and a young falcon which was in training was likewise put to the throat. By so doing the young birds are taught to fix their talons in the throat of the animal, as the properest part; for should the falcon fix upon the creature's hip, or some other portion of the body, the huntsman would not only lose his game, but his falcon too; for the beast roused by the wound, which could not prove mortal, would run to the deserts and tops of the mountains, whither its enemy keeping its hold would be obliged to follow, and being so separated from its master, must of course be lost."

131. *Arabia has a claim upon our notice,* chiefly from having been considered the native country of the horse (see p. 241.) Great numbers of horses are annually shipped from Bussorah and Bushire to Bombay, where they fetch good prices. Some of these are Arabian, and called "Nedjdu" horses, the cognomen of the finest race of that animal in the Arabian peninsula; but it is said that great imposition is continually practised in the export of Arab horses to India, those sent being commonly of a very inferior breed. The Persian horse, though a well-made and showy animal, is heavy, and more suited for a war-charger than for the chase. It is, in fact, chiefly imported at Bombay for the use of the Indian cavalry. We may here incidentally remark, that the colony of Western Australia is likely to become a great nursery of horses for the Indian cavalry service. An important stud has lately been removed from Van Diemen's Land to that colony; and from all accounts the horses of Western Australia deserve high commendation for their temper, endurance, and spirit. The Cutch horse is vicious, as are the Mahratta horses, though the latter are active and in some respects serviceable. Both varieties of the camel are bred in Arabia, and both are invaluable as beasts of burden; but it is the courser that is the delight of the Arab, and it is on him that his enterprises in assault and plunder, as well as his huntings of wild beasts,

are conducted. Panthers, lynxes, hyænas, jackals, and jerboas, are also common, and afford the natives hunting in plenty; and the Arab bow is still bent, and the body of the wild beast still receives the pointed arrow, although archery has been dimmed by rifle practice here, as elsewhere.

Sect. IV. *Field Sporting in Australia.*

132. *The zoology of Australia*, and the important islands surrounding it, Tasmania, or Van Diemen's Land, New Zealand, and in a less degree Papua or New Guinea, is characterised by the absence of any large predatory animals. Another prominent feature in Australian zoology is, that two-thirds of its beasts are marsupial, or pouched, at the head of which class stands the kangaroo. The *Marsupiata*, as is now well known, instead of making nests for their young by burrowing into the earth, afford them in their own persons an abdominal pouch, in which the young are nourished until able to shift for themselves. This admirable provision is, however, attended with this disadvantage, that it renders the marsupial animals less prolific, and detains their young longer in arriving at maturity, which will help to account for the paucity of Australian quadrupeds.

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KANGAROO.

133. *The generation of the marsupials*, we repeat, presents a most curious departure from the usual modes of animal reproduction. In the words of Mr. Swainson, who quotes from Cuvier, " The chief peculiarity of these animals is the premature production of their young, which are born in a state scarcely comparable to the development at which ordinary young arrive within a few days after conception; incapable of motion, scarcely showing the germs of limbs and other external organs, these little ones remain attached to the teats of the mother, until they are developed equally with the young of other animals at their birth. When grown to the size of a kitten, they occasionally quit the pouch, but as quickly return to it again (*fig.* 28.) on the appearance of danger: they remain thus connected with the mother about fifty days, when they entirely shift for themselves. Of the kangaroo there are several species, from the one figured to the smallest, which is not larger than a rat. The larger species attain to more than six feet in height, when standing erect, and one of this size will weigh more than two hundred pounds. The strength of such an animal is very considerable, and, though usually inoffensive, timid, and apt to fly from men or dogs when there is a chance of escape, when they are attacked and find escape impossible they fight fiercely at bay. It is related on credible authority that instances have occurred of their carrying away a man in their forepaws for twenty yards, and only relinquishing their hold and putting him down when assailed by dogs, which animals they seem instinctively to regard as their enemies. Though unable to swim, yet when hard pressed they will take to water, in which they can manage to stand to a great height by supporting themselves on the tips of the tail and feet, and under which they will sometimes hold their pursuer. The fleetness of the kangaroo is almost incredible; Mr. Wilkinson describes the movement of the hind legs as too rapid to be distinguished; and states that the whole body of the animal, when at full speed, resembles a ball in quick motion. They are easily tamed and domesticated. Their flesh, when properly cooked, greatly resembles that of the hare in flavour, but they are now so rarely taken in the colonised portion of the country, that it is deemed a luxury. In 1850, the singular spectacle was witnessed of a kangaroo-chase in England; one of these animals having escaped from its cage, and led a free life in adjacent woods in Surrey, was finally recaptured in a pond on the moorland district of Leith Hill, after a protracted tail-on-end chase with harriers, and a gallant struggle on the part of the truant.

134. *The phalangers*, so called by Buffon from an union of the two interior toes of the hind feet, as far as the last phalange or joint, are likewise inhabitants of this country, where they are known as the ringed-tailed opossums. There are several species, the three largest of which are about the size of a cat. The fur of these animals being found to answer well in the manufacture of hats has occasioned them to be pursued as well for profit as amusement. The tail of the phalangers is prehensile towards its extremity, which assists them in hanging suspended from the boughs of trees in which they reside.

135. *The petaurists, or flying opossums*, as they are called, form another group of marsupials known only in Australia. In size they vary from that of our domestic cat to that of the mouse. Their tail is unprehensile, but they need not such aid, for their habits lead them to a wider range of locomotion. Nature, to enable them to move rapidly from tree to tree, which are here distantly situated from each other, has furnished the skin of the lateral parts of the body with an extensible fold, which stretches along the sides and flanks, and when distended, acts the part of a parachute, and enables these animals to make the most extraordinary flying leaps, not only from bough to bough, but also from tree to tree, so as to make the term flying hardly any misnomer as applied to them. The Australians have also *bandicoots*, *dasyures*, and *thylacynes;* the latter of which are confined to a single species, about the dimensions of a moderate sized dog. The thylacyne marsupial is carnivorous, and a night-prowling animal, concealing itself in the forests during the day, and prowling at night in search of prey. The scarcity of larger animals, and the offensive qualities of this in the destruction of lambs, poultry, &c. make it an object of the huntings of the colonists. It is, notwithstanding its size, by no means a very formidable foe; but on the contrary is cowardly, and unable to resist even a large dog. Of the *Rodentia*, or *gnawers*, Australia exhibits a few rats and mice, and also some others which compose the genus *Hydromys* of naturalists. These are not unlike the former in habits, being decidedly rodent, but they carry on their *gnawings* in or near the water, after the fashion of the beavers of America, and have like them hairy tails and palmated feet, but are much more diminutive.

136. *The ornithorhyncus and echidna* are the principal of the *Edentata*, or toothless animals, and are peculiar to Australia. The echidna is small, covered with prickles, resides in burrows like the rabbit, and is insectivorous. The ornithorhyncus, popularly known as the duck-billed animal, may be truly said to be one of nature's wonders, and would seem framed purposely to be the connecting link between widely distinct classes. With a body covered by down rather than hair, webbed feet, and a broad bill, as in ducks; a smooth, thin, and unsutured skull, imperfect teeth, the bones of the breast consolidated together, a cleft uterus, and a general cloacal cavity (whence the name of the order, *monotrema*, to which it belongs, is derived). So many characteristics exist to approximate it in structure to feathered animals, that by Lesson, the ornithorhynchus was actually classed as an anomalous order of birds! It has been proved, however, that it does not lay eggs, and that, although destitute of nipples, it suckles its young: it is accordingly a mammal, even if its four legs did not secure its proper classification amongst quadrupeds. We have figured the ornithorhynchus at p. 161.

137. *The dingo of New Holland* (*fig.* 29.) is a notable quadruped here, and is perhaps the most perfect type of the original dog known. It is now cultivated in the Zoological Gardens; and is well described by Mr. Bennett, and also by a writer in the *Penny Cyclopædia*, under the article Dog. The dingo is about the size and shape of a very stout lurcher; is very strong and fierce, and equal to the destruction of an ass: one, indeed, seized on by a dingo, was with difficulty rescued from his attack. The dingo bears some likeness to the wolf; but it is worthy of remark, that however this and other varieties of the dog may exhibit much resemblance to the wolf, none have taken his direct form and character. These dogs run in packs of from six to eight, and being, in their wild state, most destructive to the sheep and other property of the colonists, are hunted down like foxes, and destroyed in any other way that is practicable. One method put in force is "making them commit suicide." In the hollowed and prostrate trunk of a tree a loaded gun is concealed, and a piece of meat is attached to a string tied to the trigger, and placed about a foot distant from the gun's muzzle. The dog, on seizing the meat, pulls at the string, by which the piece being fired frequently kills the animal on the spot.

29

DINGO.

138. *The feathered tribes of Australia offer no very striking features.* Eagles, falcons, and hawks are common; vultures there are none. Of incessorial, or perching birds, there are many; and among the scansorials the parrot group is particularly well supplied, as well by numbers as by the splendid plumage of the individuals. Of gallinaceous birds it is remarkable that there are none here; consequently, the pot-shooters have but a poor time of it. Indeed, were it not for the sport of hunting the "wild man," as the natives call the kangaroo, and of pursuing their wild dog and their ostrich, known as the emu, the chase here would exhibit no masculine features, and offer but few temptations to pursue it. But as a set-off, we may add, no licence is necessary to carry a gun, nor are there any game laws to restrict the sportsman. The wattle-bird of Van Diemen's Land, which is about the size of a snipe, is here reckoned a great delicacy. The *cereopsis*, a very valuable species of goose, occurs only in Australia, and appears, *ab origine*, to have been tame and confiding. The first visitors procured as many as they wanted by knocking them down; and now that they are domesticated, and breed freely, they prove equally prolific, and even more tame than the common goose.

139. *Australia* presents also another remarkable animal in the dog-faced opossum (*fig.* 30.), which, it has been very justly observed, suggests the idea of a union between the dog and panther. It feeds on fish; and its tail, being somewhat compressed, favours the opinion that it is naturally so formed to assist its predacious habits in the water. This region has many varieties of poisonous reptiles; but they are nowhere either so venomous, or so numerous, as in New Holland. Among these may be particularised the black snake, described by Mr. Bass as having a great resemblance to a burnt stick, and the yellow-brown snake; equally with the former an object of dread among the natives.

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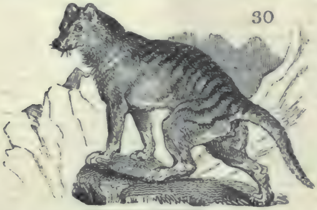

DOG-FACED OPOSSUM.

140. *Coursing of the kangaroo and emu* used to form the principal amusement of the early colonists; and so great has been the destruction of the former, that although sometimes met with in the scrub in South Australia, and the back parts of New South Wales, the kangaroo has mostly retreated inland, and become so scarce in the colonies that measures have been taken, so far as possible, to preserve the remains of the race there as a kind of game. The emu is a bird of nearly the size, and much of the form, of the ostrich, having short wings or rather flappers, and long legs, which enable it to run with great swiftness; but it seldom escapes from the dogs unless in the neighbourhood of a thicket, in which it invariably endeavours to take shelter. To enjoy the sport of coursing these animals in perfection, it is necessary to go beyond the limits of colonisation. On these occasions, it is customary for a party to erect a temporary tent over night, in some particular spot which the game is known to frequent, and having regaled themselves, to retire to rest; early in the morning their sport commences, and it is not unusual for the dogs to start flocks of birds and kangaroos, consisting of seventy or eighty of each kind. Their numbers, however, diminish the idea of sport, as the dogs themselves destroy an abundance of them. Flock succeeds to flock so rapidly, that twenty-six kangaroos have been known to be killed in one morning; and persons have been said to have filled two bullock-carts before nine o'clock with these animals and emus. They are hunted by means of both the native dog, and a cross breed between it and the European dog, which is said to be more courageous, and in every way superior. Although there are neither partridges, pheasants, nor woodcocks, the variety of other birds to be found here is infinite. Black swans, wild ducks, mountain ducks, teals, moorhens, widgeons, snipes, and quails, are in great abundance; the

last of which birds forms a very excellent substitute for the partridge. The bandicoot and kangaroo-rat are also plentiful, and afford the sportsman here nearly the same amusement as the hare and the rabbit in England. The rivers and lakes, it may be added, offer an infinite fund of diversion to the angler. Neither should we omit to notice that annual racing meetings are held at Hobart's Town, in Van Diemen's Land, and in Launceston. Thus the lover of field sports triumphs here also, and the chase is progressing as population increases; and its increasing popularity is apparent in the lengthened journeys which are now forced to be undertaken to meet with wild animals, which are retrograding from the presence of the new settlers, and seeking more undisturbed localities.

◆

Chap. II.

The Progress of Field Sports in Africa.

141. *Africa, the least civilised quarter of the globe*, exhibits, even at the present moment, a savage rudeness in its field sports, fitted for the earliest ages of barbarity and ignorance. In a few spots only has civilisation introduced any refinement of manners, or any systematic arrangement of the amusements usually followed by an enlightened people, and these parts are chiefly the countries bordering the Mediterranean, which are inhabited by races either of Arab descent, or sharing in the activity of spirit which characterises Europeans. Central Africa, however, still veiled in the profoundest barbarism, exhibits only a feeble representation of any manly field sports. The wretched inhabitants, it is true, strive with the beasts of the field for mastery, and occasionally revenge the murder of their wives, and the slaughter of their children, on the savage animals around them; but their means of offence, compared with those of other countries, are feeble, and their success doubtful.

Sect. I. *The Zoology of Africa.*

142. *The zoology of this quarter of the globe* is equally interesting to the naturalist, and to the sportsman. The animals found here are worthy of especial regard, whether we consider the size, strength, and ferocity of some as enemies, or the importance of others as useful and faithful servants of mankind. In the vast expanse of this amazing peninsula, particularly towards its northern portion, the majestic lion roams at large in hopes of surprising a buffalo, or is seen lurking for negro blood. The tiger is not found here, but his place in the list of marauders is too well filled up by others of the *Felinæ*, particularly by the panther, which is found from Barbary to the confines of Guinea. The leopard and the once, with other lesser members of this genus, also inhabit this country. On the famed horses of Arabia we shall have occasion to enlarge hereafter; the camel has already engaged our attention fully.

143. *Antelopes of every kind abound here:* indeed Africa has been called the great nursery of the antelopes, which seem here to take the place of the deer tribe in other countries. This group may be resolved into several genera, and almost innumerable varieties, which exhibit vast differences in size, relative proportions, and habits; as witness the monstrous eland or elk, weighing nearly nine hundred pounds; the gnu, also, though less weighty, is large and ferocious, and the light and elegant klipspringer, which resembles the chamois of the Alps. Our limits forbid our following all the varieties throughout; but we cannot forbear to hint how they tend to harmonise the links in nature's great chain; some appearing nearly allied to the ox, others to the deer, and many to the goat. The gnu, for instance, is seen to have points of resemblance to the horse, the ox, and the stag. His horns resemble those of the buffalo; his neck, body, and tail are equine, with a preposterously prominent crest, fronted with a vast profusion of bristling mane. As the flesh of this animal is excellent, it is hunted with extreme ardour by the natives, as well as by the settlers there. This quarter of the globe is also the birthplace of the zebra and of the quagga, animals now seen in our menageries; but it principally abounds with antelopes, which are seen in vast herds. When however we consider the wants of so many carnivorous animals, our wonder at their number ceases, while our admiration is excited at that policy in nature, which so happily balances the supply with the wants of her creatures.

144. *In Egypt, Barbary, and Palestine*, the little jumping jerboa, a diminutive type of the kangaroo of Australia, may be noticed, as being considered the coney of Holy Writ, the true rabbit being unknown in this part of the world. It appears to be the *Daman Israel* of the Arabs, and is probably also the mouse noticed in *Isaiah* lxvi. 17.; *achbar* in the original signifying a jerboa. It is in Lower Egypt, Mr. Swainson informs

us, that the *Felis maniculata* of Mr. Ruppel, or Egyptian wild cat, is found; which is interesting to us from the prevailing opinion of its being the original species whence our domestic cats have sprung, although the cat, in a state of domesticity, is not found in this quarter of the globe.

145. *Western Africa*, with its pestilential exhalations and unhealthy climate, has been but little explored; but we know that in its deep recesses the ouran-outang luxuriates, and that the chimpanzee, whose approach to the human figure exceeds all other animals, here holds undisputed tenure, surrounded by baboons and monkeys of numerous kinds. The scale-covered manis is also found here; and small antelopes, differing from those of Northern Africa, range in vast herds; while lions and hyænas, which prey on them, live undisturbed. Approaching Central Africa, the elephant, the rhinoceros, and the giraffe are met with: but the giraffe of Northern Africa, according to the examinations of Mr. Ruppel, is a distinct species from that of Southern Africa. Wild dogs, jackals, and foxes of various kinds, exist here also in vast numbers, and are very destructive to the varieties of the antelope. Buffaloes, wild, treacherous, and powerful as they are seen here, are nevertheless hunted with much avidity and success by the natives, whose rifles frequently prostrate them, and whose arrows yet lay them low.

146. *In Egypt the ichneumon is common, and deserving of notice* from the ancient records, which assure us that in by-gone times almost divine honours were paid to it; but is now regarded only as a determined enemy to all other vermin; itself an incorrigible egg-sucker. In this very property, however, which makes all the ferret family so obnoxious to us, lies the vast hold which this animal had on the regard of the Egyptians. Small as it is, it is said to carry on "a vigorous, incessant, and successful warfare against crocodiles, serpents, lizards, &c.; not, indeed, by a personal attack on them, but by seeking out their eggs and young, which it sucks and kills, not only with a view to satisfy hunger, but it continues the work of destruction as long as a reptile, egg, or young is left. It has also other estimable qualities, for it is easy of domestication, and in this state evinces great attachment, both to the house and person of its master. It never wanders from home, and is never so well pleased as when personally caressed by those it is intimate with. Among these supposed sacred animals of the ancient Egyptians, we can hardly pass over the ibis, technically known as the *sacred ibis* (*fig.* 31.), which was so venerated among the Egyptians, that not only was it worshipped in its own person, but it appears to have gained an immunity from all harm for all other birds with long legs and long bills, or, in other words, for all storks and cranes.

31

SACRED IBIS.

147. *The birds of Africa*, if less interesting to the sportsman than to the naturalist, are yet not altogether unworthy of his notice. The ostrich, as we shall show elsewhere, affords admirable sport when he is coursed. Nor can it be other than a matter of interest to be made aware, that birds which with us are, as it were, outlawed should there be objects of religious veneration. The vultures are numerous and varied; but, as the scavengers of nature, are venerated and preserved with pious care, as is the crane also. The gallinaceous tribes, however, are here objects well worthy of the sportsman's notice. The guineafowls of Western Africa are numerous in the extreme, and offer an endless fund of amusement to such as will brave the pestilential miasmas which rise from the morasses and marshes where they are found. The partridge of Africa is small; but in the quail the English sportsman may recognise an old acquaintance; for the quails of Europe migrate to Africa in the autumn in countless multitudes. That bird of disputed existence, the dodo, is also still supposed to be hid in some of the unexplored islands of Africa. It may be considered as out of our province to notice the traveller's wonder, when he observes hills of some height, as related in works of credit, and is informed that they are built by the white ants; nor will he be less so when he learns, that even the natives will leave their dwellings, and fly before the myriads of the black ant, when they periodically migrate in search of food. The black korau, paaw, and bustard of the Cape Colony, are noble species of game.

Sect. II. *Hunting of the Elephant in Africa.*

148. *The elephant in Africa*, as in Asia, stands foremost among the living objects of the field, to the destruction of which the natives of this country also have in all times directed their energies; but not with a perseverance equal to the Asiatics. There were, however, periods in the early ages of antiquity when this stately animal was pursued with unremitting ardour even here; "when Africa yielded her tributes of elephants' teeth to the kings of Persia; when the people of Judæa built ivory palaces; when the ivory benches of Tyre supported that luxurious people; when contributing to the luxury of the early Grecian princes, the roofs of some of their buildings were inlaid with the same material; when Etruscan attributes of royalty were sceptres and thrones of ivory; when colossal ivory statues of their gods, far exceeding in their vast proportions and their splendid ornaments all the magnificence of the moderns, were raised by the Greeks of the age of Pericles; and when immense stores of ivory, to be employed with similar prodigality, were collected in the temples." (*Menageries*, vol. ii. p. 122.) It was then that Africa became despoiled of her elephants, which were before so plentiful, that, according to Polybius, the tribes on the confines of Ethiopia employed their tusks as door-posts, and enclosed their fields with them as palisades. When the Roman power fell into decay, and the commercial intercourse with Africa was so long suspended, the African elephant, remaining unmolested as an article of commerce, again prodigiously increased. But the luxuries of mankind, renewing the

demand for this curious species of bone, again awakened the energies of the African, and the lofty animal once more became the subject of mighty enterprise.

149. *The value of the elephant to the African* is, however, not confined to the possession of his tusks, nor to his flesh, which is a favourite food with them, certain portions of the body being esteemed great dainties; but there appears for ages to have been a charm which the possession of an elephant's tail bestowed, for it conferred such dignity on the fortunate possessor, as rendered it an object of great solicitude to obtain. The huntsman, accordingly, devoted himself, with as much ferocity as the hyæna dog, that gnaws off the tail of the ox and sheep while sleeping, in like manner to steal upon the unsuspecting elephant in his pasture, and to cut off his stern with a single blow of his hatchet. When the elephant is sought principally for the sake of ivory, the pursuit is usually undertaken by a certain number of Hottentots, acting under the guidance of a principal, who is often an European. Mr. Cowper Rose shared the dangers of such an enterprise; and, in relating his adventure, he informs us, that " The director of the hunt was a native of England, who had been a smuggler; 'a thin, spare, bony man, formed for activity,' with 'a sun-scorched countenance, and an eye of habitual watchfulness.' His hunting dress was a dark blue linen shirt; trowsers of the same colour, supported by a waist-belt; a yellow silk handkerchief bound tightly round his head; his powder-horn and pouch hung on his side. The two Hottentots who accompanied the hunter were equipped even in a more unpretending costume: trowsers tucked up to the knee, showing bare legs that defied thorns; one shoulder-belt, from which the pouch and powder-horn were suspended, and another supporting a hatchet for cutting out the tusks, and a bag for holding wild honey. Three or four bold spirits thus compose a hunting party, each bearing an immense gun, weighing at least twenty pounds. Their course is through the wildest countries, where no sound is heard by day but the monotonous toll of the *companero*, or bell-bird; and no more pleasing voice at night than the shriek of the jackal, and the chattering of the hyæna. Foot-prints of the elephant begin to be traced; and the Hottentots, with unvarying accuracy, determine when the animal passed. 'This is three days old;' or, 'this is last night.' Several days are passed in these fatiguing marches under a burning sun. At length the hunter sees a troop of elephants on a distant hill, while the inexperienced European can discover nothing. What a subtle sense," he observes, " is the sight of a Hottentot! How he assists it by a difficult and truly wonderful attention! Upon a dry ground, where, in spite of his great weight, the elephant scarcely leaves any trace — in the midst of dead leaves, scattered and curled up by the wind — the African recognises his step; he sees the way which the animal has taken, and that which he himself must follow. A green leaf turned up or broken off, a bud or a little twig bruised or torn down — these, and a thousand other circumstances, are indications which never fail him. The most expert European hunter is completely baffled; for myself I could never understand it. But now we went on with fresh vigour, and gained the hill opposite to that on which the elephants were; we halted and watched; a few words passed between the hunter and skipper (a Hottentot), and we descended silently the ravine that divided us. Again they whispered, marked from what point the light breeze came, and we commenced the steep ascent in a direction that the wind might come from the animals to us, for we were now so near them that their quick scent would have discovered us. Skipper led, while we followed in Indian file, threading a narrow rocky path, which skirted one bank of a small hollow, while the huge beasts were feeding on the opposite one. The leader halted, the hunter gave my companion and myself lighted sticks, and whispered directions to fire the bush and grass, and to retreat, in the event of the animals charging. It was a strange feeling to find myself within twenty yards of creatures whose forward movement would have been destruction; but they stood browsing on the bushes, and flapping their large ears, pictures of indolent security. We were taking our stations when we heard a shot, and then another, and of the eight elephants, seven fled. We went forward to see the effect of the shots; skipper's had carried death with it; the elephant had fallen, but rose again. I never heard any thing like its groans; he again fell, and we went up to him; the ball had entered behind the shoulder, and reached the heart. The troop of elephants fled, but their enemy quickly follows. Their course may now be easily traced, for they are terrified and angry. They uproot every thing that impedes their path; branches are strewed every where around; and the large *euphorbias* are broken like twigs. They at length stop. Their huge backs show above the bush. The hunters steal on — again fire — again an elephant dies — and again the herd rushes forward. Night comes on. The adventurers light a blazing fire, and sleep in safety, while the elephants and the buffaloes are around them."

150. *The African rhinoceros* is an animal much sought after by the hunters of Caffraria. Clumsy as he appears in figure, it is nevertheless extremely difficult to overtake him even on horseback. Partly however by the speed of the horses, and partly by the stratagem of the riders, the Abyssinians do come up with him, although two of them are usually on one horse. The disposition of this animal to look only straight forward very much favours the pursuit, and often makes him relax his pace. It, however, principally assists the object

of the hunters, by allowing one of them to drop down from the horse unseen, and to hamstring the huge beast, which renders him helpless, and the man being immediately taken up, again escapes molestation. The hunters also watch these animals as they roll in the ooze, for the purpose of coating themselves with mire; and while this is doing the hunters approach, and stab them. The two-horned rhinoceros is also often taken in pitfalls, as well as shot with iron balls, but the attack often proves a dangerous and even fatal enterprise.

Sect. III. *Hunting the Giraffe.*

32

GIRAFFE.

151. *The giraffe* (*Cervus Camelopardalis* Linn., *Camelopardalis Giraffe* Cuv., *fig.* 32.) is so wonderful an animal, that short-sighted man might be tempted to consider dame nature to be like himself, sometimes sportively inclined; and that it was in such a humour she formed this singular quadruped. But when we look around, and survey that wonderful harmony which has clothed the earth with verdure; some plants reposing as it were on its bosom, while others are framed to rear themselves aloft in different altitudes, at once disencumbering the ground of their weighty foliage, and furnishing food and shelter for living myriads. When also we reflect that vegetable matter is the *pabulum vitæ* of large classes of animals, and that it is infinitely varied in the manner of its growth, and the matter of which it is composed, we must perceive that equally varied must be the internal organs of the animals destined to assimilate it for their sustenance, and the external structure and organisation of those parts by which it is to be collected. The mighty elephant bends the strong branches of the tall tree with his powerful proboscis, to gather the leaves and tender fibres at their extremities. The giraffe's natural food is of the same kind; but as his bulk bears no proportion to that of the elephant, so neither has he a similar prehensile proboscis; compensating means are therefore given to him, by furnishing him with a neck of extraordinary length, which enables him to reach the minute branches of succulent trees, particularly those of the *acacia*. These he draws to his mouth in a very singular way by his tongue, which is here in a more particular manner an organ of adaptation, capable of being extended at pleasure to the length of sixteen or seventeen inches, for the purpose of reaching the small boughs; around these his tongue is seen to be carried in the form and manner of a hook or finger, which are retained by it until the lips gather the twigs and leaves.

152. "*The Giraffe*," says Mr. Griffith, "stands isolated among the ruminating animals in family, genus, and even species. By the length of the neck, the callosities on the sternum and knees, and by the want of spurious hoofs, it assimilates with camels; and so obvious is this approximation by the addition of stature, that it did not escape the notice of the ancients: but the pedunculated form of the frontal processes, in their shape of horns, recalls that character in the *Styloceri*, or muntjak deer; while the stiff hairs which crown the summits seem to want only the gluten to cement them into true horns, and embody it, in systematic arrangement, with the *Cavicornia*." (*Animal Kingdom*, vol. ii. p. 150.) The giraffe measures seventeen or eighteen feet in height; it is gregarious, and lives in the deserts of South Africa, in small families of ten or a dozen, frequenting such spots as afford succulent food, particularly trees of the *mimosa* kind.

153. *As an animal of the chase, the pretensions of the giraffe are not great.* It is however hunted by the Africans, who, it is said, find it difficult to overtake, even with a moderately fleet horse. Its pace appears an amble, but the specimens seen in England, one of which was sent to his majesty George IV., exerted their speed rather by a succession of jumps, after the manner of deer, than by either a trot, gallop, or amble. Vaillant, who had been at the death of several which had been chased by himself, describes the ecstasy he felt on first beholding the death of a giraffe. "One of the Namaquas," he says, "who were my guides, came in great haste to give me information which he thought would be agreeable to me. He had seen the strong feeling of pleasure which I had evinced at the sight of the skin of the giraffe; and had run to say that he had just found in the neighbourhood one of these animals, under a mimosa, upon the leaves of which he was browsing. In an instant, full of joy, I leapt upon my horse; I made Bernfry (one of his men) mount another; and followed by my dogs, I flew towards the mimosa. The giraffe was no longer there. We saw her cross the plain towards the west, and we hastened to overtake her. She was proceeding at a smart trot, but did not appear at all hurried. We galloped after her, and occasionally fired our muskets; but she insensibly gained so much upon us that, after having pursued her for three hours, we were forced to stop, because our horses were quite out of breath, and we entirely lost sight of her. The pursuit had led us far away from each other and from the camp; and the giraffe having made many turns and doubles, I was

unable to direct my course towards home. It was noon. I already began to feel hunger and thirst; and I found myself alone in a sterile and arid spot, exposed to a burning sun, without the least shelter from the heat, and destitute of food." Our traveller, however, shot and cooked some birds of the partridge kind, and was fortunate in regaining his companions in the evening. "The next morning," he continues, "my whole caravan joined me again. I saw five other giraffes, to which I gave chase; but they employed so many stratagems to escape that, after having pursued them the whole day, we entirely lost them as the night came on. I was in despair at this ill success. The next day was the happiest of my life. By sunrise I was in pursuit of game, in the hope to obtain some provisions for my men. After several hours' fatigue, we descried at the turn of a hill seven giraffes, which my pack instantly pursued. Six of them went off together; but the seventh, cut off by my dogs, took another way. Bernfry was walking by the side of his horse, but in the twinkling of an eye he was in the saddle, and pursued the six. For myself, I followed the single one at full speed; but, in spite of the efforts of my horse, she got so much a-head of me that, in turning a little hill, I lost sight of her altogether, and I gave up the pursuit. My dogs, however, were not so easily exhausted. They were soon so close upon her, that she was obliged to stop to defend herself. From the place where I was, I heard them give tongue with all their might; and, as their voices appeared all to come from the same spot, I conjectured that they had got the animal in a corner, and I again pushed forward. I had scarcely got round the hill, when I perceived her surrounded by the dogs, and endeavouring to drive them away by heavy kicks. In a moment I was on my feet, and a shot from my carbine brought her to the earth. Enchanted with my victory, I returned to call my people about me, that they might assist in skinning and cutting up the animal. Whilst I was looking for them, I saw Klaas Baster (another of his men), who kept making signals which I could not comprehend. At length I went the way he pointed, and, to my surprise, saw a giraffe standing under a large ebony tree, assailed by my dogs. It was the animal I had shot, who had staggered to this place; and it fell dead at the moment I was about to take a second shot. Who could have believed that a conquest like this would have excited me to a transport almost approaching to madness! Pains, fatigues, cruel privations, uncertainty as to the future, disgust sometimes as to the past — all these recollections and feelings fled at the sight of this new prey. I could not satisfy my desire to contemplate it. I measured its enormous height. I looked from the animal to the instrument which had destroyed it. I called and recalled my people about me. Although we had combated together the largest and the most dangerous animals, it was I alone who had killed the giraffe."

Sect. IV. *Hunting the Lion.*

154. *The lion is most common in Africa;* but is also found near Deesa, and other parts of the Bombay Presidency in India. (*Figure* 33.) To see him in the confined pen of a travelling menagerie, dispirited by repeated violences and a meagre allowance of food, is to view him unfavourably indeed. His lassitude there does not bespeak the agility of the cat, or a degree of strength sufficient, by a single stroke of the paw, to crush the skull of an ox, or fracture the thigh-bone of the stoutest horse. Mark his monstrous head and the strength of his jaws, graced as they are with a circlet of hair, which reaches almost to his knees, and serves equally to strike terror, as to proclaim his sex. Nevertheless, the lion also can be tamed and with less difficulty than might be supposed: if he be taken young, and is then treated with kindness, he becomes playful and affectionate.

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African Lion.

155. *The natural history of the lion* (*Felis leo* Linn.) places him at the head of the feline genus, and the most prominent of the order *Carnassia.* "This genus," observes Mr. Griffith, "is more distinct, more isolated, and more obviously characterised to the eye of common observation, and more easily defined by its systematic characters, than most others. A similarity in physical and moral character, nearly approaching to identity, prevails throughout almost all the species, from the dauntless lion and ferocious tiger, to their common domestic congener the cat; size and colour form their leading specific distinctions. It is true, indeed, that one species at least, and probably another or two, exhibit a slight approximation to the dog, whence they have been called canine cats; and a similar aberration from the common type has also been observed, in one or two species, to the weasel family, forming instances of partial exception to the above general observation." The generic characters of the *Felinæ* consist "in their bent trenchant retractile claws, which being drawn into a sheath when inactive, are thus constantly preserved sharp for use; the small number and carnivorous character of their cheek-teeth, the number of their toes, five before and four behind, their short muzzle, powerful jaws, and aculeated tongue; these, added to their known character for ferocity, and appetite for a living prey, prevail in all the species." (*Animal Kingdom*, vol. v. p. 421.)

156. *The lion is one of the animals frequently hunted by the colonists of the Cape of Good Hope*; indeed the whole country offers a fine field for the sportsman in the variety and importance of its wild animals. The chase of the lion does not however beget an interest equal to that of the tiger; for the lion is easily overtaken by stout dogs, which, if sufficiently well trained to the purpose, will arrest his progress, and keep him at bay until the hunters come up and get a shot at him. It has even happened that the dogs alone have rushed in upon him and sealed his fate, but not until some have been laid prostrate by his paw. An enterprising African has himself occasionally pursued the lion to his lair, depending on his own skill, and the chance of wounding him with a poisoned arrow. Others among them watch his movements from a tree, and shoot him with a rifle ball. The lion is often hunted by the native Africans merely to free themselves from its ravages among their cattle. For the safety of their own persons they appear to have less fear than we might apprehend, it being now considered that human flesh is not so well suited to the taste of the lion as that of beasts, and among these the horse appears to be preferred to all others. The Hottentots having discovered the track of a lion which has robbed them of their cattle, call together a body of their friends, who with surprising facility track the animal along the grass, gravel, and even through brushwood and thickets, by markings known only to themselves, and which they will not, or perhaps cannot, explain to the uninitiated. We may take this opportunity to notice the extraordinary account given by travellers generally of the strength of the lion. We can suppose it to be such that he can with ease sling a calf across his body, and trot away with it; but when we are told, from what appears the most respectable authority, that he "is able to drag away a heavy ox, and that a young heifer is carried off with perfect ease," we cannot but feel surprise. Mr. Cumming, whose hunting adventures in South Africa have formed the materials for one of the most interesting books lately published, remarks, "There is something so noble and imposing in the presence of the lion, when seen walking with dignified self-possession, free and undaunted, on his native soil, that no description can convey an adequate idea of his striking appearance. Combining, in comparatively small compass, the qualities of power and agility, he is enabled, by means of the tremendous machinery with which nature has gifted him, easily to overcome and destroy almost every beast of the forest, however superior to him in weight and stature. Though considerably under four feet in height, he has little difficulty in dashing to the ground and overcoming the lofty and apparently powerful giraffe. The lion is the constant attendant of the vast herds of buffaloes which frequent the forests of the interior; and a full-grown one, so long as his teeth are unbroken, generally proves a match for an old bull buffalo, which in size and strength greatly surpasses the most powerful breed of English cattle; the lion also preys on all the larger varieties of the antelopes. The zebra is also a favourite object of his pursuit." We refer the reader to Mr. Cumming's book for one of the best descriptions of this noble beast yet published. But to pursue our detail, we have to state that the track, the Hottentots so dexterously make out, being supposed to have led them to his retreat, the next object is to drive him from it, that he may be attacked by the mass of assailants. "The approved mode in such cases," we are told by Mr. Thompson, a traveller of respectability, and a sportsman also, "is to torment him with dogs till he abandons his covert, and stands at bay in the open plain. The whole band of hunters then march forward together, and fire deliberately one by one. If he does not speedily fall, but grows angry, and turns upon his enemies, they must stand close in a circle, and turn their horses rear outward; some holding them fast by the bridles, while the others kneel to take a steady aim at the lion as he approaches, sometimes up to the very horses' heels, crouching every now and then, as if to measure the distance and strength of his enemies. This is the moment to shoot him fairly in the forehead, or some other mortal part. If they continue to wound him ineffectually, till he waxes furious and desperate, the business may end in mischief. The frontier boors are, however, such excellent marksmen, and withal so cool and deliberate, that they seldom fail to shoot him dead as soon as they get within a fair distance."

157. *M. Vaillant's account of a lion hunt*, at which he was present, is a spirited and very characteristic detail. "When in camp at Orange river," he says, "a chief informed me that a lion and lioness had taken up their abode in a thick coppice, which he showed me. The horde had in vain endeavoured to dislodge the ferocious beasts, who had evaded all their attacks. They came, he said, every night, and attacked not only the beasts, but the men themselves; and, the very night before, they had taken away an ox. Full of confidence and hope in the success of my fire arms, the horde was happy at my arrival, and intreated me to rid them of so dangerous an enemy, not in the least doubting my success, if I would attempt it. The lions being so resolved to remain, in spite of all the efforts of the horde to drive them off, made me suspect they had cubs, and this circumstance would render the attack extremely dangerous; for these animals, formidable at all times, are under these circumstances so furious, that nothing can resist them. Nevertheless I engaged to attack them on the following day. At day-break all the men of the horde were armed, ready for the attack; even the women and children wished to be of the party—not, indeed, to join in the attack, but to have the pleasure of enjoying our victory. We heard the lions frequently

roar, but the appearance of day quieted them, and the profound silence that followed was to us the signal of departure. The coppice was about two hundred feet long and sixty-one broad, and was more sunk than any of the surrounding ground, so that to get at it we were forced to descend. It was chiefly composed of low bushes, and was in every respect fitted for a nursery (see *fig.* 34.). As none of the savages would enter the place, we were obliged to attempt driving the oxen of the horde into it. This was a difficult matter, but by dint of blows and noise we at length forced them to enter; at the same time my dogs were let loose, and to frighten our enemy still more, I discharged my pistol several times. The oxen smelling the animals soon began to recoil, but being forced by our noise and the barking of the dogs they entered furiously, lowing in a dreadful manner. The lions, roused by their danger, expressed their rage by roaring horribly. The shock of two armies was not more tremendous than their terrible uproar, confounded with the animated cries of the men and dogs and the bellowing of oxen, when, on the side opposite to where I was I heard piercing cries, instantly followed by the report of a gun; to this report immediately succeeded shouts of joy, which, passing from one to the other, soon reached me, and announced a victory. I ran to the place whence the noise came, and found the lioness expiring. It had at last quitted its fort, and was rushing with fury towards my troop, when Klaas, who occupied that post, seeing her, had fired at and killed her. After this, the cubs, uneasy at not seeing their mother, ran to all quarters of the wood growling; the male, separated from her, redoubled his roaring and his rage. He at one time appeared on the skirts of the thicket, his eyes flashing fire, his mane erected, and lashing his sides with his tail; he was, however, unfortunately out of the reach of my fusil, and a man who was nearer fired at him, but unfortunately missed him. At this bad shot he disappeared, and we saw him no more. After waiting some time, despairing of the success of my stratagem, I resolved to have recourse to my former plan of attack, and ordered every man to his former post; but the oxen were so extremely frightened, that when we attempted to force them into the coppice, we found it impossible. As we had employed the greatest part of the day, and the sun was now setting, and as the attack would become perilous, I thought it expedient to retreat, and leave for the next day our last victory." It remains to add, that the lion absconded during the night, and took his cubs with him. At no time is the lion to be more dreaded than when his partner has young. Mr. Cumming, before quoted, whose bold experience in the enterprise makes him an indubitable authority, says, "I may remark that lion hunting, under any circumstances, is decidedly a dangerous pursuit. A recklessness of death, perfect coolness and self-possession, an acquaintance with the disposition and manners of lions, and a tolerable knowledge of the use of the rifle, are indispensable to him who would shine in the overpoweringly exciting pastime of hunting this justly-celebrated king of beasts." (*A Hunter's Life in South Africa*, vol. i. p. 201.)

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LIONESS AND CUBS.

Sect. V. *The Chase of the Leopard, Zebra, Hyæna, Buffalo, &c.*

158. *The leopard, panther, and hyæna* make up by their numbers for the scarcity of the tiger in Africa, and are all of them hunted by native men of rank after the manner of India. They are also destroyed by the poorer classes by pitfalls or wooden traps, or the native sportsmen lie in wait for them concealed in pits or cages, from which they shoot them with arrows or the rifle.

159. *The ferocity of the Cape leopard is extreme*, and hunting parties are constantly in quest of him to keep down his maraudings, which are great among the cattle of the natives. It is related of the Moravian missionary Schmitt, that, having gone out with a party of Hottentots to hunt hyænas, which had committed ravages in the neighbourhood, they started a leopard, which instantly sprang on the Hottentot and bore him to the ground. Mr. Schmitt ran forward to the aid of the man with his gun cocked; but before he could find an opportunity of firing, the animal left the Hottentot, and flew with fury at himself. In the scuffle he dropped the gun, but luckily fell above the leopard with his knee on its stomach. The animal seized him by the left arm with its jaws, and kept striking him with its paws, and tearing the clothes in tatters from his breast. Schmitt, however, being a powerful man, succeeded after receiving another severe bite or two in seizing the leopard by the throat with his right hand, and held it down, in spite of its desperate struggles for a few minutes, until, just as his strength was giving way, one of the Hottentots on the outside of the jungle, who heard his cries for help, came to his rescue, and shot the ferocious animal right through the heart, so that its death was instantaneous. Had any life been left, its dying struggles might still have proved fatal to Mr. Schmitt; even as it was, he was so terribly lacerated, that for several weeks his life was in the greatest danger."

160. *The zebra and the wild ass are regularly hunted by the African chiefs*, and are in like manner way-laid by the poorer natives and shot by arrows. The camel, which is here found wild, is also chased for his skin and flesh, or for his future services when he can be taken alive; but his habitual wildness renders his subjection afterwards uncertain.

161. *The buffalo is common in Africa*, and is hunted with great avidity by the natives, as well to rid them of so dangerous a foe, as to furnish themselves with food from his flesh, and leather from his hide. To Europeans who reside at the Cape he affords excellent opportunities for sporting enterprise. It is common to pursue him with dogs until he is brought to stand at bay, when the hunters severally fire at him with their rifles. "The buffalo of Africa is a very large and powerful animal. The body is of a black or dusky ash colour; the front parts are covered with long, coarse, black hair. The horns are very thick, and rugged at the base; sometimes measuring three feet in length, and lying so flat as to cover almost all the top of the head. The body and limbs are very thick and muscular; and the animal is above twelve feet long, and six in height. The head hangs down, and bears a most fierce and malevolent aspect. In the plains of Caffraria, buffaloes are so common, that it is by no means unusual to see a hundred and fifty or two hundred in a herd. They generally retire to the thickets and woods in the daytime, and at night go out into the plains to graze. Treacherous in the extreme, they frequently conceal themselves among the trees, and there stand lurking till some unfortunate passenger comes by, when the animal at once rushes out into the road and attacks the traveller, who has no chance of escape but by climbing up a tree, if he is fortunate enough to be near one. Flight is of no avail, he is speedily overtaken by the furious beast, who, not content with throwing him down and killing him, stands over him for a long time afterwards, trampling him with his hoofs, and crushing him with his knees; not only mangling and tearing the body to pieces with his horns and teeth, but likewise stripping off the skin by licking it with his tongue. Nor does he perform all this at once, but often retires some distance from the body, and returns with savage ferocity to gratify afresh his cruel inclination." The Caffrarians make use of bows and arrows against the buffalo: the spear also is employed in the attacks on him; but the javelin is the most effective weapon in the hand of the Caffre. When one of these people has discovered the place where several buffaloes are collected together, he blows a pipe made of the thigh bone of a sheep, which is heard at a great distance. The moment his comrades hear this notice, they run up to the spot, and surrounding the animals, which they take care to approach by degrees, lest they should alarm them, throw their javelins at them. This is generally done with so sure an aim, that out of eight or twelve scarcely a single one escapes. It sometimes however happens that, while the buffaloes are running off, some one of the hunters who stands in the way is tossed and killed; but this is a circumstance not much regarded by the Caffrarians. When the chase is ended, each one cuts and takes away his share of the game. Some Europeans at the Cape once chased a buffalo, and having driven him into a narrow place, he turned round and instantly pushed at one of his pursuers who had on a red waistcoat. The man, to save his life, ran to the water, plunged in, and swam off; the animal however followed him so closely, that he had no alternative but that of diving. He dipped over head, and the buffalo, losing sight of him, swam on towards the opposite shore, three miles distant, and, as was supposed, would have reached it had he not been shot by a gun from a ship lying at a little distance. The skin was presented to the governor of the Cape, who had it stuffed and placed among his collections of curiosities.

162. *Hunting the hippopotamus (fig. 35.) is thus described in the Travels of Dr. Edward Rüppel in Nubia*, 1824–5: — "The harpoon, with which the natives attack the hippopotamus, terminates in a flat oval-shaped piece of iron, three-fourths of the outer rim of which is sharpened to a very fine edge. To the upper part of this iron, one end of a long stout cord is fastened, and the other is tied to a thick piece of light wood. The hunters attack the animal either by day or by night, but they prefer daylight, as it enables them the better to escape from the assaults of their furious enemy. One part of the rope, with the shaft of the harpoon, the hunter takes in his right hand; in the left he holds the rest of the rope and the piece of wood. Thus armed, he cautiously approaches the animal when he is asleep during the day, on some small island in the river, or he looks for him at night, when the hippopotamus is likely to come out of the water to graze in the corn fields. When the huntsman is about seven paces from the beast, he throws the spear with all his might, and if he is a good marksman, the iron pierces through the thick hide, burying itself in the flesh deeper than the barbed point. The animal generally plunges into the water; and though the shaft of the harpoon may be broken, the piece of wood that is attached to the iron floats on the surface, and shows what direction he takes. There is great danger if the hippopotamus spies the huntsman before he can throw his spear; for he then springs forward with the utmost fury,

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HIPPOPOTAMUS.

and crushes him at once in his wide open mouth; an instance of which took place while we were in the country. As soon as the animal is fairly struck, the huntsmen, in their small canoes, cautiously approach the floating wood, and after fastening a strong rope to it, they hasten with the other end towards the large boat which contains their companions. The huntsmen now pull the rope, when the monster, irritated by the pain, seizes the boat with his teeth, and sometimes succeeds in crushing or overturning it. In the meantime his assailants are not idle: four or five more harpoons are plunged into him, and every effort is made to drag the beast close up to the boat, so as to give him less room to plunge about in. They then try to divide the *ligamentum jugi* with a sharp weapon, or to pierce his skull. Since the body of a full-grown hippopotamus is too bulky to be pulled out of the water without a great number of hands, they generally cut him up in the water, and bring the pieces to land. The flesh of a young hippopotamus is very good; but the full-grown ones are generally too fat. They weigh as much as four or five oxen. The hide is made into excellent whips, and will alone furnish from three hundred and fifty to five hundred pounds, which an inspection of its massive proportions would lead us to expect. No use is made of the teeth." (Vol. i. p. 68.) Mr. Cumming, in South Africa, attacked the hippopotamus with the rifle with great success; but he frequently lost the carcase, from the animal diving, or dying and sinking in the water.

Sect. VI. *The Antelopes of Africa, and the Methods of Hunting them.*

163. *The antelope family is the third of the tribe of ruminants* that have either permanent horns, or bony substances which fall off, and are again renewed. This group is marked by the prominence of the frontal bone being covered with a sheath of horn, the fibres of which continue to be increased in successional layers during life. The species are numerous, and with the exception of four of them, the males only have horns. That entertaining and instructive work, *The Menageries*, offers the following interesting particulars relative to the natural history of these animals: —"The antelopes, as well as other ruminating animals with permanent horns, are found in the Old World, and in parts of the New, but their species are never mixed together; they remain within limits, which they appear never to have passed. The facts connected with the locality of the antelope are very remarkable; the several species appear not only never to mix, but to receive no modifications from climate. Those species which are most separated in their geographical position are not those which differ the most; for the dissimilarities are the greatest and most numerous between the species of the same country, such as in the vast herds of antelopes in Southern Africa. The influence of a common climate would rather efface than perpetuate these specific differences, if they had been originally an accidental result of varieties of temperature. The races too are singularly indisposed to cross; for the species which appear the most similar bear towards each other, according to the observation of Pallas, the greatest antipathy. It is still more singular that, even in the same country, the cantonments (if we may so express it) of each species are invariably determined. Delalande has stated that, in the south of Africa, those antelopes which inhabit the plains never enter the forests, and that those of the forests never seek either the plains or the marshes — every site retains the species peculiar to it. It would appear from these facts, that the particular districts of a continent have not been stocked with antelopes by emigration, but by local creation; and it is a theory which offers one of the many arguments to show the superintending care of Providence, in thus placing each creature in the station most fitted for it. The antelopes, in these particulars, present an insurmountable difficulty to those naturalists who have endeavoured to refer specific differences to accidental causes; and who, properly perceiving the modifications which climate, domestication, and other external circumstances have produced upon various races of quadrupeds, have attempted, most unphilosophically, to extend these circumstances beyond their proper limits. Almost all the tribe of antelopes are of a gentle and social nature. In general, with the exception of many of the smaller species of Southern Africa, they live in large herds. Their sight, their hearing, and their smell, are of extreme delicacy, indeed greater than that of most other ruminating animals." (Vol. i. p. 357.)

164. *The springbok* (*Antilope Enchore* Burchell) is among the most active of this tribe, and offers, in the singularity of its habits, some particulars which cannot fail to interest the reader. These antelopes "bound to the height of ten or twelve feet, clearing at each spring from twelve to fifteen feet of ground, without apparently the slightest exertion. In performing the spring, they appear for an instant as if suspended in the air, when down come all four feet again together, and, striking the plain, away they soar again, as if about to take flight. The herd only adopt this motion for a few hundred yards, when they subside into a light elastic trot." Mr. Cumming gives a description of one of their grand migrations: — "This was, I think, the most extraordinary and striking scene, as connected with beasts of the chase, that I have ever beheld. For about two hours before the day dawned, I had been lying awake in my waggon, listening to the grunting of the bucks within two hundred yards of me. On my rising when it was clear, and looking about me, I beheld the ground to the northward of my camp actually covered with a dense living mass of

springboks, marching slowly and steadily along, extending from an opening in a long range of hills on the west, through which they continued pouring, like the flood of some great river, to a ridge about a mile to the north-east, over which they disappeared. The breadth of the ground they covered might have been somewhere about half a mile. I stood upon the forechest of my waggon for nearly two hours, lost in wonder at the novel scene which was passing before me. During this time, their vast legions continued streaming through the neck of the hills in one compact, unbroken phalanx."

165. *The springbok, or buck* (*fig.* 36.), as an object of African field sports, is also thus noticed in the work of the Rev. C. J. Latrobe, a missionary to South Africa. "The sportsmen having found the springboks which," our author says, "stood in parties of twenty or thirty together, were on the alert, endeavouring to approach near enough to make sure of their aim. But all attempts were vain; the bucks suffered them to approach within gunshot, when they set off at full speed, leaping sometimes over each other. They bounded along, in a species of dance, springing with all four feet at once from the ground, then, swiftly facing about, surveyed their pursuers. Sixteen shots were fired at them, but not in a single instance did it appear that one had been wounded." So much for the success of these modern Nimrods! Mr. Cumming made his shots tell better; and it would seem that the thinning these vast herds must be a public benefit. "They have been well and truly compared to wasting swarms of locusts. Like them, they consume every green thing in their course, laying waste vast districts in a few hours, and ruining in a single night the fruits of the farmer's toil. The course adopted by the antelopes is generally such as to bring them back to their own country by a route different from that by which they set out. Thus, their line of march sometimes forms something like a vast oval, or an extensive square, of which the diameter may be some hundred miles, and the time occupied in this migration may vary from six months to a year." A correspondent of the editor of the *Penny Magazine* adds these further particulars: — "The springbok, like the hare, conceals itself in cover during the day, and resorts to the open plain in the evening and at night, for the purpose of feeding only. The Cape antelope, in fact, perfectly resembles the hare in all its characteristics, remaining continually in its form, leaving it only to procure food, or to escape from its enemies. The bok is shot in great numbers by the Dutch boors, the sport being usually pursued on horseback, and in the heat of the day. The animal is then lying in its habitual lair, and on being disturbed by the sportsman, springs from it with a succession of bounds, than which nothing can be more beautiful or graceful. The Dutch boor is generally an unerring shot; but in case the antelope should be only wounded, the buck-dog (a species of large mongrel) is always at the heels of his master's horse, and at the report of his gun darts forward and secures the animal; it is then placed behind the saddle. The horse used in buck-shooting is the hardy and serviceable animal common to the country. Many of them are so well trained, that they stop the instant the bok gets up, but in most cases a slight check is necessary; the rein is dropped on the neck, and the horse is motionless."

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SPRINGBOK.

166. *The different species of antelopes, as the gnu* (*A. gnus*), *the nylghau* (*A. picta*), *the gazelle* (*A. doreus*), *and the cerib or harnessed antelope* (*fig.* 37.), are all favourite objects of the chase at the Cape. They are hunted by packs of dogs, and also coursed by greyhounds of superior size and strength. The gnu, or black wild ebeest, ranges in herds of from twenty to fifty, and singly, or in small troops of four or five. The old bull wild ebeests may be seen stationed at intervals throughout the plains of South Africa; when the hunter approaches, they commence whisking their long white tails in a most eccentric manner, and wheeling about in circles after each other at full speed, then perhaps fighting with violence, and finally scouring off enveloped in a cloud of dust. Other animals of this class are mentioned at p. 56. In the interior of the country, the *Bosjesman*, by astonishing perseverance in pursuit, and the fatality of his poisoned arrows, succeeds in destroying a sufficient number to supply his wants for months. The antelope family is one of the most extensive that zoology presents to our notice. The species are all ruminants, and, so far as we yet know, are all hollow-horned.

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HARNESSED ANTELOPE.

Sect. VII. *African Method of Hunting the Jackal, Ostrich, Ape, &c.*

167. *The jackal is hunted in most parts of Africa,* and wherever English settlers are found the sport assumes much of the spirit, method, and style of our fox-hunting. During Lord Charles Somerset's administration, as governor at the Cape of Good Hope, a sub-

scription pack of hounds was kept in a very creditable manner, particularly when we consider the disadvantages necessarily attendant on confined means, &c. An officer thus describes a run with them: — "At eleven o'clock we met a field of about twenty gentlemen 'togged' in scarlet, with one or two exceptions, and mounted in a manner that would not have suffered by a comparison with many English turn-outs. A very uninviting plain lay before us of great extent, covered with sand and long coarse grass, intersected by ravines of no small dimensions, which a very few minutes brought us in closer contact with. After a few false alarms, owing to the dogs running the antelope, with which the country abounds, off went a noble dog-jackal, differing very slightly from our fox, making for the Blue Berg Mountain across the flats. Whenever I am unacquainted with the country I am in, I follow in the wake of whatever person I place the most confidence in as a sportsman, and took Mr. Blair as my guide on this occasion, knowing I could not be far wrong so long as I stuck to him. A quarter of an hour convinced me of the justness of my choice, as by that time there were but five of us up with the dogs, that were going along merrily. Lord Charles Somerset was in the field to see them throw off; but, from not having seen any thing further of him, I suppose he did not mean hunting on this occasion. After a splendid chase of between thirty and forty minutes, with only two checks, they ran into him in fine style as he was getting through a hedge of aloes, inclosing the garden of a corn-boor." (*Sporting Magazine*, vol. xxiv. New Series.)

168. *Ostrich hunting is a very favourite amusement in this quarter of the globe.* The Arabians of Africa train their horses to the chasing of this bird, as we do our greyhounds to the coursing of the hare. The game is sought for on their extensive plains, and, as soon as a bird is seen, the course begins, "the horse being at first but gently galloped, so as to keep the ostrich still in sight, yet not to terrify him from the plain into the mountains. Of all known animals that make use of their legs in running, the ostrich is said to be by far the swiftest. In the chase, therefore, as soon as the bird observes himself pursued at a distance, he begins to run at first but gently, either insensible of the danger, or confident of escaping. In this situation he somewhat resembles a man at full speed; his wings, like two arms, keep working with a motion correspondent to that of his legs; and his speed would very soon carry him from the view of his pursuers, but that, like the hare, instead of going away in a direct line, he takes his course in circles, while the hunters make a smaller course within, relieve each other, meet him at unexpected turns, and keep him thus employed and followed, till, spent with fatigue, and finding all means of escape impossible, he endeavours to hide himself from the enemies he cannot avoid, and covers his head in the sand, or the first thicket he meets. Sometimes, however, he attempts to face his pursuers; and though in general the most gentle animal in nature, when driven to desperation, he defends himself with his beak, his wings, and his feet. Such is the force of his motion, that a man would be utterly unable to withstand him in the shock." If we are to place confidence in travellers' tales, the ostrich is swifter than the Arabian horse; and when the Arabs chase this bird (*fig.* 38.) they do not immediately pursue it in a straight direction, but by turning and twisting, and assisting each other, they accomplish that which, by a direct pursuit, they would vainly strive to attain. I must confess I have some difficulty in placing confidence in relations which would make us believe that the ostrich is swifter than the Arabian horse, or our English racer. During the time of Mr. Adanson's residence at Podor, a French factory on the south side of the river Niger, he says that two ostriches, which had been about two years in the factory, afforded him a sight of a very extraordinary nature. These gigantic birds though young, were nearly of the full size. "They were (he continues) so tame, that two little blacks mounted both together on the back of the larger. No sooner did he feel their weight than he began to run as fast as possible, and carried them several times round the village; and it was impossible to stop him, otherwise than by obstructing the passage. This sight pleased me so much that I wished it to be repeated; and, to try their strength, directed a full grown negro to mount the smaller, and two others the larger. This burden did not seem at all disproportioned to their strength. At first they went at a pretty sharp trot; but when they became heated a little, they expanded their wings as though to catch the wind, and moved with such fleetness, that they seemed scarcely to touch the ground. Most people have, one time or other, seen the partridge run, and consequently must know that no man is able to keep up with it; and it is easy to imagine that, if this bird had a longer step, its speed would be considerably augmented. The ostrich moves like the partridge with this advantage; and I am satisfied that those I am speaking of would have distanced the fleetest race-horses that were ever bred in England. It is true they would not hold out so long as a horse, but they would, undoubtedly, be able to go over the space in less time. I have frequently beheld this sight, which is capable of giving one an idea of the prodigious strength of the ostrich, and of showing what use it might be of, had we but the method of breaking and managing it as we do the horse." We have in our recollection an instance of a tame ostrich, kept by Admiral Aylmer, then residing at Winchelsea, in Sussex, which had its full liberty, and enacted the part of a house dog to admiration. Like the yard dog, he held beggars in detestation, and pursued them out of the grounds. When he overtook the person he pursued, which was very quickly done, his punishment was to give a kick on the back of the intruder, in many cases so forcible, as to push him or her headlong forward to their great astonishment.

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OSTRICH HUNTING.

169. *The Struthiophagi have another method of taking this bird;* they cover themselves with an ostrich's skin, and passing up an arm through the neck, thus counterfeit all the motions of this animal. By this

artifice they approach the ostrich, which becomes an easy prey. He is sometimes also taken by dogs and nets; but the most usual way is that mentioned above. When the Arabians have thus taken an ostrich, they cut its throat, and making a ligament below the opening, they shake the bird as one would rinse a barrel; then taking off the ligature, there runs out from the wound in the throat a considerable quantity of blood mixed with the fat of the animal, and this is considered as one of the greatest dainties. They next flay the bird, and of the skin, which is strong and thick, sometimes make a kind of vest, which answers the purpose of a cuirass and a buckler. Others do not kill their captive, but endeavour to tame it for the purpose of supplying those feathers which are in so great request. The inhabitants of Dara and Libya breed up whole flocks of them, and they are tamed with very little trouble. In this domestic state they are often ridden upon and used as horses. Moore assures us that at Jour he saw a man travelling upon an ostrich. (*London Encyclopædia*, vol. xxi. art. Struthio.) The cassowary is also hunted by the natives. Spilsbury, in his travels, informs us that at Bird Island, on the western coast of Africa, the governor kept several ostriches which he frequently coursed on the parade with dogs. "As soon as the bird is produced he begins dancing, and at last sets off, leaving the dogs far behind; he goes regularly to the bottom of the parade and up again, setting the dogs at defiance, whom he easily outruns with the help of his wings."

170. *Ape hunting is likewise practised here as a sport.* A traveller, who had been an eye witness of this amusement, if such it ought to be called, says, — "They are killed with great difficulty, as they are extremely expert in concealing themselves amongst the branches of the trees, where it is almost impossible to discover them. Their flesh is eaten by the blacks after being boiled; but I never could prevail on myself to taste it, from the great resemblance which these animals bear to the human species; besides, the Creoles assured me that it is detestable."

170 *a*. The *eland* and the *blesbok* are two of the principal objects of the chase in South Africa. They are both antelopes, but they differ to the greatest extent amongst their race, as to appearance and fleetness of foot. Of the *eland* Mr. Cumming states: — "This magnificent animal is by far the largest of all the antelope tribe, exceeding a large ox in size. Its flesh is most excellent, and is justly esteemed above all others. It has a peculiar sweetness, and is tender and fit for use the moment the animal is killed. The eland frequents the borders of the great Kalahari desert in herds varying from ten to a hundred. It is also generally diffused throughout all the wooded districts where I have hunted. The eland has less speed than any other variety of antelope; I have often ridden the best bull out of the herd and brought him within gunshot of my waggons, where I could more conveniently cut up and preserve the flesh. I have repeatedly seen an eland drop down dead at the end of a severe chase, owing to his plethoric habit." The *blesbok* is one of the finest of antelopes, and allowed to be the swiftest buck in Africa. "Nothing," says Mr. Cumming, "can exceed the beauty of this animal. In its manners and habits it very much resembles the springbok, which, however, it greatly exceeds in size, being as large as an English fallow-deer. Blesboks differ from springboks in the determined and invariable manner in which they scour the plains, right in the wind's eye, and also in the manner in which they carry their noses close along the ground. Throughout the greater part of the year they are very wary and difficult of approach, but more especially when the does have young ones. At that season when one herd is disturbed, and takes away up the wind, every other herd in view follows them. The *oryx* or *gemsbok*, another antelope, is an animal which is supposed to have given rise to the fable of the unicorn, from its long straight horns, when seen *en profile*, so exactly covering one another as to give it the appearance of having but one." [It may be here mentioned, in passing, that M. D'Abbadie considers that he has discovered the veritable unicorn of the ancients in Kordofan, a country adjoining the valley of the Upper Nile. The animal he mentions is said to have but a single horn, capable of being raised and depressed at pleasure, "like the guard of a carving-fork."] "The oryx possesses the erect mane, long-sweeping black tail, and general appearance of the horse, with the head and hoofs of an antelope. It is robust in its form, squarely and compactly built, and very noble in its bearing. Its height is about that of an ass, and in colour it slightly resembles that animal. The adult male measures three feet ten inches in height at the shoulder. It thrives and attains high condition in barren regions, and, burning as is the climate, it is perfectly independent of water, which I am convinced," says Cumming, "it never by any chance tastes (!). Its flesh is deservedly esteemed, and ranks next to that of the eland. Owing to the even nature of the ground which the oryx frequents, its shy and suspicious disposition, and the extreme distances from water to which it must be followed, it is never stalked or driven to an ambush like other antelopes, but is hunted on horseback, and ridden down by a long, severe, tail-on-end chase. In the whole course of my adventures with gemsbok I only remember four occasions, when mounted on the pick of my stud (which I nearly sacrificed in the attempt) that alone and unassisted I succeeded in riding the oryx to a stand-still. The plan which I adopted, and which is generally used by the boors, was to mount my light Hottentots or Bushmen on horses of great endurance, and thus, as it were, convert them into greyhounds, with which I coursed the gemsbok, as we do stags in Scotland with our rough deer-hounds. A 'tail-on-end' chase is sometimes saved in parts where the hunter, from a previous knowledge of the country, knows the course which the gemsbok will take; when, having first discovered the herd, the after-rider is directed to remain quiet until the hunter shall have proceeded by a wide semicircular course some miles to the windward of the herd, which being accomplished the Hottentot gives the troop a tremendous burst towards his master, who, by riding hard for their line generally manages to get within easy shot as the panting herd strains past him." (*A Hunter's Life in South Africa*, pp. 99—101.) Mr. Cumming, whose vigour and pertinacity in the chase has been seldom, if ever, equalled, contrived to "bag," as he terms it, several of these noble animals; and he relates the occurrences in a trite and interesting manner. The same mighty hunter "bagged," also, elephants and rhinoceroses by the score; he details such exploits often in fewer words than many a cockney sportsman would have devoted to chronicling the shooting of a rabbit, and latterly he seems to have thought no more of the achievement. "*Veni, vidi, vici*," ought to be the motto of his extraordinary book. One of the animals met with and shot by Mr. Cumming was the *serolomootlooque*, or "bush-buck of the Limpopo," a river of South-eastern Africa. This animal, reported by him to have been previously "utterly unknown to sportsmen or naturalists," was named by Mr. Cumming *Antelopus Ronaleynei*, from the patronymic of the discoverer, who has, he tells us, written out a systematic description of it for the benefit of naturalists. The sable antelope, a rare and beautiful species, the klipspringer, koodoo, pallah, sayssaby, &c. are other animals of the chase belonging to the same region; but these our limits forbid us to describe. Herds of ostriches, quaggas, zebras, &c., traverse also the little explored territory of Southern Africa, beyond the boundaries of the European settlements,

Sect. VIII. *African Horse Racing, &c.*

171. *Horse racing is not without its votaries in Africa.* At Kiama, we are informed in *Lander's Journal*, periodical exhibitions of this kind take place on the anniversary of the *Bebun Sàlah*. "Previous to its commencement, the king, with his principal attendants, rode slowly round the town. A hint from the chief induced us to attend the course with our pistols, to salute him as he rode by. The race-course was bounded on the north by low granite hills, on the south by a forest, and on the east and west by tall shady trees, among which were the habitations of the people. When we arrived, the king had not made his appearance on the course. The chief's wives and younger children sat near us in a

group by themselves, and were distinguished from their companions by their superior dress." After some further description, it is stated, " Preparations in the meantime had been going on for the race; and the horses with their riders made their appearance. The men were dressed in caps, and loose robes, and trowsers of every colour; boots of red morocco leather, and turbans of white and blue cotton. The horses were gaily caparisoned; strings of little brass bells covered their heads; their breasts were ornamented with bright red cloth and tassels of silk and cotton; a large quilted pad of neatly embroidered patchwork was placed under the saddle of each; and little charms, enclosed in red and yellow cloth, were attached to the bridle with bits of tinsel. The Arab saddle and stirrup were in common use, and the whole group presented an imposing appearance. The signal for starting was made, and the impatient animals sprang forward, and set off at full gallop. The race was well contested, and terminated only by the horses being fatigued and out of breath; but though every one was emulous to outstrip his companion, honour and fame were the only reward of the competitors. A few naked boys, on ponies without saddles, then rode over the course, after which the second and last heat commenced. This was not by any means so good as the first, owing to the greater anxiety which the horsemen evinced to display their skill in the use of the spear and the management of their animals. All terminated without the slightest accident, and the king's dismounting was a signal for the people to disperse."

172. *African coursing is thus noticed by Arrian:* —" In Africa," he observes, " there is a mode of coursing on Libyan horses, called *nomades*, on which the mounted sportsmen catch not only red and roe deer (for these are taken with little effort, and the horses are not esteemed good in consequence), but also wild asses, which excel in speed and power of holding out for the greatest length of course."

173. *The African methods of fishing* partake of the general character of their field sports. They are rude, but not without art. The Bornoese plait very strong nets from a perennial plant, called *kalimboa*, and having placed weights on one side, consisting of sand bags, they proceed to use them in the following manner:—" The fisherman launches himself into the stream astride a long stem of bamboo, to each end of which is affixed a large gourd sufficient to keep the man and his apparatus buoyant. Dropping his net he now floats with it down the stream, until it is expanded, he then faces about and drags it in the contrary direction, until the motion of the net gives him notice of having enclosed a fish. He now raises up the net until he perceives his prey, which, having first stunned it by a blow with a club, he secures within another gourd, floating by his side, which he uncloses for the purpose. Having filled this vegetable fish-pot he paddles to shore."

174. *The field sports of Barbary*, although of a masculine character, will not detain us long; but to pass over this northern portion of Africa without notice, would be an insult to a breed of horses little inferior to those of Arabia. The *barb*, under the especial culture of the Moors of Barbary and Morocco, was probably the first agent in improving our own breed of horses; and if further experience proved the advantage of lightening the figure, and adding to the spirit and agility by the Arab blood, it nevertheless leaves the immense benefits derived to be shared between them. (See *Natural History of the Horse*, infrà.) Learning and science are at a low ebb in Barbary and Morocco, but manly sports and violent exercises rank high; and the natives here being furnished with an animal so well adapted to second their love of hunting and military spectacle, it is not to be wondered at that their games and exhibitions are mostly conducted on horseback, and usually mixed with the parade of attack and defence. Horsemanship indeed appears to be their pride and glory; and to excel in it seems their constant aim. They almost live on the backs of their barbs, and are ever seen in mimic fight (*fig.* 39.); in which scenes the horses seem to be a

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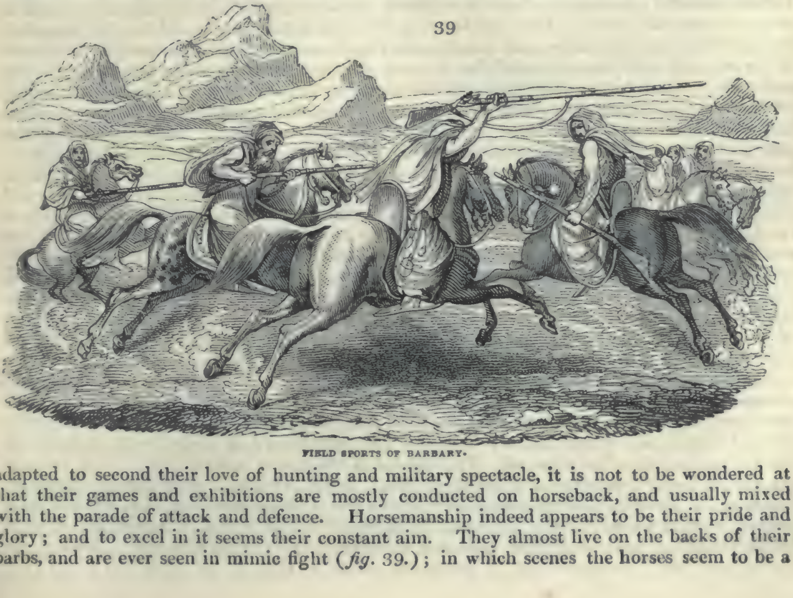

FIELD SPORTS OF BARBARY.

much delighted as their masters. It is on their barbs that the ostrich, deer, and all the swift African animals are hunted; and if the *lasso* of South America is not so common here as in that continent, it is yet on occasions effectively thrown by the Moors also.

Chap. III.

The Progress of Field Sports in America.

175. *By the discovery of the New World*, we were presented with man not wholly in his savage state, but in the practice of many of the domestic arts of life for his comfort, and of many athletic exercises for his amusement, which are sure marks of independence, cultivation, and ingenuity. Unlike the Africans of the southern borders, the American Indian was strong in his own resources, and waged war with the wild animals on more equal terms than the African; for he conquered them as well by his artifices as by his strength, and as far as he chose he occupied their haunts. When the Europeans appeared in America, although their presence varied and improved the methods of the chase, yet the conquerors were constrained to admire the enterprise and ingenuity of the natives, who effected with the bow feats which the fire arms of those times often failed to accomplish. The conquest of America, however, eventually introduced the full use of fire arms; and, by so doing, greatly enlarged the sphere of predatory action, and gave a new impetus to the pursuit of animals generally. Nor could the direction of the future sporting enterprises of the Americans have fallen into better hands than those of the new comers, whose early initiation in the pursuit of the game of their own country led them to enter with ardour into the chase of the more diversified objects they met with here. Perhaps it would not be easy to find a more striking instance of the exertions which the American will make to enjoy his favourite diversion than the following: — " A friend of mine," says a writer, " startled me a little by stating that he occasionally took the *same* horse *ninety miles* to cover, and after a day's hunting brought him home a like distance. ' Unless you hunt by steam,' I exclaimed, ' it is impossible!' ' Why,' says he, ' that's the whole secret. I go with my horse on board the steamer at Quebec, and reach Trois Rivières in good time to breakfast, hunt with my father-in-law, who keeps a pack, and return to Quebec by the afternoon boat.' " (*Ferguson's Visit to the United States and Canada.*) As sportsmen the Americans certainly do not disgrace their British extraction. It is not uncommon for one of them to wait for hours behind a tree for the chance of a shot at a deer.

Sect. I. *The Zoology of America.*

176. *The zoology of a country like America*, vast in its extent, and diversified in its character, may be expected to present subjects extremely varied. It was a favourite theory of Buffon, that the quadrupeds of the New World were greatly inferior in size and weight to those of the Old World. This opinion was however tested, and satisfactorily disproved, by Dr. Williams. The indigenous quadrupeds, bipeds, and reptiles of America are numerous in the extreme, and present specialities in form and structure extremely interesting to the naturalist. Their habits of offence and defence being in most of them considerable, and in some of them singular, has made them objects of unceasing pursuit, both by native sportsmen and travellers, lured there by their nature and number. Notwithstanding this plenty of native animals, America has received important accessions from other continents; in proof of which we have only to call to the recollection of the reader, that before its discovery by Columbus, the only beasts of burden used by its inhabitants were the *lama* and *vicunna*, well known as diminutive types of the camel. Certain herbivorous animals, as the bison, large-horned sheep, and several varieties of the deer tribe, existed in plenty; but the horse and ass, European oxen, sheep, goats, and swine, were unknown there. The arrival of these on the American shores, therefore, greatly increased the conveniences of these people, and enabled this quarter to rank in zoological stores with Europe, Asia, and Africa. Not but that even without these valuable accessions America teemed with animal life; for of 1346 mammalia, noted by zoologists, 537 are found in America. Asia, on the contrary, the cradle of man, and the seat of early greatness, owns 420 only; Africa, 300; Europe, 180; and Australia, 80. Among the mammals, or beasts, of America, the number of *Edentata*, or toothless (at least as regards the canine teeth) are particularly numerous and characteristic, as are the sloths, armadilloes, &c.; while the *pachydermatous*, or thick-skinned tribes, are proportionably scarce. The ornithology of America is rich in the number and power of its *Rapaces*. The condor of the Andes and the king of the vultures are natives here. Parrots exist in great numbers; and if Asia, as already noticed elsewhere, has supplied us with our pheasants and our domestic cock and hen, our turkeys were derived from America; and if, as the sacred page informs us, it rained quails in Egypt, it blows clouds of pigeons, almost sufficient to obscure the sky, in America. Among the

American reptiles, alligators and serpents, of vast size and deadly powers, abound. The turtle however, equally numerous, is a boon both to the natives and to us, who receive it yearly in great numbers. In the vast plains of the country are seen the effects of dissemination by the visits of the early discoverers; for troops of wild horses are to be met with, both in the Pampas of South America and the Arkansas of North America, as well as innumerable herds of wild oxen, originally borrowed from us; both of which range in unbounded freedom in the savannahs of Brazil, Buenos Ayres, and Columbia. From the wild horned cattle, the native hunters annually reap the enormous number of eight hundred thousand hides, and a proportionate quantity of tallow; all which are shipped to European ports.

177. *The profession of a hunter in America* requires excellent horsemanship, consummate skill in throwing the lasso, and equal dexterity in the use of the pithing instrument. In the important occupation of procuring hides for exportation, it is necessary that a number of mounted hunters thus qualified should unite. "These arrange themselves in two lines, forming an angle; they then separate a small troop of cattle from the general herd, and press them in upon the right and left, whilst the hunter, who forms the apex of the angle, with a small semicircular adze, which he carries for that purpose, houghs each beast in succession as he comes up with it, until the whole troop are disabled. During all this operation, the hunters are kept at a sharp round gallop; but as soon as they have thus secured a sufficient number of beasts, they return upon their steps, preceded by the same individual who formed the point of the angle before, and whose present duty it is to pith the animals, which he does in a most dexterous manner by a single stroke of a small dagger, whilst his companions who follow him are engaged in flaying the carcass and separating the tallow. When, however, a single beast is wanted for the purposes of the table, it is more usually procured by means of the lasso, which is nothing more than a noose at the end of a long coil of rope, but which, from the unerring certainty with which it is thrown, becomes a most formidable weapon in the hands of the South Americans. The other end of the rope is secured to the saddle, or girths, of the rider, and in this way he will gallop for miles, dragging a wild ox behind him." The traffic in ox hides is the grand occupation of the native hunter; and we are told that the vast troop of wild horses are only of importance to the American as furnishing him with the means of pursuing cattle, or of transporting travellers across the vast American plains. When the latter is the object, "the traveller and his guide set off on horseback, driving a wild troop of these animals, at full gallop, before them: when one beast is exhausted, another is secured by means of the lasso, the saddle is changed, the rider mounts and continues his journey, repeating the same operation, as often as requisite, till he arrives at his station for the night; here he obtains a fresh troop, and in this manner will travel for many days in succession, at the rate of a hundred or a hundred and twenty miles a day. Much curious information concerning this mode of travelling, as well as on other subjects connected with South America, may be found in Captain Head's *Rough Notes of a Journey across the Pampas*, and also in Temple's *Peru*. Azara informs us, that the Indians of the Pampas are very partial to horse-flesh, and Mr. Ross Cox, in his late valuable account of the Columbia River, assures us that not the Indians alone, but likewise the European fur-traders, who annually ascend that river, depend for their subsistence chiefly upon horse-flesh; and that, to procure 'horses for the kettle,' they are often obliged to give an extravagant price, and sometimes even to sacrifice the animals which are necessary for the transport of their merchandise." (See America, *Penny Cyclopædia*, vol. i. p. 442.)

178. *The fur-bearing animals of America are very numerous*, and it is to gratify our rage for this beautiful and useful product that the Americans have become the most expert and enterprising sportsmen in the world. Of bears they have several species, as the *grizzly bear* (*Ursus ferox*); the *spectacled bear* (*U. ornatus*); the *cinnamon bear* of Hudson's Bay, which is said to be a variety of the black bear, is somewhat novel to our menageries; the *black bear* (*U. Americanus, fig.* 40.); the *common bear* (*U. arctos*); and the *white* or *polar bear* (*U. maritimus*); all of which yield their ample hides to the successful American hunters, together with the lynx, wolf, fox, the beaver, racoon, otter, weasel, ermine, pine, marten, wolverine, lemming, marmot, squirrel, &c. With these temptations before the American natives, the chase after wild animals is made the business, more than the amusement, of life; and yet even here it is known, that many of the poor hunters would not change situations with the persons for whom they thus toil. Northern America furnishes four distinct varieties of hares also—the American (so called), the prairie, the little chief hare, and the polar hare; which Mr. Swainson, however, informs us is common to both continents. In the arctic division the elk, known also as the moose, the musk ox so well described by Captain Parry, and the reindeer, called here the *caribou*, are seen; and although they may be said to be, in the words of Mr. Swainson, "the only species

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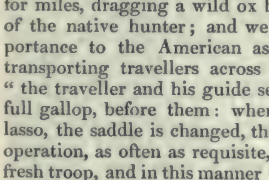

AMERICAN BEAR.

found in other continents, both in fact are arctic animals; while the *wapiti*, two races of the black-tailed deer, the long-tailed deer, and the prong-horned antelope, are known only in America."

179. *The zoology of North America*, the British sportsman will find to approximate much more nearly to that of his own quarter of the globe than to South America; for a great portion of North America is situated under similar parallels, and enjoys a climate and soil similar to the corresponding parts of Europe and of Asia. It has been stated that the opposing continents of Asia and America approach so near at Behring's Straits, that some beasts which swim well might pass from one shore to the other. Be that as it may, we find that nature presents a certain harmony in her works, and that her living forms are constituted from certain types, corresponding with the parallels under which they are found. It is man, however, who regulates in a great degree the domestication of animals wherever he settles. Thus the bison, which formerly haunted the whole sea coast of North America, is now only met with beyond the Ohio and Mississipi; and many of the *Carnivora* have their places usurped by domesticated beasts of more general use. As indigenous quadrupeds of this country, we must not forget to notice the varieties of sheep and goats still running wild here.

180. *South America,* however, is the portion of the New World which is most favourable to the development of animal forms. The fertility of a country, whose vast plains are at all seasons watered by innumerable springs, furnished by the snows of the far distant mountains, is to be expected; for being thus moistened and cooled, vegetation has few drawbacks to contend with, but is seen here to luxuriate in the forms of plants innumerable, underwood almost impenetrable, and tall trees which overshadow the whole. Mr. Swainson bears us out in the correctness of this description, particularly as regards Brazil, which itself occupies a third of the whole continent of South America, and which is nearly covered with vegetation; and even when the virgin forests shall have been tilled for the purposes of artificial cultivation, there will yet remain sufficient luxuriant cover in a vast portion of this great continent to furnish food and shelter for those objects of the chase which it is the delight of the sportsman to follow. We have however to regret, that our knowledge of American zoology is yet very circumscribed; the celebrated Baron Humboldt traversed the whole of Chili and Peru, but other scientific inquiries having engaged his attention, he is unfortunately almost silent on this subject. Hernandez affects to give us the names of the animals of Mexico; but as he only does it in the language of the country, his list is of little value. The information of G. H. Ward, Esq., M.P., in his valuable work on Mexico, is much more illustrative of its zoology, though this subject did not form the professed object of the ingenious writer's book. Mr. Ward notices the herds of deer on the table-land; and from him we learn that the wolf is there taken with the lasso, which affords very admirable sport. A species of fox, or *wild dog*, he also mentions, which is pursued by the natives with ardour and with success, vast numbers being killed by them every season. To Mr. Swainson, in his *Geography and Classification of Animals*, we are also greatly indebted for what is known of the zoology of this country.

181. "*The wild animals to be met with in the province of Texas*," says this gentleman, "are the buffalo, or bison, known in England as the bonassus, and which enters Texas from the north, in vast herds, during the winter; the panther, leopard, bear, otter, beaver, antelope, deer, racoon, black fox, &c. The horses, descended from the Spanish Arabians, have peopled the rich plains of Texas with droves innumerable. These wild horses are often large or heavy, but show blood, and if caught young are very docile; although, whenever an opportunity offers, they are apt to rejoin their wild brethren. It is difficult to ascertain what animals are here called 'panthers and leopards,' since these names strictly belong to African quadrupeds; nor are we better informed on the determinate species of antelopes or deer which are peculiar to Mexico."

182. *The lama* (*Camelus Glama* Linn., *fig.* 41.) in this country supplies the place of the camel, of which he is in every respect but size a very close type. The camel, however, owns two species only, whereas the lamas are divided into several, all of which bear a general resemblance to the camel type. Their aspect is, notwithstanding, more lively, their backs not laden with hunches; and, instead of a curved neck, their head is carried more perpendicularly. Their feet also differ somewhat from those of the camel; and they want the canine teeth which exist in the camel's lower jaw. Before the introduction of mules into this country, Bewick states that the lamas were used to plough with, and to this day they are employed as beasts of burden. The *guanaco*, the *paco* or *alpaca*, the *vicunna*, are also lama varieties, none of which reach to a greater height than four feet. The Americans hunt the wild lamas, of each variety, with dogs, and lie in wait for them in the passes,

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AMERICAN LAMA.

when they are shot by the rifles of these unerring marksmen. Previous to their expertness in the use of fire arms, the lamas appear to have been taken "by stretching ropes, to which bundles of feathers were attached, across the passes of the valleys below their abodes, and driving them down in the required direction, till they came upon these objects, when (similar to the fallow deer of Europe) the herd would stop in terror at the fluttering of the feathers, and wait to be slain or noosed by the lasso, or even taken by the hand, unless an alpaca were among them, who, not intimidated by this contrivance, would leap over, and then the whole would instantly follow its example." (*Animal Kingdom*, vol. iv. p. 59.)

183. *In many parts of tropical America the sportsmen* are much impeded in their pursuit of game by the close interlacings of the *cacti*, *bromeliæ*, and other spinous plants: such are the Catinga woods of the Brazilians; and it is easy to suppose what must be the toil of a hunter in attempting to make his way through so dense a mass, pointed with thorns of immense magnitude, and covering probably serpents which strike with deadly effect, or concealing a panther or leopard. It is in such localities, when surmounted by tall trees, that the varieties of the Brazilian monkey are found, residing principally in trees. They have almost all of them tails of such strength and prehensility, that they can hang by them alone, and thus swing from bough to bough, using all the feet as agents of capture, either of fruit or of such insects as are within their reach. In these acts the arrow or the rifle of some native sportsman probably brings the pendent animal to the ground. To equalise the waste and the supply, which we may observe to be one of the most fundamental principles in nature, the vast glut of insects of this country is kept down, not by monkeys, nor by birds alone, but also by the numbers and the variety of bats, both of which are here very great. Some of these are of the vampire kind, and greatly weaken the cattle by sucking their blood. The armadillo is also hunted and eaten by the South Americans, who are said to be extremely fond of its flesh. The *capibara* (*Hydrocœrus Capybara*, *fig.* 42.), a kind of monstrous Guinea pig, of three feet in length, and web-footed, is equally sought for, being hunted for its flesh, which resembles young pork in delicacy of colour and flavour.

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CAPIBARA.

184. *As birds common to arctic and British America*, Mr. Swainson notes the golden eagle, white-headed eagle, osprey, peregrine falcon, gerfalcon, merlin, goshawk, buzzard, hen harrier, and four varieties of owl. The Californian, the turkey, and the black vulture, the little rusty-coloured falcon, pigeon hawk, slate-coloured hawk, red-tailed buzzard, great cinereous arctic horned owl, little American owl, and the hawk owl belong exclusively to America. The waterfowl here are many of them common to us also. Many others migrate from the one country to the other as occasion suits.

185. *In temperate America are found many of the rapacious birds of both the arctic and the British American countries.* The American ostrich is smaller than the African, and is distinguished by having three perfect toes on each foot. Bustards are not found here, but wild turkeys are common; and, as we shall have further occasion to notice, they afford excellent sport. Of grouse, the ruffed, known in America as the pheasant, and the pinnated, so called from two tuffs of pointed neck feathers, are sporting objects of some importance, see p. 70. In the lakes of Mexico, the sportsman meets with wildfowl, not common in the northern states, as the *jacanas*, or spur-winged water-hens, and several varieties of duck, both large and small. In fact, nature in these delightful regions appears to revel in the multiplicity and beauty of her living forms.

Sect. II. *Field Sports of North America.*

186. *In the northern parts of America, the pursuit of animals constitutes one of the principal employments of the natives.* Along the borders of the great lakes, an ample store of provision presents itself for the inhabitants in the vast quantities of fish and wildfowl, which are taken by them in various ways. Such fowls as are now shot used to be decoyed by different stratagems, among which was that of the floating pots or calibashes, already mentioned. Another method practised, was that of placing hooks, baited with some favourite fish, which being swallowed detained them captive. Nets and springs were also ingeniously constructed and successfully set. But many of these early methods have fallen almost into disuse, by the universal adoption of the fowling-piece; in the use of which the Americans yield to none as marksmen, as the following instance among many will prove:— "It appears, in the *United States' Gazette*, that Major G. W. Collamer, of Burre, shot an apple from the bare head of Mr. H. Ingram, at the distance of twenty-seven yards, with a rifle. Mr. Collamer then took his turn, and Ingram, at the same distance, shot an apple from his head. It was done in the presence of a number of respectable gentlemen, who, after fruitless attempts to stop the parties, had the satisfaction to see them come off in safety. The apples were so handsomely cut by the ball, that the juice and pomace remained in considerable quantities on the hair of their heads."

Subsect. 1. *The Chase of the Bison.*

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BISON.

187. *The American bison* (*Bos Bison* Linn., *fig.* 43.) is an animal of vast size and strength, and of a most savage nature. The humped ox, as a group, is widely diffused, but the members differ considerably in the several countries which it frequents for pasture. Bewick considers its specific characters to be derived from the immense lump between its shoulders, "almost as high as that of a camel." "He has," continues Bewick "a long shaggy mane, which forms a kind of beard under his chin; his eyes are fierce, his forehead large, and his horns extremely wide. It is dangerous to pursue him, except in forests abounding with trees large enough to conceal the hunters. He is generally taken in pits covered with branches of trees and grass, on the opposite side of which the hunters tempt the animal to pursue them, and the enraged creature running towards them, falls into the trap prepared for it, and is then overpowered and slain." It may however be observed on the characters of the bison, that a more marked *specific* distinction between him and the other members of the taurine group than that noted by Bewick, is to be found in the numbers of the ribs. The common ox, as is well known, has thirteen pairs; the auroch has fourteen, but in the bison there are fifteen; the supplementary ribs in the auroch and bison being attached to the anterior lumbar vertebræ, which thus become dorsal in their functions. The bisons are common from Lake Winnipeg, to the Rocky Mountains, in lat. 62° N., and from Hudson's Bay to Louisiana and the frontiers of Mexico. The more southerly their situation the larger is their size and the greater their number. Modern American travellers, and particularly Captains Lewis and Clarke, and Dr. James, bear frequent testimony to the almost incredible numbers in which they assemble on the banks of the Missouri. "Such was the multitude of these animals," say the former gentlemen, "that although the river, including an island over which they passed, was a mile in length, the herd stretched, as thick as they could swim, completely from one side to the other." And again, "if it be not impossible to calculate the moving multitude which darkened the whole plains, we are convinced that twenty thousand would be no exaggerated number." Dr. James tells us that, "in the middle of the day, countless thousands of them were seen coming in from every quarter to the stagnant pools;" their paths, as he informs us elsewhere, being "as frequent and almost as conspicuous as the roads in the most populous parts of the United States."

188. "*The American male bison*, when at its full size, is said to weigh two thousand pounds, though twelve or fourteen hundred-weight is considered a good weight in the fur countries. Dr. Richardson gives eight feet and a half as its length exclusive of the tail, which is twenty inches, and upwards of six feet as its height at the forequarters. The head is very large, and carried low; the eyes are small black, and piercing; the horns are short, small, sharp, set far apart, for the forehead is very broad, and directed outwards and backwards, so as to be nearly erect, with a slight curve towards the outward pointing tips. The hump is not a mere lump of fatty secretion like that of the zebu, but consists exclusively of a deposit of fat, which varies much in quantity, of the strong muscles attached to the highly-developed spinous processes of the last cervical and first dorsal vertebræ, forming fit machinery for the support and movement of the enormous head. The chest is broad, and the legs are strong, the hind parts are narrow, and have a comparatively weak appearance. The tail is clothed with short fur-like hair, with a long, straight, coarse, blackish brown tuft at the end. In winter, the whole body is covered with long shaggy hair, which in summer falls off, leaving the blackish wrinkled skin exposed, except on the forehead, hump, forequarters, under jaw, and throat, where the hair is very long and shaggy, and mixed with much wool. Catesby observes that, "on the forehead of a bull the hair is a foot long, thick, frizzled, and of a dusky black colour, that the length of this hair, hanging over their eyes, impedes their flight, and is frequently the cause of their destruction, but that this obstruction of sight is in some measure counterbalanced by their good noses, which are no small safeguard to them. A bull (says he) in summer, with his body bare, and his head muffled with long hair, makes a very formidable appearance. In summer the general colour of the hair is between dark umber and liver brown, and lustrous. The tips of the hair, as it lengthens in winter, are paler, and before it is shed in summer, much of it becomes of a pale, dull, yellowish brown. In the female the head is smaller, and the hair on the fore parts is not so long as in the male,"

189. *Bison hunting* is thus described by Mr. James, who had travelled among the Rocky mountains: — "The Omawhaw Indians, living on the lower Missouri, hunt and slay bisons in great numbers for their winter food. The hunters, after making the signal for bisons, to induce the people to halt and encamp, return as expeditiously as possible, and on their approach are received with some ceremony. The chiefs and magi are seated in front of their people puffing smoke from their pipes, and thanking the 'Master of Life,' with such expressions as *How-wa-con-da* (thanks, Master of Life!) The hunters draw near to the chiefs and magi; and, in a low tone of voice, inform them of the discovery of bisons. They are questioned as to the number, and reply by holding up to the view some small sticks in a horizontal position, and compare one herd at a stated distance with this stick, and another with that, &c. It is then the business of some old man, or crier, to harangue the people, informing them of the discovery, requesting the squaws to keep in good heart, telling them they have endured many hardships with fortitude, that there is now a termination to

their difficulties for the present, and that on the morrow the men will go in pursuit of the bisons, and without doubt bring them plenty of meat. On all occasions of public rejoicings, festivals, dances, or general hunts, a certain number of resolute warriors are previously appointed to preserve order and keep the peace. In token of their office they paint themselves entirely black, usually wear the *crow*, and arm themselves with a whip or war-club, with which they punish on the spot those who misbehave, and are at once both judges and executioners. Thus, at bison-hunts, they knock down or flog those whose manœuvres tend to frighten the game before all are ready, or previously to their having arrived at the proper point, from which to sally forth upon them. Four or five such officers, or soldiers, are appointed at a council of the chiefs, held in the evening, to preserve order amongst the hunters for the succeeding day. On the following morning all the men, excepting the superannuated, depart early in pursuit of the favourite game. They are generally mounted and armed with bows and arrows. The soldiers of the day accompany the rapidly-moving cavalcade on foot, armed with war-clubs, and the whole are preceded by a footman bearing a pipe. On coming in sight of the herd, the hunters talk kindly to their horses, applying to them the endearing names of father, brother, uncle, &c.; they petition them not to fear the bisons, but to run well and keep close to them, but at the same time to avoid being gored. The party having approached as near the herd as they suppose the animals will permit without taking alarm, they halt to give the pipe-bearer an opportunity to perform the ceremony of smoking, which is considered necessary to their success. He lights his pipe, and remains a short time with his head inclined, and the stem of the pipe extended towards the herd. He then smokes, and puffs the smoke towards the bisons, towards the heavens and the earth, and finally to the cardinal points successively. These last they distinguish by the terms *sunrise*, *sunset*, *cold country*, and *warm country*, or they designate them collectively by the phrase of the *four winds*. The ceremony of smoking being performed, the word for starting is given, *ongpatonga*. They immediately separate into two bands, who pass in full speed to the right and left, and perform a considerable circuit, with the object of enclosing the herd at lengthened intervals between them. They then close in upon the animals, and each man endeavours to kill as many of them as opportunity permits. It is upon this occasion that the North American Indians display their horsemanship and dexterity in archery. Whilst in full run, they discharge the arrow with an aim of so much certainty, that it usually penetrates the body of the animal behind the shoulder. If it should not strike here, or should not bury itself so deeply as they wish, they are often known to ride up to the enraged animal, and withdraw it. They observe the direction and depth to which the arrow enters, in order to ascertain whether or not the wound is mortal, of which they can judge with a considerable degree of exactness. When a death-wound is inflicted, the hunter raises a shout of exultation to prevent others from pursuing the individual of which he considers himself certain. He then passes in chase of another, and so on, until his quiver is exhausted, or the game has passed beyond his further pursuit. The force of the arrow, when discharged by a dexterous and athletic Indian, is very great, and we were even credibly informed that, under favourable circumstances, it has been known to pass entirely through the body of a bison, and actually to fly some distance, or fall to the ground on the opposite side of the animal. Notwithstanding the apparent confusion of this engagement, and that the same animal is sometimes feathered by arrows from different archers before he is dispatched, or considered mortally wounded, yet as each man knows his own arrows from all others, and can also estimate the nature of the wound, whether it would produce a speedy death to the animal, quarrels respecting right of property in the prey seldom occur, and it is consigned to the more fortunate individual whose weapon penetrated the most vital part. A fleet horse, well trained to the hunt, runs at the proper distance with the reins thrown upon his neck, parallel with the bison, turns as he turns, and does not cease to exert his speed until the shoulder of the animal is presented, and the fatal arrow is planted there. He then complies with the motion of his rider, who leans to one side, in order to direct his course to another bison. Such horses as these are reserved by their owners exclusively for the chase, and are but rarely subjected to the drudgery of carrying burdens. When the herd has escaped, and those that are only wounded or disabled are secured, the hunters proceed to slay and cut up the slain."

190. *The lamented Sir John Franklin gives the following information*, after stating that the Stone Indians are so expert with the bow and arrow that they can strike a very small object at a considerable distance, and shoot with sufficient force to pierce through the body of a buffalo when near, he thus describes a buffalo or bison pound—" The buffalo pound was a fenced circular space, of about a hundred yards in diameter the entrance was banked up with snow, to a sufficient height, to prevent the retreat of the animals that once have entered. For about a mile on each side of the road leading to the pound, stakes were driven into the ground at nearly equal distances of about twenty yards; these were intended to represent men, and to deter the animals from attempting to break out on either side. When fifty or sixty yards from the pound, branches of trees were placed between these stakes, to screen the Indians, who lie down behind them to wait the approach of the buffalo. The principal dexterity in this species of chase is shown by the horsemen, who have to manœuvre round the herd in the plains, so as to urge them to enter the roadway, which is about a quarter of a mile broad. When this has been accomplished, they raise loud shouts, and pressing close upon the animals, so terrify them that they rush heedlessly forward towards the snare. When they have advanced as

far as the men who are lying in ambush, they also rise, and increase the consternation by violent shouting and firing guns. The affrighted beasts, having no alternative, run directly to the pound, where they are quickly dispatched, either with an arrow or gun. There was a tree in the centre of the pound, on which the Indians had hung strips of buffalo flesh and pieces of cloth, as tributary or grateful offerings to the Great Master of Life; and we were told that they occasionally placed a man in the tree to sing to the presiding spirit, as the buffaloes are advancing, who must keep his station until the whole that have entered are killed."

191. *Dr. Richardson in his Fauna Borealis Americana observes,* that "The bisons are less wary when they are assembled together in numbers, and that they will then often blindly follow their leaders, regardless of, or trampling down, the hunters posted in their way." He further states that, though the gait of these animals may appear heavy and awkward, they will have no great difficulty in overtaking the fleetest runner, and he gives the following account of the determined violence with which a wounded bison assails its enemy: — "While I resided at Carlton House," writes Dr. Richardson, "an accident of this kind occurred. Mr. Finnan M'Donald, one of the Hudson's Bay Company's clerks, was descending the Saskatchewan in a boat, and one evening having pitched his tent for the night, he went out in the dusk to look for game. It had become nearly dark when he fired at a bison-bull, which was galloping over a small eminence, and as he was hastening forward to see if his shot had taken effect, the wounded beast made a rush at him. He had the presence of mind to seize the animal by the long hair on its forehead, as it struck him on the side with its horn, and being a remarkably tall and powerful man, a struggle ensued, which continued until his wrist was severely sprained, and his arm was rendered powerless; he then fell, and after receiving two or three blows, became senseless. Shortly afterwards he was found by his companions lying bathed in blood, being gored in several places, and the bison was crouched beside him, apparently waiting to renew the attack, had he shown any signs of life. Mr. M'Donald recovered from the immediate effects of the injuries he had received, but died a few months afterwards." Many other instances might be mentioned of the tenaciousness with which this animal pursues its revenge; and I have been told of a hunter having been detained for many hours in a tree by an old bull, which had taken its post below to watch him. When it contends with a dog, it strikes violently with its four feet, and in that way proves more than a match for an English bull-dog. Our limits forbid our adding much other matter, both instructive and interesting, furnished by naturalists and travellers, but a reference to the article BISON, in the *Penny Magazine*, will supply our forced deficiency. There the comparative anatomy of the animal is also given, and is illustrated by several excellent sketches, which together form a subject well worthy the reader's attention.

192. *In Canada bison hunting is thus conducted:* — "The hunters commence their operations by setting fire to the grass, which, at certain seasons, is very long and dry. As the fire goes on, they advance, closing their ranks as they proceed. The animals, alarmed by the light, gallop confusedly about, till they are hemmed in so close that frequently not a single beast escapes. In Louisiana the men mount on horseback, each with a sharp crescent-pointed spear in his hand. They approach with the wind, and as soon as the animals smell them, they instantly make off; but the sight of the horses moderates their fear, and the majority of them, from their luxuriant feeding, are, at certain times of the year, so fat and unwieldly, as easily to be enticed to slacken their pace. As soon as the men overtake them, they endeavour to strike the crescent just above the ham, in such a manner as to cut through the tendons, and thus render them an easy prey." The number of these animals, in the early period of the settlement of the United States, has been already noticed; it was indeed such that they were hunted merely for their tongues: but they are now become extremely scarce in all populous neighbourhoods; and are at the present time only to be met with, in any abundance, in the western territories.

SUBSECT. 2. *American Deer Hunting.*

193. *The moose deer* (*Cervus alces* Linn.) is the largest species of its whole genus. Mr. Griffith describes it as "being higher at the shoulders than the horse; its horns weigh sometimes near fifty pounds. Accordingly, to bear this heavy weight, its neck is short and strong, taking away much of the elegance of proportion, so generally predominant in the deer. It is, however, the aggregate of his appearance which produces this effect (*fig.* 44.); for when the proportions of its structure are considered in detail, they certainly will seem destitute of that harmony of parts, which in the imagination produces the feeling of beauty. The head, measuring above two feet in length, is narrow and clumsily shaped by the swelling upon the upper part of the nose and nostrils; the eye is proportionably small and sunk; the ears long, hairy, and asinine; the neck and withers are surmounted by a heavy mane, and

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MOOSE DEER.

the throat furnished with long coarse hair, and in younger specimens encumbered with a pendulous gland; these give altogether an uncouth character to this part of the animal. Its body, however, is round, compact, and short; the tail not more than four inches long, and the legs, though very long, are remarkably clean and firm. This length of limbs and the overhanging lips caused the ancients to fancy that it grazed walking backwards. The hair of the animal is coarse and angular, breaking if bent. The moose deer inhabits northern latitudes; in Europe between the fifty-third and sixty-fifth degrees, making a part of Prussia, Poland, Sweden, Norway, Finland, Lapland, and Russia. In Asia it is found further south, from the thirty-fifth to beyond the fiftieth degree, spreading over Tartary, and abounding in Japan. In America it resides between the forty-fourth and fifty-third degrees round the great lakes and over the whole of Canada and New Brunswick. Its movements are rather heavy; and the shoulders being higher than the croup, it does not gallop, but shuffles or ambles along. During its progress it holds the nose up, so as to lay the horns horizontally back. This attitude prevents its seeing the ground distinctly; and as the weight is carried very high upon its elevated legs, it is said sometimes to trip by treading on its foreheels, or otherwise, and occasionally to give itself a heavy fall. It is probably owing to this occurrence that this animal was believed, by the ancients and the vulgar, to have frequent attacks of epilepsy, and to be obliged to smell its hoof before it could recover; hence the Teutonic name of *Elend* (miserable), and the reputation, especially of the forehoofs, as a specific against the disease." (*Cuvier, Animal Kingdom*, by Mr. Griffith, vol. iv. p. 74.)

194. *The methods of hunting moose are distinguished by some varieties.* For one of these we must again borrow from Mr. Griffith. "In North America it is principally practised in the early part of winter, and towards the spring. While the snows are not deep, they are not easily attacked; but when they begin to harden, and the hunters run on snowshoes, they endeavour to turn the game towards ravines, or where it is drifted deep. The Huron hunters have assured us that, when this is effected, he is sure to be soon entangled, and to flounder in it; but that they must be on their guard, and run instantly upon the deep snow to fire at him as he turns, because he will endeavour to double on his own track, and charge all that are then in his way. When first discovered, he is often found sitting on his hams like a dog, voiding his urine before he rises to escape. Against the bear and the wolf he stands at bay with his horns, acting offensively only with his fore or hind feet; his kick is very powerful and quick; it is said that a small tree is splintered by it." (*Ibid.* p. 78.) The North American Indians also assemble in large parties, and rouse the elks through the woods on each side of some river, when by surrounding them on all sides they force them into the water, where there are canoes filled with armed hunters, who are ready to kill them with their clubs, lances, &c., as they attempt to swim away.

195. *Bewick's account of the methods of hunting these animals in Canada is curious:*—"The hunters enclose a large space with stakes and branches of trees, forming two sides of a triangle; the bottom opens into a second enclosure, which is fast on all sides; at the opening are hung numbers of snares, made of the slips of raw hides. The hunters assemble in great troops, and, with all kinds of hideous noises, drive into the enclosure not only the moose, but various other kinds of deer, with which that country abounds. Some, in forcing their way through the narrow pass, are caught in the snares by the neck or horns; whilst those which escape these, meet their fate from the arrows of the hunters, directed at them from all quarters. They are likewise frequently killed with a gun. When they are first discovered they squat on their hind parts, and make water, at which instant the sportsman fires; if he miss, the moose sets off in a most rapid trot, making, like the reindeer, a prodigious rattling with its hoofs, and running twenty or thirty miles before it stops or takes the water. The usual time for this diversion is in winter, the animal can run with ease upon the firm surface of the snow; but the hunters avoid entering on the chase till the heat of the sun is strong enough to melt the frozen crust with which it is covered, and render it so soft as to impede the flight of the moose, which sinks up to the shoulders, flounders, and gets on with great difficulty; the sportsman pursues in his broad rackets or snow shoes, and thus makes a ready prey of the distressed animal."

196. *The reindeer* (*Cervus tarandus* Linn.) exists in two or three varieties in America, all of which are hunted by the natives; but as we shall confine our notices of this species to the sportings of Northern Europe we shall pass on.

197. *The red deer or stag* (*Cervus Elephas* Linn.), and the lesser members of the genus, are most of them found in this vast continent, where they are pursued by the natives for profit, and by the opulent for amusement. Stag hunting in general is now organised there as in England, and packs of stag hounds are to be found in many places, both in North and South America. Among the natives of Canada deer stalking is practised; these people also descend the rivers and lakes in boats, sending out dogs trained for the purpose, who hunt up the deer in the woods, and drive them to their accustomed mid-day haunts, which are on the margins of the waters. Near these the gunners lie concealed in their boats, or prostrate on their rafts, and at the approach of the game, they raise themselves slowly and shoot them. Deer are also hunted, according to Mr. Howison in his interesting *Sketches of Upper Canada*, after the following manner:—"Having inadvertently left the main road, I soon found myself, he observes, on the bank of the Thames. A vivid glare of light illumined every object around; but, as there was a little turn in the course of the river, I could not at first discover whence the radiance proceeded; in a few moments, however, a large raft, in which were five Indians and a blazing fire of hickory bark, appeared floating down the stream. Two of the Indians held torches in their hands, and a couple of dogs

sat in a small canoe that lay along side. A column of smoke rose from the fire, which, extending itself into ruddy volumes, hovered above the raft like a canopy, as it slowly glided down the refulgent current of the Thames, and riveted my eyes. My attention was soon drawn to the opposite shore by a young deer, which had sprung from the thicket, and stood stedfastly gazing upon the savages in an attitude of beautiful astonishment. In a moment three rifles were levelled at it. They were discharged, and it dropped down. The Indians raised a triumphant shout, and waved their torches, while a couple of them jumped into the canoe, and, accompanied by the dogs, paddled rapidly to the shore. But, when they landed, the deer, which had merely been wounded, sprung upon its legs again, and rushed into the forest. The dogs being dispatched to turn it, barked incessantly; the Indians on shore shouted and whistled to encourage them, and those upon the raft called loudly to their companions in tones of anger and impatience. The dogs soon succeeded in getting a-head of the deer, and driving it to the shore; but it immediately plunged into the river, and having swam towards a little bay that lay in the shade, it disappeared, to the great disappointment of the hunters. The raft had now floated far below the point at which the Indians had landed with the canoe, so that they hastily embarked, and paddled down the stream towards it. When they reached their companions they were taken on board, and the whole party moved down the river, illuminating the woods, and decoying their inhabitants into destruction. This kind of hunting is practised, I believe, by the North American Indians only. The brightness of the fire allures the deer, and several other kinds of game, to the sides of the river, where they are so much exposed to the shots of the hunters, that they very rarely escape."

198. *Deer hunting in Long Island* is described by Mr. Herbert as the "Epping hunt of American cockneys,"—"just the thing for a Broadway dandy, and for nothing on the broad earth beside." We pass over the doubtlessly deserved invectives of this distinguished and true sportsman, to give place to almost the only practical directions which he lays down relative to deer hunting. "In shooting at a deer on the leap with a gun and buck shot, even more than with a rifle, shoot well forward and low, as the animal descends from its bound; and, in shooting from horseback at speed, bear well on your off-stirrup, if firing on the nigh side, and *vice versâ*, bearing hard with your hand on the rein to which you shoot. The cause of this advice is obvious: the body is naturally thrust forward in the direction towards which you present your gun, and the best broken horse will swerve a little from the sudden flash." (*Field Sports in the United States, &c.*, ii. 276.) In Texas and the Western States of the Union, deer are killed by "fire hunting." A dark night being chosen, the huntsman, in addition to his other implements, takes a frying-pan fixed to a long wooden handle, and which, being filled with lighted pine wood, is carried over the left shoulder. The hunter walks about, occasionally sweeping the handle of the pan backwards and forwards; and should there be deer within range, it will look steadfastly at the fire, and discover itself by its brightly shining eyes. On seeing these, the sportsman brings his rifle up to his position, and having rested it upon the pan handle, takes a deliberate aim at his quarry.

199. *The musk ox* (*fig.* 45.), as any visitor to the British Museum may observe, is of a very different stamp from any cattle native to Britain. Strikingly short in the limbs, its long hair almost reaches the ground, and behind it entirely covers the tail, which, however, is itself very short. Around the foreparts the hair is particularly long and thick, thus admirably adapting the animal to live in the rigorous climate of its birthplace; its broad crooked horns also add to the other singularities of its appearance. This species of ox inhabits the North Georgian islands in the summer months; arriving in Melville Island in the middle of May, crossing the ice from the southward, and quitting it on the return towards the end of September. The musk ox may be further stated, on Esquimaux information, to inhabit the country on the west of Davis's Straits, and on the North of Baffin's Bay. It is probable that the individuals, which extend their summer migration to the north-east of Baffin's Bay, retire during the winter to the continent of America, or to its neighbourhood, as the species is unknown in South Greenland. Captain Franklin also remarks on the musk oxen, that "They, like the buffalo, herd together in bands, and generally frequent barren grounds during the summer months, keeping near the rivers, but retire to the woods in winter. They seem to be less watchful than most other wild animals, and when grazing are not difficult to approach, provided the hunters go against the wind. When two or three men get so near a herd as to fire at them from different points, these animals, instead of separating or running away, huddle closer together, and several are generally killed; but if the wound is not mortal they become enraged, and charge in the most furious manner. The

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MUSK OX.

largest killed by us did not exceed in weight three hundred pounds. The flesh has a musky disagreeable flavour, particularly when the animal is lean, which, unfortunately for us, was the case with all that we now killed."

Subsect. 3. *American Bear Hunting.*

200. *Bear hunting is a pursuit of much importance to the North American Indian*, and is undertaken with impressive ceremonials, which Charlevoix thus describes: — "A principal warrior first gives a general invitation to all the hunters. This is followed by a most strict fast of eight days, a total abstinence from all kinds of food, notwithstanding which the day is passed in continual song. This is done to invoke the spirits of the woods to direct the hunters to the places where there are abundance of bears. They even cut the flesh in divers parts of their bodies, to render the spirits more propitious. They also address themselves to the manes of the beasts slain in the preceding chases, as if these were to direct them in their dreams to plenty of game. One dreamer alone cannot determine the place of the chase; numbers must concur; but as they tell each other their dreams, they never fail to agree. This may arise either from contrivance, or from a real agreement in their dreams, on account of their thoughts being perpetually turned on the same thing. The chief of the hunt now gives a great feast, at which no one dares to appear without first bathing. At this entertainment they eat with great moderation, contrary to their usual custom. The master of the feast touches nothing, but relates to the guests ancient tales of the wonderful feats of former chases; and fresh invocations to the manes of the deceased bears conclude the whole. They then sally forth amidst the acclamations of the village, equipped as if for war, and painted black. Every able hunter is on a level with a great warrior, but he must have killed his dozen great beasts before his character is established; after which his alliance is as much courted as that of the most valiant captain. They now proceed on their way in a direct line; neither rivers, marshes, nor other impediments, stop their course, driving before them all the beasts they find. When they arrive at the hunting ground, they surround as large a space as they can with their company, and then contract their circle, searching at the same time every hollow tree, and every place fit for the retreat of a bear; and they continue the same practice till the time of the chase is expired. As soon as a bear is killed, a hunter puts into his mouth a lighted pipe of tobacco, and blowing into it, fills the throat with the smoke, conjuring the spirit of the animal not to resent what they are going to do to its body, nor to render their future chases unsuccessful. As the beast makes no reply, they cut out the string of his tongue, and throw it into the fire. If it crackles and shrivels up (which it is almost sure to do), they accept it as a good omen; if not, they consider the spirit of the bear is not appeased, and that the chase of the next year will be unfortunate. The hunters live well during the chase on provisions which they bring with them. They return home with great pride and self-complacency; for to kill a bear forms the character of a complete man. They give a great entertainment, at which they make it a point to leave nothing uneaten. The feast is dedicated to a certain genius (apparently that of gluttony), whose resentment they dread, if they do not eat every morsel, and even sup up the melted grease in which the meat was dressed. They sometimes eat till they burst, or bring on themselves some violent disorder. The first course is the greatest bear they have killed, without even taking out the entrails or skinning it; contenting themselves with singeing the skin, as is practised with hogs."

201. *The habitual attachment to the pursuit of wild beasts in these countries*, but more particularly to the chase of the grizzly bear (*fig.* 46.), is proved by the following interesting exemplification: — "Two boys, the one ten, and the other eleven years of age, sons of Mr. W. Johnson, of Campenfield Bay, Lake Simpcoe, York (Upper Canada), observed an old bear and three young ones swimming across the bay; they put after them with a bark canoe, and, by the use of their fire arms, soon dispatched the young ones, and took them on board of their canoe. They made several shots at the head of the old one with little or no effect; at length, coming in contact with her, one of them fired and broke her shoulder; the savage ferociousness of the animal was now raised to desperation—she endeavoured to upset the canoe. A sister on shore, seeing the hazardous situation of her little brothers, took another boat, and put out to their assistance. The bear saw her coming, left the boys, and made towards her, upon which the young Nimrods cried out, 'Don't fear, Sally, thump her on the nose, and keep her back; we have broken one of her shoulders; keep her back till we can load again, and we will break the other.' The boys were as good as their word; they did so; and, having both legs disabled, they pushed her head

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GRISSLY BEAR.

under water with their paddles, and drowned her. They with some difficulty got her into the boat, and took the four in triumph to land." Now, when we take into consideration that, with the exception of the polar bear, this is the most remarkable of the ursine tribe for strength and ferocity, as we are assured by Richardson, who has named it *Ursus ferox*, the enterprise was a remarkable one.

202. *Wolves which were common in America*, are now driven by an increasing population into retired situations, where they are followed by ardent sportsmen, with packs of very strong dogs. In these hunts the wolf commonly shows excellent sport. The American woods also furnish foxes, both red and grey, with plenty of racoons: wild squirrels are likewise abundant, and are found in several varieties. The grey kind, as being singularly destructive, and at the same time affording very toothsome food, is much pursued by small parties who meet purposely to shoot them, and afterwards regale themselves by a squirrel feast made on the scene of action.

SUBSECT. 4. *The Fur Hunters of North America.*

203. *The young Canadians travel, during the summer season*, forty or fifty leagues in expeditions, formed probably as much for pleasure as profit, but from which they always return laden with game. It is in the autumn, principally, that their huntings assume the character of business; at which time they visit the islands of the great lakes in succession, and return in the spring with vast quantities of the skins of bears, lynxes, beavers, martens, foxes, &c. as well as with a supply of the flesh of buffaloes, bears, elks, and deer, which they have killed. This flesh they first cure by smoke, and then allow it to become frozen, by which it is rendered imperishable for the season. It is said by Sarytschew, that as these skin-hunters proceed, they from time to time leave the pelts they have collected suspended from poles; and such is the conventional understanding among the various tribes employed in the same pursuit, that it is very seldom any loss is sustained.

204. *The inhabitants of the Aleutian isles* are altogether employed in hunting, fishing, and preparing the necessary implements for these pursuits. "Their baidars, baidarkas, or boats, (we are told) resemble the canoes of other savages, and consist of a skeleton of wood, over which is stretched a leather covering of seal's skin. The boats of the Unalashkans are superior in point of beauty to those of any of the other islands. In their form they are long and narrow, and commonly hold only one person, who sits in a round hole just fitted to the size of the body. The whole canoe is so light, that it may be carried in one hand, and is impelled by means of double paddles, seven or eight feet long, which are managed with great dexterity by the natives, who sometimes venture out in these boats a considerable way to sea even in stormy weather. The darts, or javelins, with which they kill their game, are adapted, with the greatest judgment, to the different objects of the chase. For land animals a single barbed point; for birds three points of light bone, spread and barbed; for seals, &c. a false point, inserted in a socket at the end of the dart, which parting, on the least effort of the animal to dive, remains in its body. To this barbed point a string of considerable length is fastened, and being twisted round the wooden part of the javelin, serves as a float to direct them to the seal, which having the stick to drag after it, tires, and soon becomes an easy prey. These darts are not shot from a bow, but slung from a small plank, about eighteen inches long and two inches broad. In order that the weapon may be held the faster, they have a sort of handle at the lower end, and an opening through which the forefinger is thrust. At the other end is a small channel into which the javelin fits, with a little knob that serves to retain it. When the javelin is to be thrown, the plank is held horizontally, and the aim being taken, the weapon is directed by the middle finger and thumb. This is done with so much dexterity, and the motion given to it is so powerful, that the object aimed at is rarely missed; and even whales, it is said, have been thus killed without any other weapon." Throughout the whole of these islands the Russians have formed settlements for the purpose of fur hunting, principally for the Chinese market. The most valuable fur they obtain is that of the sea otter (*fig.* 47.), the method of procuring which is as follows:— "A number of the hunters proceed together in separate baidarkas, or small boats, and as soon as any of the party perceives an otter, he throws his arrow (or small harpoon) at it, and pulls to the place where it plunges. He here stations his boat, and then lifts up his oar. The rest of the hunters, on observing the signal, form a circle around it; and the moment the animal shows its head above water, he that is nearest throws his arrow, and then hastens to the spot where the otter again disappeared; while the hunter, by raising his oar, again exhibits the signal for a second circle to form. In this manner the chase continues till the animal, exhausted by fatigue as well as loss of blood, which incessantly flows from repeated wounds, is at length taken.

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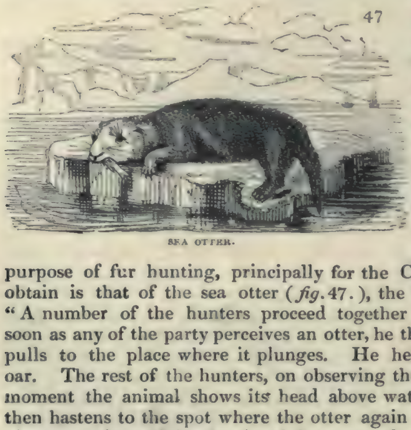

SEA OTTER.

205. *In Kamschatka, and in the northern islands which lie between it and Japan*, the hunters furnish themselves with that valuable variety of the weasel, the *sable* (*Mustela Zebellina* Linn.). These animals are chased only in the winter, between the months of November and January, for at that time the skins are in the highest perfection. The sable hunters assemble in companies of thirty or forty, and proceed along the great rivers in boats, taking with them provisions for two or three months. They have a chief who, when they are arrived at the place of rendezvous, assigns to each division of his men the quarter to which they are to go. From the spots which are frequented by these animals, the hunters remove the snow, and place snares there, each hunter being able to place about twenty snares a day. They also pitch upon certain places near trees, these they surround with pointed stakes, covering them with boards to prevent the snow from falling in, leaving a narrow entrance, above which is a beam supported only by a very thin and slight piece of wood. As soon as the sable touches this, to seize the piece of fish or meat which is placed there for a bait, the beam falls and kills it. Sables are also caught by snares, which are sometimes used for grouse and hares, being particularly partial to the seeds which are used as bait for these animals. Nets are occasionally employed in the following manner :—" When a hunter has discovered the track of a sable in the snow, he pursues it till he arrives at the burrow of the animal, over which he places his net, and then by smoke compels the sable to come out, when he is secured in the net." If fire arms are used, they are loaded only with single balls, that the skins may be as little injured as possible ; sometimes cross-bows with very small or blunt headed arrows are adopted. All the sables, as they are caught, are either delivered to the chief hunter or concealed in holes, lest the Tongenes, or other tribes, should steal or carry them away. We are told that so great are the hardships and fatigues to which the hunters are subjected in the pursuit of these animals, that instances have been known of their tying boards tight to their stomachs to prevent the cravings of appetite. In a similar manner and in the same latitudes the ermine is also taken.

206. *The field sports of Carolina are thus described in a letter to Mr. Daniel :*—" The largest portion of our country," says his correspondent, " is one continued forest, interspersed with rivulets which, though they eventually unite with the waters of the ocean, yet tend to form vast swamps in their passage. Their widths vary, from half a mile to three; they are thick covers, and therefore form a complete shelter for all kinds of our game, which are always to be found, more or less, in them. A day being fixed upon for a general hunt, all the sportsmen meet at a given point, with their huntsmen and hounds; there are few of us which keep more than ten couple, but then, every one having some dogs, they make a very large pack, when they are all collected. The sportsmen are then equally divided, one half going on one side the swamp, and the other part on the opposite side ; they then arrange themselves within gunshot of each other, and being all armed with double barrel guns, are ready for the sport, which commences the moment the dogs and huntsmen are turned in. These swamps are skirted with fine high pine barrens, which, being open, are famous shooting grounds. As soon as the dogs enter, the game run out, and are fired upon by the first sportsman they come to; they then take back to the cover and double, with the dogs in full cry. It is not unusual, in one of the largest of our swamps, to drive out of them in one day's hunt, deers, wolves, bears, foxes, wild cats, and a great quantity of wild turkeys, any of which the sportsman shoots as he thinks proper. We never follow one deer after he has made his escape out of the swamp, unless he is wounded, for there is no running down a deer with us, there being so many, that the dogs, if suffered to pursue far, would soon be divided into a number of packs; but our wolves we always run down; and as they are very strong and large, they will run from three to four and five hours. If they are not shot in the chase, they come to bay in a thick cover, and always turn their backs to a hurricane root (a tree blown up by the wind), where they will defend themselves against the largest pack, their bite being very severe. Our bears, foxes, and wild cats, are soon tired, when they always take to trees, from which they are shook down to the dogs. The sportsmen, in general, particularly admire as part of the diversion the shooting at our wild turkeys, which fly out of the swamps, whilst our dogs are in chase; they are very large, fly with great velocity, and are very fine eating. It is remarkable that the English gentlemen who hunt frequently with us shoot very badly at our large game, and yet will kill the smaller sorts with the greatest ease. I have known a gentleman shoot on the wing any of our fleet flying birds, without missing a shot, and yet miss five, six, and seven shots at deer and turkeys in a day. I attribute this to the agitation occasioned by the velocity with which they pass, and their not being accustomed to them. I have, in one day's hunt, seen started forty deer, and ten killed, besides a number of other game. The spoils, after the hunt is over, which is at dark, are equally divided among all the sportsmen, when the huntsmen set off with their respective hounds." It is said that no variety of rabbit is met with on the North American continent, though some hares (*Lepus Americanus*, *L. Virginianus*, &c.) have usurped the name.

Sect. III. *The Winged Game of America.*

207. *Winged game* is now only to be met with in any abundance in particular parts of America; its rapidly increasing population having exterminated much of it. Mr. Fowler, in his *Journal of a Tour* in this country, observes, that a few woodcocks and squirrels were to be found, with a greater plenty of quails. To use his own words, " Hares and pheasants there are none; and partridges (in some places *called* pheasants) are scarce. Woodcocks and snipes are uncertain, both as to season and situation. It is true that great quantities of other birds may sometimes be killed; for instance, wild ducks and pigeons, which are occasionally seen in flocks of many miles in extent; but after all, and much as I have heard of American shooting, in my opinion it is a poor insipid diversion, compared with the English, being pursued without any kind of system or science, and reminding me more of

the onsets of our mechanics and shopmen, let loose at Christmas and on holidays, to range the fields, no matter where, and pounce upon all, no matter what, than of any thing worthy the name of shooting. Let no English sportsman think to better himself by emigration in this respect; I'll answer, upon trial, for his total disappointment." Mr. Fowler also complains heavily of the want of well-trained dogs in this country, and of the height of the Indian corn, and thickness of the buck wheat, as great impediments to Transatlantic shooting. In the less populous parts of the country feathered game is, however, yet met with in sufficient number and variety, among which the wild turkey stands conspicuous. It is larger and darker than the tame breed; it is also gregarious, associating in flocks of five hundred, or more, particularly in the retired swamps, roosting at night in the tall trees, and feeding by day, in more open ground, on pulse, berries, and insects.

208. *The hunting of the wild turkey by the Indians*, who feed much on that bird, appears to be conducted in the following manner:—"A native takes his dog, which the turkeys perceiving, run off with such amazing speed as soon leaves the dog far behind, but as he continues to run, which they cannot do long, they are at last forced to take shelter in a tree, where, being much spent and very much frightened, they suffer themselves to be knocked down with a pole." The American gentry, who pursue them for amusement, usually shoot them with a rifle, in which practice they are, as we have already had occasion to mention, astonishingly expert. The turkey, in a state of unlimited freedom, is seldom inclined to rise on the wing, as it flies with more difficulty than the pheasant, yet, like that bird, it runs with uncommon speed. On the least alarm the wild turkey squats, or buries itself in the long grass or cover, amongst which it is generally to be found; but even in this situation these birds will not suffer the near approach of a human being, or any living creature, which they regard as an enemy; on the contrary, they elevate their heads (being on the look out), and thus continue for some seconds, perhaps a minute or more, according to circumstances, offering an excellent mark for the rifle.

209. *The pinnated grouse* (*fig* 48.) (*tetrao cupido* Linn.), is an object of eager search to the American sportsman. It differs, however, in many particulars from the English breed, and is decreasing fast in the United States. In the plains of New Jersey they are to be met with, as well as in Northampton and Wayne counties, in Pennsylvania; on the barrens of Kentucky, on the immense plains of Illinois and Indiana, and, perhaps, in some few other parts of the Union. It has been a disputed point among naturalists whether or not the *prairie* hen, as it is called in Illinois, is the bird under consideration. These birds, during the period of their courtship, have a custom among the males which is not altogether without parallel, the *ruff* doing the same, of congregating at daybreak at a particular spot, called the *scratching-place*. "The ceremony commences by one of them uttering a low *tooting* noise, which appears to be a sort of challenge, or threat of defiance, which is answered by another. They then come forward, one by one, from the bushes, and strut about with all the pride and ostentation they can display. Their necks are incurvated, and the feathers on them erected into a sort of ruff; the tails are expanded like a fan; and they march about and about like a turkey-cock. These are the signals for battle. They fight with uncommon spirit and fierceness, in the same manner as the blackcocks of this country, uttering a cackling, screaming, discordant noise. The *tooting*, as it is called, is sometimes heard at the distance of three or four miles; and such of the American sportsmen as are distinguished as pot-hunters, make the most of it. A blind is erected, or, as it is called, a *bush-house*, at a suitable distance from the tooting or *blowing* ground, to which the shooter resorts, long before day, with his duckgun or musket, and patiently waits until the contest has fairly commenced, when, at a single discharge, half a dozen perhaps will be killed; and so inattentive are the birds at this time to their own safety, that they will frequently suffer themselves to be shot at several times."

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THE PINNATED GROUSE.

210. *The ruffed grouse* (*T. Umbellus*) is sometimes called the pheasant. "It is to be found in most of the states of the Union, and is known by several names. In Pennsylvania it is distinguished by the appellation of the pheasant; in New York, New Jersey, and all the eastern states, it is called the partridge, but it bears a much greater resemblance to the English pheasant than it does to the English partridge. It is about eighteen inches long, and twenty-three in extent, from the tip of one wing to the tip of the other, and is sometimes found nearly two pounds in weight. It is met with as far north as latitude fifty-one, and as far south as Georgia; and is generally to be seen in hilly and woody countries. Although nearly allied to the pinnated grouse, it differs in the following particular, namely, that the former is rarely to be seen in an open country, while the latter is principally found in such. The ruffed grouse lays from ten to fifteen dusky cream-coloured eggs in a nest made with grass and leaves, at the root of a bush, or by the side of a bog, always in the most sequestered places. The males have a practice of *drumming*, as it is phrased, which is a noise not easy to be

described, and which is merely the call of courtship. In severe weather these birds are frequently taken in traps and snares. When the snow is deep and soft they will, on being forced to rise, fly a short distance and plunge into it; and, after running under it a short while, emerge and rise again. Their flights at other times are rapid and long; they rise with a tremendous whirring, and if they intend to alight on a tree, will sometimes challenge. In some parts of the country they are hunted with small dogs; and, as soon as forced on the wing, will fly into small trees and alight on the lower branches, and so long as the dog continues barking under them, appear to have no thoughts of flying, but are intent on watching the motions of the dog; thus they will permit the shooter to single them out one by one, until the whole are killed, provided he begins with those which are perched on the lowest branches, otherwise the falling of those from above will alarm the birds below, and the whole will take flight." They are, however, by all fair sportsmen pursued as with us, at stated times only, the proper season for doing which being from the first of September to the first of January." (*Sporting Annals*, No. lxxvii. p. 209.)

211. *The ptarmigan* is said to be taken here by means of twine nets, twenty feet square, connected to four poles, and propped with sticks in front. A long line is fastened to these, the end of which is held by a person who lies concealed at a distance. Several people drive the birds within reach of the net; which is then pulled down, and is found to cover fifty or sixty of them. They are found in such plenty in the northern parts of America, that upwards of ten thousand are frequently caught for the use of the Hudson's Bay settlement, between November and May.

212. *The true American partridge* differs from the English bird of the same name in size, being full one third smaller; it is also somewhat different in plumage; the call is likewise different, but the form and habits are much the same. In some respects this bird appears more nearly allied to the quail than the partridge, not only from its size, but from its disposition for partial emigration. These birds begin to congregate in the early part of September; and a remarkable circumstance is stated with regard to them, that all those near to rivers will be seen to make towards them, where, if suffered to remain unmolested, they will continue for a few weeks, and then return to their usual haunts. The proper season for shooting partridges is from the first of October till the first of January. The woodcock and snipe are also much followed here. The snipe shooting of America is particularly excellent, affording almost all the pleasure of the same sport in India, without its dangers. The rail or sora of America is likewise much more numerous there than with us, and is altogether more attractive than our water hen. The rail is migratory, being likewise found in the United States in the summer, and in Mexico in the winter. In Pennsylvania, New Jersey, Delaware, and Maryland, we are told that the rail is pursued in light boats, from fifteen to eighteen feet long; the shooter is provided with a man to push the boat, which is done by standing on the stern, and propelling her with a pole ten or twelve feet long, with a large knob on the end of it, to prevent it sinking too deep in the mud, and a spike driven into the end of the knob to prevent slipping. The sportsman stands forward in the boat with his left foot considerably advanced, in order to keep himself in a steady position; the boat is then pushed according to the shooter's direction, and the birds, becoming alarmed, will rise before him almost always at such a distance as to make their death certain, at least, if the sportsman be a good gunner. The sport seldom lasts longer than four hours, for soon after the tide begins to ebb, from some cause not easily explained, the bird will not get up. It is no uncommon thing for one shooter to kill from fifty to eighty birds in a tide.

213. *The migrations of the wild pigeon in America* brings and takes away such countless myriads of these birds as to defy calculation. " In Upper Canada," says Mr. Howison, in his entertaining *Sketches*, " you may kill twenty or thirty at one shot of the masses which darken the air." And in the United States, according to Wilson the ornithologist, they sometimes desolate and lay waste a tract of country forty or fifty miles long, and five or six broad, by making it their breeding-place. While in the state of Ohio Mr. Wilson saw a flock of these birds which extended, he judged, more than a mile in breadth, and continued to pass over his head at the rate of one mile in a minute, during four hours; thus making its whole length about two hundred and forty miles. According to his moderate estimate, this flock contained two thousand two hundred and thirty millions. During their passage they are tempted to alight by the following decoy :—" The *flight and stool pigeons*, as they are called, are prepared by passing a thread through the edges of both their eyelids, which are thus closed; their legs are booted, and the *flights* being fastened to long strings, are thrown into the air, and fly as far as they are permitted; while the *stool pigeon* is tied to a narrow board which, at the end where the bird is fixed, rises and falls, and both kinds of decoys, by the flapping of their wings draw the attention of the passing flocks of wild pigeons, which are thus made to alight on prepared ground within reach of the concealed spring-net, or on a long pole rising a little from the horizontal line, so as to give the greatest effect to the discharge of the gun from the bush-house which conceals the sportsman. The net, concealed by cut grass, is sprung by a rope, which is pulled at the moment after the pigeons alight upon the prepared ground." The Canadians also take them, it is said, in the following simple manner :—" A fir tree is stripped of its branches, and a pole is attached to the stem horizontally, on which the birds continue to alight until it is covered, which is the signal for the gunner, who lies concealed in an ambush, to rake the line with his gun." This variety of pigeon is variegated in its plumage; it is likewise rather less than our wood pigeon and hardly equals it in flavour; without doubt, however, the arts of cookery might improve it, while health and hunger combine to provide an excellent sauce for it, among the thousands who feed thereon during their migration.

214. *In Hudson's Bay goose shooting proves an economic sport* both to the English settlers and to the Indians. Mr. Pennant says " The English at Hudson's Bay depend greatly on geese of this and other kinds for their support, and in favourable years kill three or four thousand, which are salted and barrelled. Their arrival is impatiently expected by the

inhabitants, as they are one of the chief articles of their food, and also the harbingers of spring; and the month is named by the Indians the *goose moon*. They appear usually at our settlements in numbers about St. George's Day, and fly northward to nestle in security. They prefer islands to the continent, as further from the haunts of men. Thus Marble Island was found in August to swarm with swans, geese and ducks; the old ones moulting and the young unfledged and incapable of flying. The English send out their servants, as well as the Indians, to shoot these birds on their passage. It is in vain to pursue them; they therefore form a row of huts made of boughs, at musket-shot distance from each other, and place them in a line across the parts of the vast marshes of the country where the geese are expected to pass. Each *stand* is occupied by a single person; these, on the approach of the birds, mimic their cackle so well that the geese will answer, wheel and come nearer the hovel. The sportsman keeps motionless and on his knees, with his gun cocked, and never fires till he has seen the eyes of the geese. He fires as they are going from him, then picks up another gun that lies by him and discharges that. The geese killed he sets up on sticks as if alive, to decoy others; he also makes artificial birds for the same purpose. In a good day (for they fly in very uncertain and unequal numbers), a single Indian will kill two hundred. Notwithstanding every sort of goose has a different call, yet the Indians are admirable in their imitation of every one. The Canadian goose, so called (*fig.* 49.) must not be passed over, but on the contrary should be noticed as a very valuable animal, whether wild or tame. It appears from many sources that the Indians of Hudson's Bay are very expert in snaring swans, geese, and ducks, by making a number of hedges or fences project into the water at right angles from the banks of a river, lake, or pond; for it is observed that these birds generally swim near the margin for the benefit of feeding on the grass, &c.; the fences are continued for some distance from the shore, and separated two or three yards from each other, so that the openings are left sufficiently large for the birds to swim through. In each of these openings a snare is hung and fastened to a stake, which the bird when entangled cannot drag from the bottom; and to prevent the snare from being blown out of its proper position by the wind, it is secured to the stakes which form the opening with tender grass, which is easily broken when the bird is caught." The Canadian goose can often be induced to lower its flight, and come within shot by a good imitation of the hoarse *houk* or call of the gander.

CANADIAN GOOSE.

215. *Horse racing is now practised in the United States* with much of the spirit and formalities of the English turf. There are courses at New York, Washington, Long Island, &c.

Sect IV. *The Field Sports of South America.*

216. *The field sports of South America* cannot be said to assume that masculine character which they present in the north, notwithstanding that country boasts of the puma, as a representative of the African lion, and of the ocelot and once as bastard types of the leopard and panther. For it must be allowed that the bison, the elk, the moose, the stately stag, and the lesser varieties of the deer family, which speckle the trackless plains, or inhabit the fastnesses of the unbounded forests of the northern tract, give more ample scope to the lovers of the chase than those of the southern states.

Subsect. 1. *The Chase of the Urus or Wild Bull.*

217. *Wild cattle are hunted by the natives of the South American plains.* The manner in which this sport is conducted is thus described by a traveller: —"After a ride of about three or four miles, on a large open plain, we found about four hundred head of cattle, rode gently round to bring them into a more compact body, and made the animal, which was to be chased, distinctly known to every individual of the party; our settled object was to drive him to the house, and to render the sport as complete as possible, the *lasso* or noose was not to be used until there was a probability that he would otherwise escape. Some of the people then dashed into the midst of the herd, attentively observing the selected animal. One half of the oxen were thus at once driven from the spot, and others which chose to do so were permitted to follow; but wherever the victim turned, a horseman met him and stopped his career. The work was easy till the remaining group was reduced to about twenty, which then made violent attempts to join their comrades, and fiercely attacked the huntsmen who intercepted them. In a short time four of them, being hard pressed, plunged into some watery ground about two miles from the house, and among them was the object of the chase. When driven from the water, this small number was more harrassed than before, and perceiving their danger, exerted themselves with redoubled violence. Sometimes we were obliged to ride hard, and great coolness and address were necessary to prevent their escaping behind us into the wood. In this last respect our efforts were in vain;

they gained this refuge, and we could no longer act in concert. The wood was full of thick bushes of myrtle, and many trees spread their arms horizontally at seven or eight feet from the ground. It was matter of high gratification, as well as wonder, to observe how our huntsmen rounded the bushes and bent under the branches, so as sometimes to hang on the sides of their horses. Though unable to follow I soon encountered our chief, who had made an unsuccessful cast with his lasso, and was disentangling it from the branch of a tree. I shall never forget the ardour and rapidity with which he afterwards darted and wheeled among the trees, nor lose the conviction fixed upon my mind, what execution such men, so trained, must be capable of in a country like this. My musings were soon interrupted by my reaching the beach, and seeing at a distance our young hero with the ox securely attached to his horse by the lasso, and leading the captive towards the house. The instrument had gone round his horns, and was fixed close to the crown of his head. The animal, thus entangled, made many ferocious efforts to gore the horse that now led him, but this wary creature kept his eye upon the ox, and pulled at the lasso so as to keep it always on the stretch, and himself two springs in advance. In his exertions he was greatly assisted by his rider; but the ox, convinced at length that his attempts to gore his leader were vain, became sullen, and was partly dragged onwards. Recovering his exertions, however, it became necessary to apply another lasso to assist him in conducting his captive, who, seemingly conscious that he was completely subdued, now walked along quietly to the hut, after a chase of three hours, where, being tied to a post, he bellowed with madness, and furiously tried to disengage himself. A man now came forward with an instrument called a *facam*, resembling a carving-knife, and, warning every one to be on his guard, passed near the heels of the ox, and by a back-handed stroke houghed him, on which the ox gave a desperate kick, and, snapping the tendon, fell on his haunches. A third then drew a sharp knife across his throat, when, with a deep bellow, expressive of rage and agony, he yielded up his life. Immediately the people set about skinning the beast, and preparing a part of him for dinner. The skin, as it was taken off, being carefully stretched on the ground, preserved the flesh from blood and dirt. During this process fires had been kindled and burned down to clear embers; slices of flesh were then cut off from the ribs, as the choicest part, for the master and his guests, and roasted at a fire apart; afterwards the attendants helped themselves as they pleased, and cooked their portion after their own mode."

Subsect. 2. *Hunting the Puma, or American Lion.*

218. *The puma* (*Felis Concolor* Linn., *fig.* 50.) is considered by modern naturalists to be essentially different from the jaguar, and, though familiarly called the American lion, it differs from the true lion in the shape of the head, which in the puma is small and round, whereas a square form of the head is a marked character in the other. Mr. Kean's lion, as he was called, was a puma; and it is remarkable of these animals, that, although they are the most ferocious and cruel of the tribe in their wild state, they are the most easily tamed and gentle when domesticated. It was roundly asserted by Molina and D'Azara, both authors of credit, whose opportunities of collecting information on the subject were certainly considerable, that the puma will not attack a man; but the following melancholy occurrence is but one out of many known instances to the contrary: — "Two hunters went out in quest of game on the Katskill mountains, in the province of New York, on the road from New York to Albany, each armed with a gun, and accompanied by his dog. It was agreed between them that they should go in contrary directions round the base of a hill, which formed one of the points in these mountains; and that, if either discharged his piece, the other should cross the hill as expeditiously as possible, to join his companion in pursuit of the game shot at. Shortly after separating, one heard the other fire, and, agreeably to their compact, hastened to his comrade. After searching for him for some time without effect, he found his dog dead, and dreadfully torn. Apprised by this discovery that the animal shot at was large and ferocious, he became anxious for the fate of his friend, and assiduously continued the search for him, when his eyes were suddenly directed, by the deep growl of a puma, to the large branch of a tree, where he saw the animal crouching on the body of a man, and directing his eyes towards him, apparently hesitating whether to descend and make a fresh attack on the survivor, or to relinquish its prey, and take to flight. Conscious that much depended on celerity, the hunter discharged his piece, and wounded the animal mortally, when it and the body of the man fell together from the tree. The surviving dog then flew at the prostrate beast, but a single blow from its paw

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PUMA.

laid it dead by its side. In this state of things, finding that his comrade was dead, and that there was still danger in approaching the wounded animal, the man prudently retired, and with all haste brought several persons to the spot, where the unfortunate hunter and both the dogs were all lying dead together." (*Cuvier, Animal Kingdom*, by Griffith, vol. ii. p. 438.)

219. *The manner of hunting the puma* is as varied as the methods in use against the tiger, every one of which is occasionally employed against the former animal; but, superadded to these, the puma is entangled by the dexterous cast of the lasso. A traveller writes, — "On approaching pretty near to the marsh we discovered, to our infinite delight, a considerable quantity of rain water among the rushes, and were on the point of dismounting to partake of it, when suddenly a large puma, or South American lion, sprung from a rushy lair where he had been crouched, and instantly fled across the plain. This somewhat startling appearance dispersed our thirst, or the sense of it, for the moment, and we all turned our horses in pursuit of the fugitive. I have elsewhere described the extraordinary skill of the Gauchos with their lasso. On this occasion I had to witness a new instance of it in the Cordovese scout, who, presently coming up with the lion, cast his lasso over its head in an instant, and brought it to the ground, almost choked by the running noose. On recovering himself a little, the lion seemed disposed to turn on his assailants, and defend himself; but before he could rise, the lasso of the capataz was dexterously cast round his hind legs, and the holder of it riding on, the lion was stretched on the plain by the tightened cords, without the power of moving. With the rapidity of lightning the Cordovese now dismounted, and the blood of the animal was the next instant gushing from beneath his knife. After satisfying our thirst by returning to the marshy pool, the carcass of the lion was dragged to the carts, where the skin was taken off, and the flesh cut into small pieces, roasted, and eaten within an hour of our first sight of the living animal. The flesh, which I tasted, was very white, and resembling veal, but of a fishy flavour; but certainly it was much preferable to that of a newly-slain buck, which was roasted at the same time. The flesh of the lion is esteemed a great delicacy by the Gauchos, and consequently a feast on one is looked upon as a treat of no ordinary kind. The next day we arrived at Melinquecito, where a lioness with two cubs was taken; the mother was killed and eaten, and the two cubs were put into one of the carts, with the intention of conveying them alive to Buenos Ayres, but for want of proper food they soon died."

Subsect. 3. *Hunting the Peccary and Tapir.*

220. *The peccary of America* (*Sus Tajacu* Linn., *fig.* 51.), which may be considered to stand in the place of the wild boar of other quarters of the globe, is a gregarious animal, and congregates in large herds. It makes a very desperate resistance against the hunters, who attack it for its flesh, after the manner of hunting the wild boar, by running it down and spearing it, or by lying in ambush and shooting it. This animal also sometimes commences the attack itself, and then proves very dangerous to men, horses, and dogs. M. de la Borde describes two varieties of this animal, one smaller than the other: he relates that, "Being one day engaged with some others in hunting a drove of peccaries, they were surrounded by them, and obliged to take refuge upon a piece of rock; and, notwithstanding they kept up a constant fire among them, the creatures did not retire till a great number of them were slain."

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PECCARY.

221. *The tapir* (*Hippopotamus terrestris* Linn.), already figured among the Indian animals (p. 40.), is to the South Americans the representative of the hippopotamus. Its habits are the same, and it is chased after the same manner; and like that animal, when found at some distance from the shore, is seldom able to make a sufficiently speedy retreat from the hunters and their dogs before it is either speared or shot. The alpaca and vicunna are likewise both hunted with avidity, and both afford interesting sport and excellent food. This is also the country of the condor, which the natives are said to entrap by concealing themselves within the skin of a newly killed ox, on which this monstrous bird descends to feed, and is then within reach of his wily enemy. The pigeon is here found in immense flocks, and, though it is shot in vast numbers, it still appears equally plentiful. Red legged partridges of different kinds, some very large and others smaller, are in great plenty here. Wild turkeys are likewise found in flocks, as in North America, and are equally prized. Aquatic fowls of every description swarm, and are taken by a variety of methods, differing but little, however, from those practised in North America.

Subsect. 4. *Sporting with Sharks and Crocodiles.*

222. *The shark* (*Squalus* Linn.) infests the shores of South America, and, strange to say, is an object of sporting enterprise with some of the natives, who boldly venture into the deep, and wage what to all appearance would seem a most unequal contest with this voracious animal, of which we have already related one remarkable instance. (See p. 40.) But such is the dexterity and coolness of these divers that, armed with a knife only, they dare the shark to the attack, and, watching the moment when he turns to seize them as his prey, they plunge the weapon into him, themselves usually escaping unhurt. Captain Hall, in his amusing and interesting work lately published, under the title of *Fragments of Voyages and Travels*, calls this the "sport of sports," and relates a mortal combat between Jacko and his hereditary enemy the shark. He says, "I remember once observing Jacko the monkey running backwards and forwards along the after part of the poop-hammock netting, grinning, screaming, and chattering, with his head over the railing, staring with his eyes almost bursting from his head. 'Messenger, run to the cook for a piece of pork,' cries the captain, taking command with as much glee as if it had been an enemy's cruiser he was about to engage. 'Where's your hook, quarter-master?' 'Here, sir, here!' cries the fellow, and in the next instant piercing with it a huge junk of rusty pork. The hook, which is as thick as one's little finger, is attached to a fierce-looking grappling-iron, and further, is furnished with three or four feet of chain, a precaution which is absolutely necessary, for a voracious shark will sometimes gobble the bait so deep into his stomach, that, but for the chain, he would snap through the rope by which the hook is held. A shark, like a midshipman, is generally very hungry; but, in the rare cases when he is not in good appetite, he sails slowly up to the bait, smells at it, and gives it a poke with his shovel nose, turning it over and over. He then edges off to the right or left, as if he apprehended mischief, but soon returns again to enjoy the delicious *haut-gout*, as the sailors term the flavour of the damaged pork, of which a piece is always selected if it can be found. This coquetry or shyness I have seen go on for an hour together, after which the shark has made up his mind to have nothing to say to us, and either swerved away to windward, if there be any breeze at all, or dived so deep that his place could be detected only by a faint touch or flash of white, many fathoms down. The loss of a Spanish galleon in chase, I am persuaded, could hardly cause more bitter regret, or call forth more intemperate expressions of anger and impatience. On the other hand, I suppose the first symptom of an enemy's flag coming down in the fight was never hailed with greater joy than is felt by a ship's crew on the shark turning round to seize the bait. A greedy whisper of delight passes from mouth to mouth; every eye is lighted up, and such as have not bronzed their cheeks by too long exposure to sun and wind, may be seen to alter their hue from pale to red, and back to pale again, like the tints of the dying dolphin."

223. "*When a bait is towed astern of a ship* that has any motion through the water at all, it is necessarily brought to the surface or nearly so. This of course obliges the shark to bite it from below; and, as his mouth is placed under his chin, not over it like that of a Christian, he must turn nearly on his back before he can seize the floating piece of meat in which the hook is concealed. Even if he does not turn completely round, he is forced to *slew* himself, as it is called, so far as to show some portion of his white belly. The instant the white skin flashes on the sight of the expectant crew, a subdued cry, or murmur of satisfaction is heard amongst the crowd, but no one speaks for fear of alarming the shark. Sometimes, at the very instant the bait is cast over the stern, the shark flies at it with such eagerness, that he actually springs partly out of the water. In general, however, he goes more leisurely to work, and seems rather to suck in the bait than to bite it. Much dexterity is required in the hand which holds the line at this moment; for a bungler is apt to be too precipitate, and to jerk away the hook before it has got far enough down the shark's maw. The secret of the sport is to let the voracious monster gulph down the huge mass of pork, and then give the rope a violent pull, by which the barbed point, quitting the edge of the bait, buries itself in the coats of the victim's throat or stomach. The suddenness of the jerk with which the poor devil is brought up, when he has reached the length of his tether, often turns him quite over on the surface of the water; then commence the loud cheers, taunts, and other sounds of rage and triumph so long suppressed. Instead, however, of being instantly hauled, it is held the best practice to play him a little, with his mouth at the surface, till he becomes somewhat exhausted. No sailor ought ever to think of hauling a shark on board merely by the rope fastened to the hook, for however impotent his struggles may generally be in the water, they are rarely unattended with risk when the rogue is drawn half way up. To prevent the line breaking, or the hook snapping, or the jaw being torn away, the device of a running bow-line knot is always adopted, the noose, being slipped down the rope, and passed over the monster's head, is made to join at the point of juncture of the tail with the body. When this is once fixed, the first act of the piece is held to be complete, and the vanquished enemy is afterwards easily drawn over the top-rail, and flung on the deck, to the unspeakable delight of all hands. Hauled on deck the first operation is always to deprive him of his tail, which is seldom an easy matter, it not being at all safe to come too near him, but some dexterous hand, familiar with the use of the broad axe, watches for a quiet moment, and at a single blow severs it from the body. He is then closed with by another, who leaps across the prostrate foe, and with an adroit cut rips him open from snout to tail, and the tragedy is over, so far as the struggles and sufferings of the principal actor are concerned. There always follows, however, the most lively curiosity on the part of the sailors to learn what the shark has got stowed away in his inside, but they are often disappointed, for the stomach is generally empty. I remember one famous exception, indeed, when a very large fellow was caught on board the Alceste, in Angree Roads, at Java, when we were proceeding to China with the embassy under Lord Amherst. A number of ducks and hens, which had died in the night, were as usual thrown overboard in the morning, besides several baskets, and many other minor things, such as bundles of shavings and bits of cordage, all which things were found in this huge sea-monster's inside. But what excited most surprise and admiration was the hide of a buffalo, killed on board that day for the ship's company's dinner. The old sailor, who had cut open the shark, stood with a foot on each side, and drew out the very articles, one by one, from the huge cavern into which they had been indiscriminately drawn. When the operator came at last to the buffalo's skin, he held it up before him like a curtain, and exclaimed, 'There, my lads, d'ye see that, he has swallowed a buffalo, but he could not *dis-gest* the hide!'"

224. *To contend voluntarily with a crocodile is a sporting enterprise* which would not accord with the taste of every one; and yet, as long ago as the time of Pliny, this warfare has been practised, as the following translation from the great Roman naturalist will prove: — "There is a race of men hostile to the crocodile, called *Tentyritæ*, from an island in the Nile itself, which they inhabit. Their stature is small, but their courage in this practice is wonderful. This beast is terrible to them that flee from him, but runs away from his pursuers, and these men alone dare attack him. Moreover, it is affirmed they swim after him in the river, and *mounting on his back like horsemen*, as he opens his jaws to bite with his head turned up, they thrust a club into his mouth, and holding the ends of it, one in the right hand and the other in the left, they bring him to shore captive as if with bridles, and so frightened with their shouts only, that they compel him to disgorge the bodies he had just swallowed, in order to be buried." Dr. Pococke also, in his *Observations on Egypt*, mentions a method of taking the crocodile still more like that which Mr. Waterton, assisted by the Indians, as mentioned below, practised on one of these monsters of the Essequibo in South America. Dr. Pococke says, "They make some animal cry at a distance from the river, and when the crocodile comes out, they thrust a spear into his body, to which a rope is tied; they then let him go into the water to spend himself, and afterwards drawing him out, run a pole into his mouth, and *jumping on his back*, tie his jaws together." Herodotus says that the people of Elephantine in Egypt, call the crocodile *χάμψη, champse* (*Euterpe*, cap. lxix.); and it is worthy of remark that Bryant gives, among names for it, that of *Caimin* (*Mythology*, vol. ii. p. 398.). He likewise states that some animal is made to cry near the river, so that by its noise the crocodile may be attracted to the spot; and we find due notice was likewise given on the banks of the Essequibo, for we read "the Indian" having laid the bait, then took the empty shell of a land tortoise, and gave it some heavy blows with an axe, which he said was to call the cayman. In a very rare and singular book of field sports, entitled, "*Venationes Ferarum, Avium, Piscium, Pugnæ Bestiariorum, et mutuæ Bestiarum*, depictæ à Joanne Stradano, editæ per Nicolaum Visscher, cum privilegio ordinum Hollandiæ et West Frisiæ," there are many plates on sporting subjects, and among them our cut (*fig.* 52.), accompanied the following verse: —

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MOUNTED CROCODILE.

> "Tentyra in Ægypto, Nilum juxta, insula gentem
> Intrepidam gignit; crocodili hæc *scandere dorsum*
> Audet: refrenat baculo os: discedere cogit
> Ex amne in terram: mortem acceleratque nocenti;"

which may be thus translated: — "Tentyra, an island of the Nile in Egypt, is inhabited by an intrepid people, who climb the crocodile's back, and bridling his mouth with a staff, force him out of the water and slay him." Mr. Waterton, in his *Wanderings in South America*, in modern days informs us that he also has practised a similar feat. The foregoing extracts, with other interesting matter, have however been quoted by a correspondent in the *Magazine of Natural History*, vol. ii. p. 13. as a proof that the practice has long been common. We can also take on ourselves to affirm that it bears even a character of less daring than that of attacking the shark in his own element, as is not unfrequently done by the Indians, and has also been successfully attempted by one of our own sailors, as we learn by the account of Captain Basil Hall, so lately quoted. It appears that Mr. Waterton and his Indians "having secured a crocodile or cayman, as it is termed, of the Essequibo, by a baited hook fastened to a long rope, they pulled the cayman," as he tells us, "within two yards of him. I saw," he says, "that he was in a state of fear and perturbation; I instantly dropped the mast, sprang up, and jumped on his back, turning half round as I vaulted, so that I gained my seat with my face in a right position. I immediately seized his fore-legs, and by main force twisted them on his back; thus they served me for a bridle." (*Wanderings in South America*, 3d ed. p. 242.)

CHAP. IV.

The Progress of Field Sports in Europe.

225. *The chase in all northern latitudes* must of necessity present a similarity of feature, as the indigenous animals, which are the objects of it, do not essentially differ. As this observation will apply both to North America, so lately the subject of our notice, and to Northern Europe, to which we are now proceeding, it will not excite surprise if we dwell

in our detail on such points only as present some essential variations in the animals which are the objects of the chase, and on any distinct traits of nationality in the mode of pursuing them. As we direct our view to the temperate and southern parts of Europe, both the animals and the methods of hunting them will present traits sufficiently distinct to render a fuller account necessary to our purpose of forming a universal history of field sports.

226. *The zoology of Europe* may be considered as marked by the small number of its original quadrupeds; the great number of its insect tribe, and the paucity of its reptiles in size and number, and fortunately in their innocuous nature also. European birds are tolerably numerous, but their tendency to migrate is remarkable, though it is unquestionably natural; for they are singularly strong on the wing, as is well known to the gunner of the marshes. The *give and take*, as the sportsman would call it, of the migratory birds is singularly marked in the periodic interchange. Those that leave us in autumn are replaced by vast tribes of wildfowl, with woodcocks, snipes, plovers, &c. Of the general features of European zoology we may remark, such have been the effects of civilisation, that the original distribution of its animals is greatly disturbed; and so many early exotics had been introduced, that we find it somewhat difficult to separate and define them. Arctic Europe, which comprehends Finmark, Lapland, the islands of Spitzbergen and Iceland, with much of Norway, Sweden, and Russia, must be supposed to produce many quadrupeds similar to those of Arctic and North America. Thus our northern regions own the polar bears, the reindeer, the arctic foxes, wolves, and a long list of the fur-bearing tribes. In Central Europe we find the brown bears in common; the black bear, on the contrary, is now very seldom met with. Two or three species of the wild cat, or lynx, are common; the beaver was also well known, but is not now a British resident. Of ruminants we have the stag, the fallow deer, the roe, the ibex, the yzard, and the chamois. The musmon, from which it is thought our domestic sheep are descended, is still, it is said, found in some parts of Europe, as Sardinia, Corsica, &c. The ox was also a wild inhabitant of our quarter; and the white variety still exists in some parts of Scotland, and was to be met with at Chillingham, in Northumberland, not very long since. The buffalo is found in Greece and Italy, but only in a domestic state. We have two species of the marmot, four varieties of the hare, and some also of the rabbit. The hamster, with his cheek pouches like the monkey, is also found among us.

227. *Of the ornithology of Arctic and Northern Europe* we may observe, as we did with regard to its quadrupeds, that many of them agree with those of Arctic and Northern America. We have, however, to notice four species of European vultures. The great eared owl, though not common in Britain, is sufficiently so in other parts of Europe. Three varieties of bustards are found in this quarter of the globe, two of partridges, and one of the quail. We have three species of grouse; nor must we pass over our woodcocks, snipes, ruffs, plovers, and wildfowl. Of European fish we shall have occasion to treat hereafter fully.

Sect. I. *The Field Sports of Russia.*

228. *Russian field sports*, until the middle ages, partook of all the simplicity and rudeness of the most barbarous countries; and the vast forests on the shores of the Wolga, the Ocka, and the Don, then harboured immense numbers of wild animals, as the surrounding plains furnished herds of the wildest people. These semi-barbarians, as we may suppose, were led to hunt these wild beasts more for their skins, and as a measure of retaliation for the loss of their flocks, than for their flesh; animal food being less sought for by the Russian peasantry than by most others; for the fasts of the Greek church, which interdict all animal food, were so numerous as to amount to almost half the days of each year.

229. *The southern parts of this vast country are inhabited by buffaloes*, which exhibit all the natural ferocity and strength of those of America, and are hunted by the Russians much after the American fashion. The reindeer is also found, both wild and tame, in northern Russia; the former is pursued, in various ways, for his flesh and hide; the latter serves all the useful purposes in America to which this valuable creature is applied in Lapland. The wolf is likewise found in plenty throughout all the wild parts of this country, although he finds all classes in league against him here as elsewhere.

Subsect. 1. *The Chase of the Wolf in Russia.*

230. *A wolf hunt annually takes place on the frozen surface of the Wolga.* One of these is very well represented in the *New Sporting Magazine*, vol. iii. p. 363., as follows; but a just principle of humanity forces from the narrator strong reprobation of the feelings both of the actors and the spectators who attended the hunt. "On occasion of one of these entertainments, given by M. Yaroslov, several wolves caught for the purpose were seen lying together in a stable, to be turned out as they were wanted. On the day fixed for the sport, the largest of the wolves was produced; his mouth being confined by a cord and a running noose, they put him in a sort of box running upon wheels, containing one large and two smaller chambers; the former was occupied by the wolf, one of the latter held a fox, and the other two hares. The box was then drawn by a horse down to the river, which was already covered with spectators. There is on this river, as at Moscow and at Petersburg, a space railed off on the ice for sledge-racing — an amusement of which the Russians are very fond,

though they never make bets. The hares were first let out, one after the other, and were pursued by four great Siberian greyhounds, which however ran very ill. The wolf being unmuzzled, two stout fellows took him, one by the ears and the other by the flanks, and set him down upon the ice; when, having looked round him for a few moments, he set off as fast as he could. The snow however was deep, and the dogs, though they were also greatly inconvenienced by it, were too near, and soon came up with him; while two chasseurs on horseback rode round and headed him, barbarously flogging him with their heavy Cossack whips. He now turned round on the dogs, bit one severely, and put the rest on their guard; they no longer came so near, but contented themselves with baying round him. One of the huntsmen now dismounted and commenced flogging him, on which he turned round sharp, made a snap at his hand, and again set off running, in which, by his superior strength, he would soon have tired the dogs, had not the chasseurs checked him. When the speed of the horses and the heavy blows of the whip had tired and half-blinded him, the running-noose was again slipped over his jaws, he was lifted into a sanky, and carried home for another day's torment. The Siberian greyhound, just mentioned, is a very beautiful creature, with silky hair and a **fan-tail**; he is not so swift as our greyhounds, but is said to be more hardy."

231. The present Sir Robert Peel's account of one that took place on the now Emperor of Russia's coronation does not impress one very favourably with the sport. In his lecture on Russia delivered at Birmingham in 1857 on his return from the coronation, he said,—"Then we had a grand *chasse*—in this *chasse* at least 800 horsemen were present, besides about 20 men blowing enormous horns and some 20 dogs. They started hares, and they started foxes, and they started wolves; but all the 800 horsemen with the dogs and the trumpeters could never manage to run down one of them. In fact," said Sir Robert, "they no more understand the chase than you understand what serfs are. Lastly, they had an eagle hunting, in which a Khirgish carried an eagle on his fist, and then having started a fox the eagle flew after him; the chase never extended over more than twenty yards of ground."

232. *A pack of hounds* was kept near St. Petersburg by the British residents of Russia; the performances of which, together with the general character of Russian sporting, being extremely well portrayed in the *Sporting Magazine* for April, 1830, we shall intrude on the liberality of the proprietors to borrow a trifle therefrom. At the village of Garella, twelve miles from the city, where the kennel is established, our author proceeded to inspect "the stables, the kennel, and a menagerie, containing, amongst other animals, several young wolves, who were to be bagged, or rather 'sacked,' and turned out on some future day. The whole establishment was complete, and well arranged. When we were mounted, the show of horses was curious and amusing. There were English, Danish, Circassians, and Cossacks; yet all seemed in good condition, and the whole field presented a sportsmanlike and gentlemanlike appearance. After a ride of about five miles we threw the hounds into some low brushwood, and soon found a hare, that went away for three miles as straight as any fox; and after an excellent run we killed her at the edge of one of those tremendous bogs which are not uncommon in these plains of Ingria. Riding near some of these bogs I observed several large snipes, of the species known in England as the *horseman snipe*. Their flight is heavy when compared with that of the common snipe, and they seldom extend it above two hundred yards; and owing to this circumstance, and their being plentiful at that season, they afford most excellent sport. I once dined where a dish of nearly twelve couple was placed on the table as the result of one day's shooting. After killing a leash of hares we returned to Garella. The objections to their dogs running a variety of game do not exist here in the same force as they do in England, as a wolf or fox chase is seldom interrupted by a hare crossing the scent; and the members of the hunt are always willing to run the risk of their hounds becoming wild as harriers for the sake of a gallop after a wolf or a fox. The wolf affords splendid sport, running even straighter than a fox; but there are very few instances of a wolf having been fairly run down by hounds unaided by greyhounds, or without being headed by horsemen. The country in general is better for harriers than foxhounds, being an immense open tract, partially covered with stubble, low brushwood, and occasional bogs, but frequently carpeted for miles with some of the finest turf for galloping that I ever saw. Hares of two kinds are found on these plains; the common brown hare and a light grey hare, that turns white as the winter approaches. I had an opportunity of seeing one of the latter sort, and was told of a singular instinct affecting them: they do not double like the common hare, but run straight away at first like the fox, evidently, as it would appear, aware that their colour would constantly betray them to their pursuers, and that their only chance is in their speed."

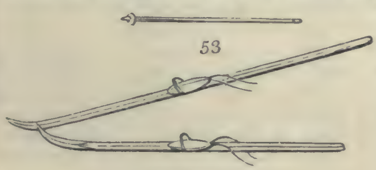
Subsect. 2. *Bear Hunting in Russia.*

233. *The brown bear* (*Ursus* Linn.) is very common in many parts of Russia, and is hunted in various ways according to the kind of country he inhabits, the season of the year, &c. In the winter it is well known the bear becomes sluggish, and seeks a partial or total hybernation, according to the degree of cold experienced. To discover him in his lair, the peasantry use their utmost vigilance, for his retreat is usually very artfully chosen, being commonly in a secluded spot, such as a thicket, an excavation within a rocky mass, overgrown with underwood or roots of a tree, &c. Having traced his habitation, the hunters do

not always venture at once to attack him in his fastness, but proceeding more securely, they cut an avenue, before and behind his lair, of a width sufficient to allow him to pass, which they line on each side with some netting, it matters not how slight; it appears that bears have such an instinctive aversion to any thing like a toil, that they will rather pursue any course than that which leads through something having this appearance. Assured therefore that he will not attempt to escape by any other route than one or other of the avenues, they do not leave it to his choice to determine which, but part of them placing themselves in ambush at one end of the avenue send the remainder to make a great noise at the other. The bear, attempting to escape on the still side, meets his armed foes, and is presently dispatched by their rifles.

234. *The hybernation of the European bear* seldom amounts to perfect torpidity, but on the contrary remits occasionally, when one of them prowls abroad in search of food, in which case he is often tracked home. The individual who thus discovers his hiding-place usually summonses assistance immediately, for it is extremely hazardous for a less number than three persons to attack him. So tenacious is he of life, that he will often fatally wound his assailants after he has been penetrated by two or even three bullets. It is therefore only, when in the hands of three persons, that the enterprise is divested of danger. There are, notwithstanding, Russians who, single-handed, will not shrink from the attack when armed with their *couteau de chasse*, without which none of the hunters stir abroad, nor is it common even for the peasantry of woodland districts to be without this instrument. Thus armed, a regular bear hunter will sometimes court the attack. The bear rushes up according to his invariable custom, extends his huge paws, either to strike or clasp the hunter: at this moment the *couteau de chasse* is plunged into his chest with fatal certainty.

235. *In the long winters of the northern parts of Russia* the peasantry take advantage of the frozen state of the snow to hunt animals by means of *skidas*, or snow shoes (*fig.* 53.), which are manufactured from boards half an inch thick, between two or three inches in width, and of uncertain lengths, but in all turned up in front, after the manner of our skates. That for the left foot is always the longest by four or five feet: thus, if this is nine, ten, or eleven feet long, the right would be five, six, or seven; see figure. This inequality of length enables the wearer to to wheel about in his path. In the cut a spiked staff is seen, which assists the hunter in his progress, particularly in mounting or descending precipices. The use of these shoes is great, but it requires much practice to use them with ease. In Mr. Lloyd's *Northern Field Sports* the importance of the skidas is described in a very interesting manner, and from him we learn that they are universally employed in Russia, Sweden, and Denmark, during the winter season.



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SNOW SHOES.

236. *The wild boar is hunted in many parts of Russia*, but particularly on the shores of the Wolga, where, from feeding on saline plants, these porcine gentry fatten, it is said, to six hundred pounds' weight. Notwithstanding this bulk they are very active, and oppose a most determined resistance to the hunter, who often gets worsted in the encounter.

237. *The winter fishing in the large rivers of Russia*, notwithstanding their being completely frozen over, is a proof what exertions a poor but industrious people will make for food. " A hole is cut, about four feet by two, in the ice, to let down a common drag-net; opposite to this, at the distance they mean to pull up the net, is another hole, about four feet square, they then cut a number of small round holes, at about four yards distant from each other, in a circular form, from the hole where the net is let down to that where it is taken up. At the ends of the two strings, that is, the upper and lower strings which drag the net, long poles are tied; these poles will reach from one round hole to another, where they are directed and pushed under the ice, as they swim on the top of the water, till they come to the biggest square hole, at which they draw them out, and by this means the net encloses the fish it has surrounded; for the upper part of the net is floated at the top of the water under the ice, and the lower part of it is sunk by leads in the same manner as when the river is open; the ingenuity of the operation consists in the contrivance of dragging under the ice."

238. *Horse racing is very fashionable with the nobility and gentry of Russia*, and is much practised both in Moscow and Petersburg. Many of our best bred horses have been exported to Russia, by which the breed there has been greatly improved. The Russian gentry have been long famous for their trotting matches, which are often performed on the snow, the horses being attached to a sledge. A Russian nobleman assured the editor, that, on a beaten snow path, some of the trotters have performed in sledge harness seven and even eight miles within thirty minutes, and it was not unusual to give two or three hundred pounds for a very superior trotter. It is probable, however, that the encouragement of what is conventionally understood by *racing* has lessened the rage for trotting matches.

239. *Racing between the English and Cossack breeds of horses* is described at length by a correspondent in the *Sporting Magazine* for August, 1826, who translated it from a French newspaper. It was to the effect that " The result of several races that took place last year in the neighbourhood of St. Petersburg and in the steppes, and more particularly the well known competition on the 16th of August, between the English and Cossack horses, had given to our great stud-owners and breeders the laudable desire of thoroughly proving the bottom and speed of their horses by running them great distances, in order to preserve with care that breed which should show its superiority in such a contest. The horses from the stud of Count Platoff having won every thing before them, in all races from ten to twenty versts, in which they have been engaged for some years past on the banks of the

Don; but, contrary to public expectation, having failed in longer races of fifty versts, which took place last November, the consequence was, the breed of the count was generally considered as degenerated and incapable of running so long and distressing a race. In order to wipe away this stain, and re-establish the reputation of his horses, Count Platoff proposed on the spot to engage them in a race still longer than any that had taken place. For the particulars of this interesting trial of speed and bottom, we would refer to the original; our limits confine us to state that the result was highly flattering to the excellence of the stud of this distinguished nobleman. The first at the goal was a grey horse called Jason, bred by the count. Jason, which came in, it is said, without being apparently much fatigued, was followed at about three hundred and ninety paces by a horse belonging to the Hetman, of an excellent breed from the Crimea. As the third and fifth horses were also bred by Count Platoff, his point was decidedly gained; and if the account that Jason ran the distance, sixty-seven versts, or about forty English miles, in two hours and five minutes, be correct, the performance was a wonderful one."

240. *The polar bear (fig. 54.)* is met with in some of the Russian dependencies, but it is in Iceland that he holds a sort of sovereignty, and here he is often shot from ships and boats as he passes along with the floating masses of ice. The wild swan also offers a common object of sport to the natives of Iceland during the month of August, at which time these birds moult and are unable to fly. For this sport, they provide themselves with active dogs and quick horses, with which it is said, they chase the swans over the great marshes where they abound, and the dogs being trained to the sport seize the swan by the neck and dispatch him. Wild fowl, as the duck and goose varieties are called by sportsmen, abound here, and are pursued with success, both by the native residents, and by the travellers who visit this vast country.

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POLAR BEAR.

Sect. II. *The Field Sports of Norway, Sweden, and Denmark.*

241. *The field sports of Norway* are most of them characterised by a wildness resembling the habits of the natives, and the romantic and rude scenes which every where present themselves to the traveller. Nature, it is true, here assumes occasionally the pleasing features of cultivation, but in general they are stern and severe. The rocky passes lead to mountainous heights, and in the passage the eye is grieved to view the sad havoc made in the forests around by the peasantry, who have burned vast tracts to save themselves the trouble of felling the trees and clearing away the underwood. By this much of the wild game of the country, both beast and fowl, have been dislodged. The wolf, bear, lynx, and fox, are destroyed by the peasantry, by all the rude methods which characterise the hunting of other northern people. The higher classes, who pursue them *con amore*, employ modes more in unison with the methods followed by the inhabitants of the southern parts of Europe. The feathered tribes common to Northern Europe particularly abound here, and are shot both by the gentry and peasantry. Sea-fowls are very numerous, and bird-catching and egg-finding among the stupendous cliffs is the venturous but favourite employment of many of the borderers.

242. *Bear hunting is forced on the Norwegians by the ravages which these animals commit on their cattle.* Sir Arthur de Capell Brooke, in his *Travels*, relates that, "A little time before his visit to Norway three bears had been killed, which were little inferior in size to the small horses that drew his carriage. For the purpose of destroying them, the peasants are assembled in large numbers, and extending themselves in a line, beat through the part of the forest where the bears are supposed to be, uttering at the same time loud shouts, and firing occasionally their guns. The bears being thus disturbed, assemble together, sometimes to the number of twenty, and the hunters, then collecting their forces, surround them, and commence a general fire upon the grizzly foes. This kind of hunting is attended, to those who pursue it singly, with considerable danger; as if the first shot miss, or any other part than the head be wounded, the enraged animal rushes on the aggressor, whose only dependence must then be upon his speed in escaping, or his courage and address in the use of his *couteau de chasse.* Sometimes, also, by retreating quickly behind a tree, if he have sufficient agility, he may have a chance of escaping. In Norway, however, as well as in the northern parts of Sweden, the peasant undaunted goes thus in pursuit of the bear unattended, relying upon his own skill and activity, and generally returns triumphant. Sometimes he takes along with him two or three small dogs, which, when the bear is found, by barking around him, divert his attention from the hunter, who is thus enabled to get a certain shot."

243. *Our acquaintance with the methods of sporting in Sweden and Denmark* were very limited until the publication of Mr. Lloyd's *Northern Field Sports*, a work replete with entertainment and information, from which we shall be enabled to present a more correct outline of the methods of pursuing the chase in those countries than we might otherwise have done. At the same time we must observe, that neither our limits, nor justice to the work, will admit of our doing more than to offer a meagre portion. The lovers of stirring scenes and true sporting anecdote should refer to the original for a fund of entertainment.

244. *The bear* (*Ursus* Linn.) is not so common in either Sweden or Norway as formerly; both these countries, however, still offer sufficient opportunities of meeting with these animals, which are mostly, if not wholly, of the common brown variety. The degree of the hybernating propensity in the bear seems to be regulated by his geographical distribution. In the southern parts of Russia and Germany it intermits, allowing many breaks to what may be rather called a quiescent than a torpid state. During these breaks the animal bestirs himself and seeks food. In less temperate countries he retires for two or three months to his den; such is the case in both Sweden and Denmark. During the longer periods of hybernation, Mr. Lloyd informs us that the nutritive portion of the last meal eaten becoming absorbed, leaves a hardened stercoraceous mass in the rectum, called, in the vernacular language of the place, *tappen*, which, as might be expected, is parted with as soon as the bear rouses from his lethargy. The Scandinavian bear is said to attain five hundred pounds weight; and it is asserted that one of this description had actually killed three horses, one each night in succession. It is also stated that in a single year, in the province of Dalsland alone, upwards of 1600 head of stock have been destroyed by bears, of which none were of less size and importance than a sheep, hog, or goat.

Subsect. 1. *A Skall, or Swedish Congregational Bear Chase.*

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SWEDISH BEAR CHASE.

245. *A skall in Sweden is a general hunt for the bear* (*fig.* 55.), undertaken by the authority of the state; every house where cattle are kept being bound to furnish one man as a contingent to assist in the pursuit. It embraces, in some instances, a tract of sixty miles in circumference, and is then often attended by as many as fifteen hundred men. The skall is advertised from the pulpit; and the whole district having furnished its contingents, the area to be hunted is regularly surrounded by men, placed not more than fifty paces apart. At a set time this immense line, on being directed, gradually concentrates towards a given point. This gradual march, aided by fires, noises, &c., naturally drives before it all the wild animals within the area. The concentration sometimes occupies two or even three days, before all the assemblage are drawn to the destined focus, during which all parties bivouac for the night in the best manner they are able, for none must quit their post. As these skalls take place only in the summer, when the absence of the sun is of very short duration, and the twilight is so vivid as to allow every object to be almost as distinctly seen as in a gloomy December day in our own country, this is not particularly felt. As the line decreases the circle, the bears, against which the skall is principally directed, are driven from their lairs, and become exposed to the fire of the gunners. It often happens that a bear, finding himself thus hemmed in, attempts to break the line, and occasions much confusion; sometimes serious accidents. His attempts to escape are likewise not unfrequently the means of eliciting some feats of prowess on the part of individuals who attack him. In this battue, besides bears, elks, wolves, foxes, lynxes, and hares, are also destroyed; though the bear is the only legitimate and authorised object of destruction. For a very full and well illustrated description of a skall we would refer to Mr. Lloyd's work.

Subsect. 2. *Ringing a Bear.*

246 *Ringing a bear*. A winter skall is often undertaken, but is conducted on a very limited scale only, and even then is not common unless a bear have been what is called *ringed*; or, in other words, unless the exact spot he has chosen for his winter quarters is discovered. Mr. Lloyd thus describes the method of *ringing a bear*: — "When there is any snow on the ground, and the track of the animal (something resembling, in more respects than one, that of a human being) is made out, a person follows it, until there is reason to believe that the bear may have taken up his quarters in the vicinity. This is indicated by his proceeding very slowly, and in a crooked direction, or rather by his doubling in the same manner as a hare; for, as long as he goes in a straight line, he has no intention of lying down. The man now leaves the track, and commences making an extended ring or circle round the suspected part of the forest. Should he succeed in completing this without again meeting with the track, he of course knows to a certainty the bear is within it. If he finds the animal has proceeded beyond his intended circle, he commences another ring, and thus he continues until he succeeds in accomplishing his object. The size of the ring depends on circumstances; and in consequence, though some may not exceed a mile or two in circumference, others again are six, or eight, or even more. To ring a bear properly requires great experience; and during the operation, if it may be so termed, the greatest silence and caution are necessary." When discovered, he is either shot before he becomes disturbed, or is driven out, as before described.

247. *Elks, wolves, lynxes, foxes, hares, &c.* as already observed, are to be met with both in Sweden and Denmark, and are individually hunted by the gentry with packs of dogs, but more frequently in small parties. All the objects of sport, however, now exist in very limited numbers compared with those formerly found here.

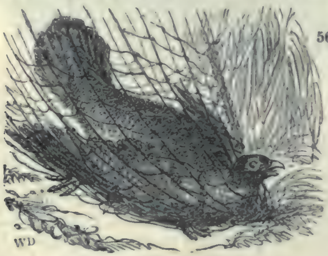
248. *Fox hunting is also a very favourite amusement with the Swedish sportsmen*, but is mostly conducted on foot, the nature of the country being unfavourable to the pursuit on horseback. Swedish hounds hunt the fox it is true, but the pursuers use their guns to save the dogs the trouble of dispatching the game. We therefore wish them joy of their sport, and credit for the conquest. We manage the matter differently, and much more fairly, by pitting him against hounds only of equal speed with his own.

Subsect. 3. *The Feathered game of Northern Europe.*

249. *The principal feathered game of Russia, Norway, Sweden, and Germany*, are the capercalzie (*Tetrao Urgallus* Linn.), the hazel grouse (*Tetrao Bonasius* Linn.), the black-cock game (*Tetrao Tetrix* Linn.), and partridges (*Tetrao Perdrix* Linn.).

250. *The capercaly, capercalze, capercalzie, capercullie, &c.* for it is thus variously written down, is pursued with a cruel perseverance in Sweden. One method by which many are taken, is that of questing them with dogs well broken to the purpose, which having hunted one into a tree, keep up a moderate but repeated barking underneath, so engaging the attention of the bird that he can be approached and shot from below. In winter these birds pack in companies of fifty or a hundred. Mercy on us ! What a sight would this be for an enthusiastic English sportsman !

251. *Another method of taking the capercaly* is described by Mr. Grieff, an author who has written on the field sports of Sweden : — " Most of the forest birds," says this sportsman, " are caught in the autumn by birdlime, or by the usual snares, and also by nets. In all these methods of catching, it is necessary to lead the bird by low rows of brushwood into small pathways. With snares of fine brass wire hanging over the pathway he is easily caught. One of my own methods, by which I have amused myself and caught many birds alive, is by a simple knotted square silk net, of thirty inches width in the square, and the meshes to be so large that the capercaly can easily put his head through ; this is to be hung over the pathway, and fastened slightly to small branches, by weak woollen yarn, just sufficient to support the net in a square form, with some small twigs and leaves of the fir spread over it. Round the net a silk line is passed through the extreme meshes, and fastened to a stout bush. When the capercaly has got his head into a mesh of the net, and finds that something opposes him, he always runs directly forward, when the silk line is drawn close (*fig.* 56.), and the bird lies as if in a reticule, with his wings pressed to his body, unable to move himself, or to tear the net, however weak it may be, although it should be made of twisted silk. In autumn, when the cranberry is plentiful in the forest, by strewing these berries on each side of the net, you entice the birds to advance eagerly." The capercaly is likewise taken at night by means of a light. This light, which is used to discover the bird, rivets his attention also, and he then is shot from his roosting eminence. He is likewise shot when engaged in what in Sweden is called his play, which means his love-song, or amorous exultations among his female favourites ; at which time he is so insensible to all other objects as to be approached with ease. For this latter method February and March prove the best months ; but much will depend on the season, which here, as elsewhere, varies. The value of this bird also makes the pursuit of it constant, by varying the means of its destruction according to circumstances.



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CAPERCALY.

252. *In these countries the black grouse*, according to Mr. Daniel, have been taken by the peasantry in the following manner : — " Huts full of loop-holes, like little forts, are built for this purpose in the woods frequented by these birds. Upon the trees, within shot of these huts, are placed artificial decoy birds, commonly made of black cloth, with the marks of the natural fowl painted. As the grouse assemble, the company fire through the openings, and so long as the sportsman is concealed, the report of the gun does not frighten away the birds ; several of them may therefore be killed from the same tree. If by chance three or four are placed on branches one above another, the sportsman has only to shoot the undermost bird first, and the others gradually upwards in succession ; the uppermost bird is earnestly employed in looking down after his fallen companion, and keeps chattering to it till he becomes the next victim."

253. *In Siberia they are thus entrapped :* — " A certain number of poles," Mr. Daniel says, " are laid horizontally on forked sticks, in the open forests of birch ; small bundles of corn, by way of allurement, are tied on them, and at a small distance certain tall baskets of a conic shape are set, with the broadest part uppermost. Just within the mouth of the basket is placed a small wheel, through which passes an axis, so nicely fixed as to admit it to play very readily, and on the least touch, either on one side or the other, to drop down, and again recover its situation. The black grouse, which are soon attracted by the corn on the horizontal poles, first alight upon them, and, after a short repast, fly to the baskets and attempt to settle on their tops, when the wheel drops sideways and they fall headlong into the trap, which is sometimes found half full."

254. *Snipe shooting in Sweden must be excellent sport*, according to the accounts of both Grieff and Lloyd. The latter says of it that, " If a person be well acquainted with the

ground, better snipe shooting is hardly to be met with in any country. As a proof of this, I have bagged upwards of thirty brace of these birds in seven or eight hours. These were either the common or the double snipe, as I was careless of wasting my powder and shot about the jack, or half-snipe. These birds, when plentiful, afford very excellent sport; and there is no shooting that presents such a variety of shots, scarcely any two being alike. When shooting snipes in the vicinity of Gothenburg, one's sport mainly depends on the weather. If it blows hard from the westward, a strong current sets into the river from the North Sea; this impedes its course and causes it to overflow its bounds, in which case many of the marshes become partially overflown, when the snipes, from finding little shelter, usually lie light, and are difficult of approach. If, on the contrary, the wind should be moderate, or from the eastward, and the water consequently low, these birds have abundance of cover, and it is easy therefore to get within range of them. The double or solitary snipe I usually found singly, or at most in pairs. They are generally so fat as to be hardly able to fly; indeed, if flushed, their flight was usually very short, and they presently settled again. They were nearly twice as large as the common snipe, and from their heavy and steady flight they presented the easiest mark possible. They are considered to be most delicious eating. Four couple was the greatest number of these birds I ever killed in Sweden in any one day; but Mr. Grieff we know to have frequently killed a much greater number. It is at the end of the month of July, when the meadows are mowed, the shooting of these birds with the pointer commences, and continues till towards the end of September. They may also be shot during the spring; but I have observed this has diminished the autumn shooting. In the whole round of sporting, this affords one of the greatest pleasures. These birds are easy to shoot; and in some places fifty or sixty, aye, considerably more, may be shot in a day, particularly in autumn, when they are so fat that they almost burst their skins." (*Lloyd's Northern Field Sports*, vol. i. p. 363.)

Subsect. 4. *The Fishing of Sweden and Norway.*

255. *The fishing in Sweden and Norway* is excellent, as our brethren of the rod are now well aware. The lamented Sir Richard Sutton used to repair there every summer for fishing. Mr. Lloyd first drew attention to it. "When in Sweden," he says, "amongst other fish, we had the pike (*Güdda*), the perch (*Aborre*), the salmon (*Lax*), the trout (*Lax-öring*), the grayling (*Harr*), the charr (*Röding*), the roach (*Mört*), the bleak (*Löga*), the eel (*Al.*) Besides these we had the *lake* (called *burbot* in the dictionaries), which was sometimes taken near twenty pounds in weight; the *ruda* (designated by the same authority the *crusian*), seldom exceeding two pounds; the *brax*, a sort of bream, ten or twelve pounds; the *id* (Latin, *Cyprinis Idas*), a species of chub, five or six pounds; the *nors*, or *slom*, a small fish of delicious flavour; the *ströfling* and the *sik*, the latter is described in some English publications as the *gunniard.* With the exception, perhaps, of one or two particular waters, there were no means of any kind adopted for the preservation of the fish; every one had the privilege of taking what he could; and, in consequence, all manner of devices, by nets and otherwise, were put in practice to effect that purpose. This latitude, however, though a great blessing to the poorer inhabitants, as it enabled them oftentimes to obtain an abundant supply of food at little expense, was probably the cause of the fish seldom attaining to any very considerable size; for instance, I never remember hearing, in an authentic shape, of a pike exceeding from thirty-five to forty pounds in weight. This a little surprised me, as I should have thought, from the great extent of many of the waters, those fish might have been much heavier." (*Ibid.* p. 213.) Mr. Lloyd further observes, that, "Successful as the net might be supposed to be in such waters, with the assistance of a boat, by spinning a bleak, or other small bait, I could kill more pike, perch, &c., with my rod in a day, than could be taken in the same space of time in any other manner. Pike and perch, the latter of which were occasionally to be met with of five or six pounds' weight, afforded perhaps the best angling in the vicinity of my quarters, both being tolerably abundant in the adjacent lakes and rivers. Of the former I sometimes caught a good many, though few of them were of any considerable size; two of sixteen pounds each were the largest I ever killed while angling in that part of the country. On one occasion I caught eighteen pike in the course of an afternoon; the aggregate weight of these, however, was only between fifty and sixty pounds. On the Klar, one particular day, and with indifferent flies, I killed forty-two brace of trout and grayling, weighing together near seventy pounds. Grayling, however, formed by far the larger portion of my spoil; none of them exceeded two pounds in weight, though I hooked and nearly killed one of double that size. The best trout I took weighed five pounds, though there were doubtless very much larger in the river. There was a difficulty, however, in procuring small fish; and in consequence I had hardly an opportunity of using my bait-tackle, by which, as it is well known, the best fish may generally be taken." As there is no reason to doubt Mr. Lloyd's veracity, Does not this account, brother Piscator, make you "half mad" to be up and at 'em too? And be assured, were the author twenty years younger, he would do so too.

Subsect. 5. *The Reindeer of Lapland.*

256. *The reindeer* (*Cervus Tarandus* Linn.) is the main support of the Laplander. To him this valuable animal supplies the place of the horse, the cow, the sheep, and the goat; and in the inhospitable regions he inhabits his dog and his rein constitute at once his tried friends and faithful servants. By the dog he is watched and guarded, and by the rein himself and family are transported from place to place. To a sledge the reindeer is attached by a cord, which passes under the belly to the collar; the reins are a cord attached to the horns. (*Fig.* 57.) The harnessed reindeer is pressed forward by a goad, and is further encouraged by the voice; and will then, it is said, continue its pace for thirty miles without stopping.

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LAPLAND SLEDGE.

257. *Hunting the wild reindeer* is thus described by Captain Parry among the Esquimaux; and we have to observe, that it is precisely the same method as that practised by the Laplanders: — "The reindeer visits the polar regions at the latter end of May or the early part of June, and remains until late in September. On his first arrival he is thin, and his flesh is tasteless, but the short summer is sufficient to fatten him to two or three inches on the haunches. When feeding on the level ground, an Esquimaux makes no attempt to approach him, but should a few rocks be near, the wary hunter feels secure of his prey. Behind one of these he cautiously creeps, and having laid himself very close, with his bow and arrow before him, he imitates the *bellow* of the deer when calling to each other. Sometimes, for more complete deception, the hunter wears his deer-skin coat and hood, so drawn over the head as to resemble, in a great measure, the unsuspecting animals he is enticing. Though the *bellow* proves a considerable attraction, yet if a man has great patience he may do without it, and may be equally certain that his prey will ultimately come to examine him; the reindeer being an inquisitive animal, and at the same time so silly that, if he sees any suspicious object which is not actually chasing him, he will gradually, and after many caperings and forming repeated circles, approach nearer and nearer to it. The Esquimaux rarely shoot until the creature is within twelve paces, and I have frequently been told of their being killed at a much shorter distance. It is to be observed that the hunters never appear openly, but employ stratagem for their purpose; thus, by patience and ingenuity, rendering their rudely formed bows, and still worse arrows, as effective as the rifles of Europeans. When two men hunt in company, they sometimes purposely show themselves to the deer, and when his attention is fully engaged, walk slowly away from him, one before the other. The deer follows, and when the hunters arrive near a stone, the foremost drops behind it and prepares his bow, while his companion continues walking steadily forward. This latter the deer still follows unsuspectingly, and thus passes near the concealed man, who takes a deliberate aim and kills the animal. When the reindeer assemble in herds, there are particular passes which they invariably take, and on being driven to them are killed by arrows by the men, while the women with shouts drive them to the water. Here they swim with the ease and activity of water dogs, the people in *kayaks* chasing and easily spearing them; the carcasses float, and the hunter then presses forward, and kills as many as he finds in his track. No springs or traps are used in the capture of these animals, as is practised to the southward, in consequence of the total absence of standing wood."

Sect. III. *The Field Sports of Germany.*

258. *As the animals of Germany* are essentially the same as those of Norway and Sweden, the chase of them does not vary very greatly, except that sporting here is conducted on a somewhat more extensive scale, and with a reservation not practised in either Sweden or Denmark, where the governments are less despotic. Game in Germany was so strictly preserved a century back, that it was not uncommon for a poacher, caught in the act of destroying a deer, to be hanged even without a formal trial; or, probably, he might be made to expiate his crime on the back of a stag, to which being fastened, and the animal turned loose, he was dragged by the affrighted beast until death stopped the career of the rider and the ridden.

259. *The red deer in the Hartz mountains* were formerly followed by a lawless set of desperadoes; and, as it was well known by them that certain death followed detection, the poachers of this class were seldom taken alive; while the keepers, who watched the game, were ever in danger of being picked off by the rifles of these unerring marksmen, whose glory it was thus to revenge the fate of a father, brother, or friend.

Subsect. 1. *Wolf Hunting in Germany.*

260. *Wolves*, which exist in immense numbers in the vast forests of Germany, are objects of great annoyance to the natives, and, as such, are not only hunted by congregational meetings of the peasantry, and pursued by the wealthy with all the ardour of the regular chase, with well trained packs of wolf-hounds, but are also followed to destruction by every other possible method, poison not excepted. Bewick informs us, that " It is common in sequestered parts of the German forests to hang up a large piece of carrion on the branch of a tree, having previously made a train of some miles in length, leaving small pieces of putrid flesh here and there to allure the wolves to the spot: they then wait till it is dark, and approach the place with great circumspection, where they sometimes find two or three wolves assembled, leaping up, and straining themselves to catch the bait, which is placed just within their reach; and while the animals are busily employed in this way, the hunters seldom fail to dispatch them (with their rifles, as we presume.) In a convenient place, at the foot of a declivity, they make a small enclosure of strong pales, so high that the wolf, having once entered, cannot return again. An opening is left at the top of the bank, and a sheep that has been long dead is the bait; to which he is allured by long trains, made from different places which he is known to haunt. As soon as he arrives at the spot, he examines every part of the enclosure; and finding no other way to come at the booty, he precipitates himself to the bottom, and having made a plentiful meal, endeavours in vain to re-ascend. His disappointment at not being able to get back is productive of the most dreadful howlings, which his enemies hearing, hasten to the spot, when they either take him alive, or dispatch him with bludgeons. It is remarkable that, so soon as this animal finds there is no possibility of escaping, his courage, it is said, entirely forsakes him, and he becomes so stupified with fear that he may be killed without any attempt at resistance, or indeed may be taken alive without much danger. Wolves are sometimes taken in strong nets, into which they are driven by the hunters, who surround a large tract of land, and with drums, horns, and other instruments, accompanied with loud cries from a large company assembled upon the occasion, drive the animals towards the entrance of the nets, where they are entangled, and killed with clubs and hatchets. Great care must be taken to secure them at first; if they recover from their consternation, they easily escape by tearing the net to pieces."

Subsect. 2. *The Battue in Germany.*

261. *The battue, or wholesale slaughter of game*, is very fashionable in Germany. Count Veltheim writes to a friend in England, — " I assisted, even during the coldest weather, in a shooting party six following days, from morning to evening, without any detriment to my health, though several partakers of the sport had their noses, ears, and fingers frozen. We had last season, in this part of Germany, an uncommon quantity of game of all kinds; in course our shooting parties were very successful. I assisted at one of Baron Asseburg's, near the mountains of the *Harz*, where a company of a dozen shots killed, in three days, 13 deer, 56 roes, 10 foxes, and 327 hares. We could have killed, at the same time, a dozen wild boars, if the proprietor of the estate had not wished them to be spared till the next season. Two friends of mine, General Count Kielmannsegge and Baron Herzeele were, a fortnight since, at a shooting party in the rich plains near Magdeburg, where there were killed, in four days, 2,400 hares. But I do not like such feats, which are more a massacre than a sport; partly, because I am of opinion that there should be, at all sports, some chance and skill; and partly, because I like shooting the best, where different kinds of game are expected, although not in such immense quantities." (*Sporting Magazine*, vol. xi. p. 309.) " When the king of Naples (the greatest sportsman of Europe) was in Germany, about the year 1792, it was said in the German papers that, in the different times he had been shooting in Austria, Bohemia, and Moravia, he had killed 5 bears, 1,820 wild boars, 1,968 stags, 13 wolves, 354 foxes, 15,350 pheasants, 1,121 rabbits, 16,354 hares, 1,625 she-goats, 1,625 roebucks, and 12,435 partridges." The following is an account of the destruction of game in Bohemia by a hunting party, of which the king of France made one, in 1755 :—" There were twenty-three persons in the party, three of whom were ladies; the Princess Charlotte of Lorraine was one of them. The chase lasted eighteen days, and during that time they killed 47,950 head of game and wild deer; of which 19 were stags, 10 foxes, 18,243 hares, 19,545 partridges, 9,499 pheasants, 114 larks, 353 quails, and 454 other birds. The emperor fired 1,798 shots, and the Princess Charlotte 9,010; in all there were 16,209 shots fired."

262. *A Hanoverian boar hunt has been thus described :* — " At the extremity of the enclosure a sort of pavilion was placed for the accommodation of the king, had his majesty attended. It was in his absence occupied by the royal sportsmen, with the Duke of Cambridge at their head. None were allowed to use fire arms but his royal highness, with the Archduke Ferdinand of Austria, and the Duke of Mecklenburg Strelitz. At eleven o'clock the work of destruction commenced, and a herd of boars came down the

extremity of the enclosure, where the sportsmen, if so they could be called, stood ready to attack them, the peasantry at the same time raising loud yells through the woods, and keeping up a kind of wild concert with the sound of the bugle as they closed in upon their prey. Thirty-five victims fell in the fatal attack, and they were literally butchered. The poor animals did not attempt any resistance; and it was shocking to see the torture in which they were kept, from their assailants not being adroit enough in the use of the spear to put them properly out of existence. I saw a boar running about the ground with his entrails hanging out; and one of the young dukes of Brunswick thought it a proud exploit to place his spear in the very part where a mortal wound had already been inflicted. With the exception of Lord Clanwilliam, who acquitted himself like a true sportsman, there was scarcely an individual that attacked the prey in a fair manner. Sir Edmund Nagle, after having laid four boars dead at his feet, exclaimed in the language of his profession as a tar, —'Me! see what I've done; I have stove in the gun-rooms of four pigs by ——.' There were ninety boars killed in all; but the number of stags that fell was not considerable. The day was very wet, which served to give a deeper shade of horror to a scene which no Englishman would ever again desire to witness."

263. *The quantity of game on some of the baronial territories of Germany is still great*, but a few years back it was much greater. "In 1788 a party of ten persons, at the chateau of Prince Adam Daversperg, in Bohemia, who were out five hours on the 9th and 10th of September, allowed that the first day 6,168 shots were fired, and 876 hares, 259 pheasants, and 362 partridges, besides quails, rabbits, hawks, &c., were bagged, or rather *waggoned*. On the second day 5,904 shots were discharged, and 181 hares, 634 pheasants, and 736 partridges, were killed, in addition to these, in the evening of the second day, were picked up 42 hares, 65 pheasants, and 103 partridges (in all 210 pieces), which could not be found in the heat of the action. The number of shots in the two days were 11,972; the game carried home were 1,099 hares, 958 pheasants, and 1,201 partridges; in all, 3,258 pieces, besides a variety of small game. N. B. The birds were all shot on the wing. When we are told that the domain from which this quantity of game was slain had no peculiar mode adopted to assemble it, it speaks the only excuse for such wilful murder, that of relieving the district from a redundancy of mouths which, if permitted to increase, it might be unable to support. In Germany, during the month of October, 1797, Prince Lichtenstein, and eleven other gentlemen, killed in one day, when they were out fourteen hours only, 39,000 pieces of game; it was of all sorts, but chiefly hares and partridges. The king of Naples and Sir W. Hamilton killed 800 head of game in the neighbourhood of Casarte (640 of which were partridges), in a very short space of time." (*Daniel's Rural Sports*, vol. iii. p. 87.)

264. *Horse racing is much practised in Germany*, where great attention is paid to the breeding of horses. The King of Wirtemburg is a great breeder, both of horses and cattle, as appears by the following extracts from the *Times* correspondent's account of the recent meeting of the Emperors at Stuttgart. After stating how the Emperor of Russia and suite went out boar hunting, he says:—"The Emperor Louis Napoleon in the meantime was visiting, accompanied by the King, his Majesty's private studs at Weil, Scharnhausen, and Klein Hohenheim, establishments at which none but horses of pure Arabian breed are reared. The breeding of horses, from which it is believed, on good archæological grounds, that Stuttgart formerly received its name, but which in modern times was totally neglected here, has been revived by the present King with signal success. Not only do all the royal teams consist of beautiful well-matched full-blood Arabians, but also the cavalry horses are superior to any animals I have ever seen in the ranks; there is hardly a horse in the Lancers regiment, which has been doing duty at the Palace the last few days, that an English gentleman might not be proud to ride in Rotten-row. The same excellence is noticeable throughout the country as regards both horses and oxen, the whole of which improvement of the breed is the result of the present King's untiring exertions, who, for his various merits in the promotion of agriculture and cattle-breeding, has been more than once dubbed by the united agriculturists of Germany, 'the King of the farming interest.'" At Naples, and other places on the continent where English most do congregate, races have been established, and few crowned heads are insensible to the value of our breed of horses, as the exportations to almost all the countries of Europe testify. In the year 1856 there were twelve subscribers to our *Racing Calendar* in France, ten in Hungary, six in Prussia, and smaller numbers in other parts of the continent.

CHAP. V.

The Progress of Field Sports in France.

265. *To this mighty nation*, whose influence has spread over all the countries of Europe, at once the parent of great undertakings, and the *arbiter elegantiarum* in matters of taste,

we might naturally look for something worthy of notice on the subject wherewith to grace our pages; but whether it be that our nationality blinds us in all that relates to field sports, it is but seldom that, on matters appertaining to the chase, even the most liberal Englishman is heard to say, " They order these matters better in France." The fact is that sporting, in the English acceptation of the term, is not their *forte*.

Sect. I. *The early Practice of Field Sporting in France.*

266. *The chase in the earliest period of the history of Gaul* partook of the active but semi-barbarous features of those times. The stag, the bear, the boar, the wolf, &c., were pursued from necessity as much as from inclination; but the methods were rude, accompanied with no unity of purpose, and were devoid of many of those forms and ceremonies which graced and ornamented the sport in after times. It will not therefore gratify the reader to detain him further with descriptions of these early practices; but we will proceed at once to a period, when the advancement of the arts and the spread of knowledge may be supposed to have materially remedied these defects.

267. *The conquest of Gallia by the Romans* greatly altered the manners and habits of the rude people who inhabited this extensive territory; and if it sowed the seeds of luxury among them, it also planted numerous scions of practical knowledge; and the very means by which their conquests were obtained improved their methods of pursuing the chase; for nothing tends more to systematise that petty tyranny, which man exercises over the beasts of the field, than the experience he gains in the warfare with his fellows, whether it be offensive or defensive. Without doubt, therefore, the Roman discipline, which had vanquished the barbarous Celts, taught them in turn to devise new plans for subduing the brute enemies around them.

268. *The introduction of the Roman amphitheatres*, and the feats of the arena, which in those days were exhibited at Arles, Orange, Autun, Treves, Nismes, Bourdeaux, and Paris, must have occasioned considerable alterations both in the sporting practices and tastes of the Gauls. Paris, which was early destined to become at once the nursery of the arts and the cradle of luxury and dissipation, had particular reason to hail the conquest; for it was here that Julius Cæsar conducted, in the most exemplary manner, the administration of this vast country. The useful and the ornamental arts were alike extended by him; while he at the same time cultivated a warlike taste, which for centuries after kept surrounding nations in awe, by accustoming the Parisians to contests with wild animals, and by transferring the daring enterprises of the Roman circus to amphitheatres of their city. The kingdom of the Gauls was, however, destined yet to witness a severe reign of despotism, the whole nation almost, eventually, becoming serfs or slaves; and, from the few freemen who remained, their lands had been taken and converted into vast parks for the preservation of wild beasts. Such was the tyranny of the lords of that time, that to be only caught at large in one of those enclosures was often punished with death. Any trespass with a weapon in the hand was a signal for immediate dispatch. The enclosed domains, situated in campaign countries, were planted for the protection of the beasts within, and hence arises that appearance of regularity in the disposition and growth of the royal and other forests of the princes and nobility of France. Hence also it is that, but in few provinces, is there any thing like that wild and grand luxuriance of timber to be seen, which graces the picturesque scenery of England.

Subsect. 1. *The Sporting Establishments of France in former times.*

269. *In the times to which we have just referred the harbour for game was great*, as the preservation of it was watched and protected by the most arbitrary laws; and the consequent increase of it was such as to create no surprise at the accounts of the slaughter which we are told was committed in the early congregational huntings, ere modern language had ycleped them *battues*. We may suppose that Paris and its neighbourhood would form the centre of the sporting, as well as of other gaieties; and that the grand establishments for this purpose, within fifty miles of the metropolis, almost swallowed up the rest. It was there, even in early times, that pageantry held its reign; and as the chase was a privilege of royalty here as well as in other countries, it may be supposed that spectacles of a sporting nature would be more common in and near Paris than in any other portion of the kingdom. " At an interview between Queen Jane of Bourbon, wife of Charles the Fifth, and the Duchess of Valois his mother, the Duke de Bourbon gave a grand hunt to the two princesses in the neighbourhood of Clermont. In the course of the chase he caught a stag, and its foot he caused, with great gallantry, to be presented to them by his *grandveneur*." In the more remote districts of France bear hunting was formerly pursued, as well for the sport afforded, as to rid the country around of so dangerous a neighbour. An old print in our hands (*fig.* 58.) represents the bear in mortal combat with the strong hounds then employed, and fearfully mangling one of his adversaries.

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BEAR HUNT.

270. *The manner of hunting in France* during the early part of the sixteenth century, we are told by Lord Herbert, was as follows:—" The Duke Montmorency having given orders to the tenants of the town of Merlon, and some villages adjoining, to attend me when I went

a hunting, they upon my summons usually repaired to these woods, where I intended to find my game, with drums and muskets, to the number of sixty or eighty, and sometimes one hundred or more persons, — they entering the woods on one side, with their noise, discharging their pieces, and beating their said drums; we, on the other side of the said wood, having placed mastiffs and greyhounds, to the number of twenty or thirty, which Monsieur de Montmorency kept near his castle, expected those beasts they should force out of the wood. If stags or wild boars came forth we commonly spared them, pursuing only the wolves, which were there in great numbers, of which we found two sorts — the mastiff-wolf, thick and short, though he could not indeed run fast, yet would fight with our dogs, and the greyhound-wolf, long and swift, who many times escaped our best dogs; though when overtaken he was easily killed by us, without making much resistance. (*Captain Brown's Anecdotes of Horses*, p. 131.)

271. *In the seventeenth century the splendour of the chase in France was great.* The equipage or hunting establishment of Louis the Fifteenth was extremely grand, and the turn-out of carriages, horses, guards, and attendants, magnificent. Many of the nobility had, what they called, a *voiture de chasse*, which was frequently drawn by three horses abreast, in imitation probably of the war chariots of their Roman masters, but which latter, it may be remarked, presented four horses abreast instead of three. They *now*, however, "manage these things better in France," and content themselves with riding on horseback to the covert side: it was not, however, until after the time of Louis the Sixteenth that this effeminate mode of sporting was abandoned.

272. *Coursing as a species of the chase* has been especially stated to be of Gallic origin; and ere we pursue the general field sports of the country, we shall quote what Mr. Daniel says on the subject, referring however for our own opinion to our *History of Coursing*, infrà. "The opulent and luxurious inhabitants of Gaul," says Mr. Daniel, "used to send out good hare-finders early in the morning to those places where it was likely to find hares sitting; they returned to their employers with an account of the number of hares found, who then mounted their horses and took out their greyhounds to course them. Not more than two greyhounds were to be run at once, and those were not to be laid in too close to the hare, for although the animal is swift, yet when first started she is so terrified by the hallooing, and by the closeness and speed of the dogs, that her heart is overcome with fear, and in the confusion very often the best sporting hares were killed without showing any diversion; she was therefore allowed to run some distance from her seat, before the dogs were set after her. The best hares were those found in open and exposed places. They did not immediately try to avoid the danger by running to woods, but, whilst contending in swiftness with the greyhound, moderated their own speed according as they were pressed. If over-matched in speed by the dogs, they then tried to gain ground by frequent turns, which threw the dogs beyond them, making at the same time their shortest way to the covers or nearest shelter. The true sportsman, even in Arrian's time, did not take out his dogs to destroy the hares, but for the sake of seeing the contest between them: and was glad if the hare escaped, which was never prevented by disturbing any brake in which she might have concealed herself after beating the greyhounds."

SECT. II. *The present State of Field Sports in France.*

273. *The field sports of so large a country as France*, which extends from 42° 20′, to nearly 51° of N. lat., and from 4° 50′ W. to 8° 20′ E. long. from Greenwich, and presents an area of two hundred and four thousand square miles, must naturally be supposed to be much diversified, both in the nature of the animals pursued and in the methods adopted for their capture. Allowing the general surface of this kingdom to be flat, yet at its extremities it presents Alpine heights, and possesses within itself so wide a range of temperature as will furnish means of subsistence for beasts of an extended geographical distribution. The wild quadrupeds which are here chased for sport are the wolf, wild boar, red, fallow, and roe deer, the fox, hare, and rabbit. Their feathered game also assimilate much with our own. Grouse, it is true, are less common here, but the red legged partridge (*fig.* 59.) abounds. The French sportsman, when pheasants, partridges, and quails are not to be met with, wisely contents himself with bagging fieldfares, thrushes, blackbirds, larks, &c. &c.

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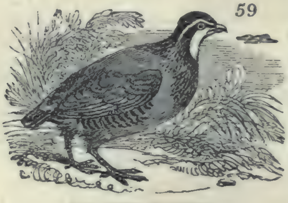

RED LEGGED PARTRIDGE.

274. *The practice of field sporting among the French* is by no means conducted so methodically as it is in England, for which reason we are apt to hold the Gallic sportsmen rather cheaply. It is, however, too national to judge of their sporting practices altogether by our own standard; for locality begets, and even forces, some difference in the methods employed, as the animals pursued are in habits and manners somewhat at variance with our own. The laws of France may also be considered as one great cause of many seeming anomalies in their field sportings; for while every facility is given to poaching, by allowing game to be sold in the common market, without restriction, by unlicensed venders, the *gardes de chasse*, or gamekeepers, both public and private, are troublesome in the extreme in warning off even privileged persons, unless their forbearance is purchased; in which case not only the national guards, but even those in the immediate pay of individuals, are too easily tempted to break their trust for a few franks. A shooting privilege, or *port d'armes*, is as necessary in France as a license is with us, but the cost is very different. It certainly is too true for the sport-

ing reputation of the French gentry, that the majority appear addicted to what in England is called *pot-shooting.* This is evident throughout all their sporting practices, and in all the non-sporting means they employ to obtain game. Dogs of different kinds are taken out together; and guns, nets, and snares are not unfrequently all at work at one and the same time. All is *game* to the French sportsman, from the stag to the squirrel, and from the bustard to the bunting. His hunting and shooting are seldom confined, as with us, to any individual object, but extend to whatever he may meet with; and thus a French chasseur, on witnessing a fox chase in England, and observing that some young hounds were whipped off the scent of a hare they were near chopping, expressed both surprise and derision at the sight. This gentleman was probably cousin-german to him who, on hearing an Englishman exclaim, "how admirable!" the sport which a fox had shown "in a charming run of two hours and a quarter," exclaimed, "*Ma foi,* he must be worth catching when you take so much trouble. *Est il bon pour un fricandeau?*" Either of these gastronomic hunters would have been equally surprised at an English sportsman who, avoiding to shoot into the midst of a whole covey of partridges closely packed together on the ground, would prefer to take his chance of a single bird on the wing.

275. Fox hunting upon the English system has often been attempted in France, but never with much success. We believe the late Hon. Martin Hawke had the best sport of any about Tours, some thirty years ago: but both the Boulogne and Versailles hounds were failures; and we suspect that the present Pau ones are no great things. We saw a good deal of the Boulogne ones, originally taken there by a Mr. Cresswell, and afterwards converted into a subscription pack, managed by General Charité and Mr. Surtees, which, though they showed good sport with bag foxes in the open, made little out with wild ones in the forests, the latter being generally far too fat to run. It is, however, the native packs that a reader feels most interest about; for a full account of which we may refer them to an amusing work by the Hon. Grantley Berkeley, lately published, called "A Month in the Forests of France," from which we make the following extracts:—

276. "The kennel, adjoining the château, consisting of a lodging-house and yard, was to that extent perfection itself, with plenty of clean wheat-straw on the bedstead—site, aspect, and all, it could not be amended; 'but' (how I hate that much-conveying monosyllable!) in that kennel I beheld about seventeen hounds, in every possible and impossible stage of disease and incapability, and not above two or three among them that even looked fit to follow an animal of chase. There tottered Saxon—the great, able young bloodhound, in the prime of life, who, single-handed, had often hunted down, in runs of from two to four hours' duration, the wild New Forest deer, and whom I had sold to M. d'Anchald in the previous spring—scarce able to sustain himself, nor possessed of energy enough to know me; as thin as a whipping-post, as hollow in his coat as a 'French hen,' and nearly blind from the yellow matter accumulated in the corners of his eyes. 'What on earth is the matter with Saxon?' I exclaimed. 'Nothing,' was the reply. 'Nothing! Why, he is dying, and so are three parts of the hounds. All are skeletons, save one or two, who are as fat as prize pigs; all are more or less eaten up with the mange, and even the best-looking are in no condition.'

277. "'What makes the most of them so thin?' 'I don't know;—they eat what they like.' 'What makes that one so fat?' 'I don't know: he has the same chance as the others.' 'How do you feed them?' 'We let them all in together.' 'Good Heaven! What do you let them eat?' 'Barley bread, soaked in hot water.' 'No flesh?' 'Oh yes, sometimes.' 'Well, the hounds are dying: how do you account for it?' 'Oh, perhaps some very hot weather. We took them out the other day to an attack of young wolves, and, after a time, they all lay down; and they have looked bad ever since.' Reader, dear brother huntsman, will you believe it, that these poor hounds had lain cooped up in their kennel *from March till the end of August,* and *then, without any previous exercise* or trot on the roads, or rule as to the quantity of fat they carried, and not having had any meat, they were taken out into the severest and best-scenting woods imaginable, and put to hunt cub wolves, in a climate warmer than that of England, and on a very hot day?"

277. *France,* as being in general a campaign country, renders it less favourable to the protection of game than our own. It is true the forests are immense, but they are in most instances bare of underwood, consequently the game is easily disturbed, and as easily escape, which circumstance may in some measure account for the multiplication of the means used to arrest the progress of it; thus, in deer hunting, boar hunting, fox hunting, and hare hunting, the chase by the native French is mostly pursued with fire-arms, and the death is more frequently perpetrated by what we should call *foul* means, than by the *fair* rules of the sport.

278. *The royal huntings of the Bourbons* long dazzled the public. The chase appeared to be the grand purpose of one duke's life, and his ample means enabled him to pursue it to its fullest extent, and to conduct it on a scale of Eastern magnificence. Chantilly, the residence of this royal duke, exhibited the most extraordinary sporting establishment in Europe. The buildings connected with it are equally grand and extensive. Of the château it is not to our purpose to offer any thing; but the unrivalled pile of stabling,

kennelling, and other sporting appurtenances, particularly deserve our notice. This edifice, constructed from the designs of John Aubert, which was begun in 1719 and finished in 1735, presented a *façade*, ninety-six fathoms and a half in length and nearly ten in breadth. At the two extremities were two large pavilions, sixty-five feet square, and forty-two and a half high from the ground-floor to the entablature; each of them had three porticoes on the several sides. In the middle of the façade was a pavilion larger and more lofty, containing the principal entrance to the stables; above which was a bas-relief, representing three horses in different attitudes; the whole ornamented with Ionic columns, trophies of arms and the chase. The domed top, sixty-three feet round, and ninety-two high, is seen crowned with the "*horse of France*," similar to that seen on the bridge turning to the Tuilleries. The inside of the stables measured ninety-three fathoms in length; were thirty-six feet wide, and forty-two and a half in height from the ground to the commencement of the dome; which proportions would render this place uninhabitable even for horses, if in winter a fire were not constantly kept up. The vault, which is octagonal, is lighted by large oval windows; the whole is ornamented with garlands and trophies of the chase, heads of stags and boars. Below the dome, and in front of the principal entrance, is a recess, forming a grand arcade, under which was a magnificent fountain, or cascade. A grotesque head discharges water into a shell, from which it falls in a sheet into a large reservoir, in the middle of which are seen two leaden horses as large as life. At the back of the fountain is seen the following inscription, supported by two genii: — "Louis Henry de Bourbon, seventh prince of Condé, erected these stables, and the buildings dependent on them. Begun in 1719 and finished in 1736." The stables are capable of holding two hundred and forty horses, over which are twenty-four apartments, separated by a corridor forty fathoms in length.

279. *The open riding-house*, situated between the stables and the *pavilion of the street*, is a circular edifice, twenty fathoms in diameter; the *court of carriages* is fifty-three fathoms and four feet long, by twenty-two fathoms and four feet wide; the decorations are in the same style as those of the stables.

280. *The great dog kennel*, for the reception of staghounds, displays heads of stags between the windows; and at the two extremities a fountain, ornamented with a stag's head, discharges water into a reservoir, where the dogs drink. There is also a winter kennel for the same hounds, warmer, but less ornamented.

281. *The kennel for the boarhounds is very extensive.* The walls are ornamented with paintings resembling wild boars, and a boar's head throws water into a cistern. The exterior *façade* of this building, which looks towards the village of Chantilly, is thirty-six fathoms in length, and is terminated by the pavilion of the stables and that of the dog kennels. The number and nature of the occupants of this vast pile were in due keeping with the whole. Of horses, there were usually more than two hundred. Of dogs, there were sixty couple of staghounds, eighty couple of boarhounds, and forty-five couple of chevreuil (roebuck) hounds. The numbers of piqueurs, gardes de chasse, grooms, coachmen, postilions, helpers, &c., &c., were also very great. Every day had its allotted sport; and such was the quantity of game within the vast enclosures of the forest attached to this princely residence, that a blank day never occurred, and scarcely a day throughout the year was suffered to pass without some offering to Diana. To prevent, however, the satiety of confinement to one spot, this modern Nimrod would, after hunting at Chantilly, take a hasty dinner and then be transported some ten, fifteen, or twenty leagues in his carriage, to be ready to renew the sport in the morning in some other of his domains. The description of an annual hunt, given by the duke at the Fête St. Hubert, addressed to Mr. Apperley, will further illustrate the style in which this distinguished sportsman conducted the chase. The account at large may be seen in the *Sporting Magazine* for January, 1827.

282. *The register of game killed at Chantilly*, from 1748 to 1779, will probably surprise such of our readers as are unacquainted with French sporting annals.

Hares	77,750	Curlews	32	Quails	19,696	Hinds	1,682
Rabbits	587,470	Oyes d' Egypte	3	Pralles (the male quail)	449	Fawns	119
Partridges	117,574	Oyes Sauvage	14	Woodcocks	2,164	Does	1,921
Red ditto,	12,426	Bustards	2	Snipes	2,857	Young does	135
Pheasants	86,193	Larks	106	Ducks	1,353	Roebucks	4,669
Woodpigeons	317	Tudelles	3	Thrushes	1,313	Young ditto	810
Lapwings	720	Fox	1	Guynards	4	Wild boars	1,942
Becfique (our wheatear)	67	Crapeaux	8	Stags	1,682	Marcassins (young boars)	818

SUBSECT. 1. *Wolf Hunting in France.*

283. *The systematic chase of the wolf in France* (*fig.* 60.) is thus described by Colonel Thornton:—"You must first post, on the side of the thicket at which you wish to prevent the wolves from issuing, ten or a dozen men, sixty paces apart, each provided with a rattle to be employed on the occasion. When every thing is ready the leader gives the order, and the dogs are immediately taken to the brisées to be let loose. The whipper-in then conducts them towards the spot where he supposes a wolf is to be found, continually encouraging them by blowing his horn, and by crying *Hala ila la tayau velleci aller*. He blows his horn from time to time to animate them in the pursuit, all which may force him to quit his kennel long before they come up, but sometimes he waits till they are close to him before he breaks. If the huntsman perceives him, he must then call to his dogs in these terms—*Velelau, velelau, harlou, harlou, velleci aller*. He will then sound his horn to make them follow the traces, and then cry, *Harlou chiens, harlou velleci aller*. The wolf thus pursued will, perhaps, hang cover, that he may obtain the advantage of the wind in his flight; but the men stationed in advance will make use of their rattles, which will force him off at once, without this advantage, particularly if briskly pushed by the dogs, supported by the huntsman, who will incessantly keep crying, *Ha y fuit la chiens, y fuit, la ha ha*. He will then sound two blasts, and again begin hallooing *Hon velleci aller, velleci aller*. At length the wolf, finding himself pressed by the dogs, the cries of the hunters, and the noise of those stationed to keep him in, resolves to escape by the place where he hears no noise, which is precisely the part next to the open country. He stops a moment at the skirts of the wood to observe whether he can see any person, and he immediately sets off to cross the plain. He is suffered to advance about one hundred paces, when the *levriers d'estrique*, and afterwards the others, are let loose upon him on the plain already mentioned. Two horsemen at the same time ride after him, to oblige him to continue his course, as it is of great consequence

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that he should be kept in it; but for this he would escape, as the attempt to run down a wolf is scarcely ever made. To command success in the latter case, you ought to be perfectly sure of your relays; that the dogs were trained exclusively to the chase of the wolf, and that there were neither deer nor boars in the forest. This kind of chase would, besides, be long and fatiguing, because the wolf is rarely blown: he runs a long time, never ahead, almost constantly viewing him for six or seven hours together. The greyhounds placed in ambush greatly abridge this chase, and likewise render it more amusing and certain to the spectators.

284. "*As soon as a wolf is taken*, he should be given up to the hounds, which come up almost immediately, because otherwise the greyhounds would attack the hounds. It is therefore advisable that they should be taken off immediately and coupled, to return and go in quest of another, for it is easy to take several wolves in one day. When this is intended to be done, each should resume his former position; as for those who are stationed to prevent the animal's escape, they must not on any account quit their post till they receive orders to that effect. When the wolf is expiring, his death is announced by three loud blasts of the horn. The huntsmen alight and caress the dogs, to excite them to worry him. It is the duty of the whipper-in to cut off the animal's right foot, which he presents to the commander of the company." (*Sporting Tour through France, Introduction*, p. 21.)

Subsect. 2. *Wild Boar Hunting in France.*

285. *The systematic chase of the wild boar* is treated of by the same author, who informs us that the equipage used for the purpose is called *vautrait.* "In great hunting establishments," observes the sporting colonel, "it forms a separate department, in which particular officers and attendants are employed. Large equipages for this sport are usually attended by a pack of fifteen or twenty couple of hounds; the huntsmen and whippers-in ought to be extremely expert. This chase is very fatiguing; the huntsmen are obliged to shout incessantly to make the dogs follow, as they are frequently discouraged, especially if they are pursuing an old boar. It requires mettlesome and vigorous horses, and the riders must not be afraid of the branches in the thick recesses of the forest into which they are obliged to penetrate. It is extremely difficult to procure hounds well trained for hunting the boar; and their training for it requires great patience and attention; not that a young hound will not at first pursue the animal, but his scent sometimes disgusts, and the country, covered with thickets and morasses, discourages him. A boar is not so easily hunted down as a stag; and let the establishment be ever so excellent, the chase seldom lasts less than four or five hours. Sometimes the animal is checked by the firing of a gun, or he is pursued by mastiffs and greyhounds. Chases have been known to continue two whole days, and at last the hunters could not have taken the boar but by shooting him on the third day."

286. "*When the boar finds himself driven to the last extremity*, he does not run forward, but frequently turns, keeping for a considerable time near the same spot, and seeking to make the dogs start some other game. When he is "dead beat" he foams much, and only advances by leaps or bounds (*fig.* 61.) or retreats into a marsh. As a last resource, he sets his back against a bank or tree, and defends himself with fury. It is then that the whippers-in must give effectual support to their dogs, and endeavour to dislodge the animal; but if he resolutely keeps at bay, it is proper to prevent the dogs from approaching too near. The whippers-in enter the thicket with precaution; one of them alights, approaches the boar, and plunges his hunting-knife into the small of his back. The man who inflicts the wound must be very alert, and instantly run off a contrary way, for the boar always turns towards the side on which he feels himself wounded. If however he should prove so furious as to endanger the sportsmen and the dogs, the best way is to kill him with a gun or pistol; this is a privilege or honour reserved for the leader of the company, and is resorted to only at the last extremity. The whippers-in then sound the death of the animal, and encourage the dogs to trample on him. Having cut off the testicles, which would cause the flesh to contract a very disagreeable smell, and the fore foot, which is given to the huntsman, who presents it to the leader of the company, the boar is carried off. Before they return, the dogs are inspected, and those that have received wounds are dressed, the huntsmen being provided with needles, thread, and every thing necessary for that purpose." (*Ibid. Appendix*, p. 248.)

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WILD BOAR HUNT.

Subsect. 3. *Shooting of Feathered Game in France.*

287. *Winged game shooting in France* furnishes much or little sport according to the locality. In Britany and Normandy it is said to be very good. A correspondent writes to a friend that he has bagged fifteen brace of partridges in a day in the former of these provinces; and that another killed sixteen quails, three partridges, two hares, and a landrail. The partridges are however not easily flushed from the thick gorse or furze, so common here; from which cause smooth pointers are of little use, nor are staunch setters much

better, as, enveloped in the furze covers of some parts, they might stand until they became statues, before they were discovered. In these places it is found better to use a dog between a setter and a Newfoundlander, whose hide will resist the prickly mass, and one that will not rush impetuously on the game, but wait until the arrival of his master within sight or hearing. Woodcocks abound here as well as in most of the hilly and woody provinces of France. It is a curious circumstance in the system of French sporting, that a second season of partridge shooting is common in many parts of the country; and that it commences at the pairing season, which is the exact time we think it both humane and politic to leave off.

288. *Quails are abundant in most parts of France.* An English gentleman writes from Lorraine, that in four hours' shooting, in a heavy pelting rain, he killed (thanks to the percussion lock!) twenty-seven quails and three partridges. He further states that "Grives (thrushes) and all the smaller birds of passage are sought after and are taken in springs, arranged at regular intervals on each side of narrow roads or paths in the woods, portions of which are let to individuals, who choose to have what is here called a *tender*. Many have from ten to twenty thousand of these springs; and, as they must all be visited daily, some trouble and expense are attendant upon them. The smaller birds sell from twelve to twenty-four sous the dozen; the grives, three or four sous each." (*Sporting Magazine*, No. cxxvi. New Series.)

Subsect. 4. *Angling in France.*

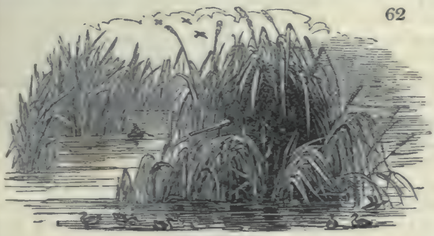
289. *The sport of angling in France is not of the first order.* Many causes tend to destroy the fish there; and in most instances the waters flow too slowly to be favourable to the genus *Salmo* and other fly-taking fish. But the still-water fish, are no where more abundant than in France; their breeding being much encouraged, to furnish table supplies for the days of their flesh fasts; bottom-fishing is therefore more generally practised than fly-fishing. In the more mountainous districts, however, where the rivers "run swiftly," fly-fishing is followed with success; but neither the flies used, nor the rod and line by which they are thrown, would meet the approbation of a disciple of Cotton, or Sir Humphrey Davy. The manipulation of these artists is nevertheless in general better than their tackle; and they kill and land their fish handsomely. It has been a general observation of tourists to France, that the English flies are not in general suited to the tastes of the French *poissons*. The red-palmer, one gentleman has observed, which in England is so killing at all times and in all seasons, is there nearly inert. The May-fly, likewise, is almost unknown there; nor is the artificial one more successful, as we know by experience.

Subsect. 5. *Horse Racing in France.*

290. *Horse racing* has of late years assumed something like methodical arrangement here, and prizes have been contested for by well bred horses. The Paris races take place in the Champ de Mars; and the running of 1832 is so well detailed, though severely criticised, by a writer in the *New Sporting Magazine*, that we shall offer a few extracts to show up French racing and a French race-course. "Were we to search the wide world through," says this able writer, "we do not think we could find a greater contrast than that which was afforded by the transition from the Goodwood to the Paris meeting; indeed, so opposite are they, that we can scarcely believe them to be of the same nature; but we think that one must be racing, and the other some species of pursuit for which we have not yet found a name. To begin with the description of the course. It is on a hard gravelly plain of considerable extent, on the south side of the Seine, one end of which is occupied by a splendid building, called the Military School (but which the uninitiated might take for a grand stand), while the other stretches out to the river, and is approached by a bridge from the village of Passy, a sort of Milbank of Paris. On either side of the plain, shaded by rows of stunted trees, are raised banks or mounds, upon which the pedestrians are ranged during the races; and about the centre of the south side are erected some temporary stands for the royal family and visitors, the former placed in the centre, being hung with rich crimson velvet and gold, and the others with tastefully arranged tri-coloured drapery." After telling us that money will not purchase an admission to the *stands* as in England, but is only to be obtained by a ticket, he informs us that "The course, which is of an oblong form, comprises the circuit of the whole plain (about a mile and a quarter round), and is marked out by good strong posts and ropes. Within the first circle is another to keep the equestrians at a respectful distance from the course, and to shelter some troops, which, with their band, were stationed opposite the stands; half way round also (where the pedestrians mustered thickest), were soldiers with fixed bayonets, at about a yard distant from each other; and in the middle ring were stationed a handful of cavalry, with drawn swords, by way of keeping the equestrians in order. With the exception of a few weeds on the mounds, there is not the slightest symptom of vegetation, and the course itself is almost as rough and as hard as our country roads; indeed, the north side was worse than many cross roads, and exhibited ruts, made by carts carrying the soil from the banks to the centre, which has been raised a foot or two. The Champ de Mars, however, as its name bespeaks, was not intended for a race-course; and in the absence of a better must be taken with all its imperfections." (*New Sporting Magazine*, No. xviii.) The truth of this description the com-

piler can attest, having himself witnessed a similar exhibition there a few years since. We would however recommend the remainder of this account to the reader's perusal, as it well merits his attention. In the Bois de Boulogne, also, racing matches are contested, after the manner of those in the Champ de Mars, at different periods of the year; and we merely add, that we fully agree with Nimrod, who observes, that "The French know no more about racing than they do of flying."

291. A French Tattersall's has been established in the Rue Beaujou, Champs Elysées, Paris, under a decree of the Emperor Napoleon the Third, and is placed under the superintendence of the Minister of Commerce, who regulates the conditions of sale of horses, carriages and harness, and at it horses are received at livery and for training. Here also the purchase, sale, and transport, of horses and carriages, and of all kinds of animals for breeding, is undertaken. Mr. Grantley Berkeley, we see, resorted to it for lodgings for his canine companions as he passed through Paris *en route* to the forests in the South of France. A sporting magazine (*Journal des Chasseurs*) was attempted in Paris some years ago; also, the introduction of cock fighting, pigeon shooting, &c.; but the Parisians, though sufficiently game themselves, did not show much taste for either pursuit.



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HUT SHOOTING.

292. *Wildfowl shooting is excellent in France;* and, thanks to the indefatigable Colonel Hawker, he has informed us how it is conducted. "The French coast," he observes, "is plentifully supplied with wildfowl; which there are far more easy of access than in our country. Taking from between Cherbourg and Neville to Charenton, there is, I believe, no better place within the same distance, from the south of England, than this would be for an enthusiast in the diversion. Here the birds are now far more numerous than on the coast of England; and the very few shots that are worth taking with the wretched guns and powder, which are used by the few people who here follow wildfowl, render their sporting but a trifling impediment to your enjoying the whole range of country." Well may the hardy colonel, who watches whole nights on the bleak coast of his own country, hold in contempt the *hut-shooters* of the French coast, who make a sort of sentry-box by digging a hole in the ground, abutting on some water well frequented by the wildfowl (*fig.* 62.). This is roofed over with turf, a single hole only remaining for the gunner to crawl into, from which he fires on the birds. Call-birds are necessary, which are fastened on the outside of the hut "to three separate pegs in the water; two tame ducks and a drake. The drake must be in the centre, and the ducks on each side of him, at about five yards interval; and the birds being thus separated, will frequently be calling to each other; and if so, there will seldom pass a wild one, but will come and drop with them. You cannot, in general, succeed with less than three call-birds. Indeed I should recommend having never less than six; and if you have twelve, or even more, all the better." The French *call-ducks*, from what the colonel says, are like their people, more garrulous than our own; and as noise is necessary to success, the Italians, he tells us, put out the eyes of their call-ducks, that, having nothing to see, they may clamour the more; and the cruel Italian, if reprobated for his brutality, excuses himself by attempting to prove them "the happiest birds in the world, as they are always singing." The colonel proves the superiority of the French decoy birds over our own by what follows: — "I need," he says, "only mention, that, a few winters ago, when I sent over some of them to Lord Rodney, for his beautiful pond at Alresford, Mr. Sparry, the late bailiff, in order to secure them for the night on which they came, put them within a few hurdles, close before his house. When he got up in the morning, no sooner did he open his door, than a number of wild ducks flew up from within the little fence he had made, and into which these birds of course had enticed them. Several tame ducks had constantly been in and all about the place, but these had never decoyed the wild birds in the manner that had been done by the *Frenchmen*." Of all the wildfowl shooting localities, the lakes of Peronne seem to offer the best sport coupled with comparative ease to the sportsman. Here the huts are of a superior order to those of the common *huttiers* (hut-shooters), and it is from hence that the Paris market is principally supplied with wildfowl. To make one of these Peronne huts, "cut down a large square in the reeds, about eight feet by four; make a foundation of either stone, wood, or brick. Then drive in six piles on each side, and on them put six hoops, precisely like those to a tilted waggon. The foundation being then formed, nothing remains but to build up the sides with turf, or what else you please, and thatch the roof and the whole of the inside. In front there must be either two or four port-holes to fire through (each one bearing clear of your call-birds), and at the back a little door to crawl in at, which you enter by a labyrinth. This hut being built among the high reeds, and afterwards strewed over with them, is completely invisible, although as commodious inside as a large covered cart. Here the *huttier* of Peronne goes regularly every night, wet or dry, and takes a great coat (if he has one), with a piece of brown bread and a sour apple

for his supper. In front of his hut are fastened, to piles at each end, three separate ropes, about twenty yards long. On the centre one he ties four drakes, and to the one on each flank four ducks, making in all twelve decoy birds; and these being (to use a military term) dressed in line, whatever bird he sees out of the ranks he knows must be a wild one; and as the lake in moderate weather is like a mirror, the night is seldom so dark but that he can see to shoot at the very short distance which his miserable gun and miserable powder will kill." (*Hawker, on Shooting*, p. 417. 7th edit.)

SECT. III. *The Field Sports of Holland and Belgium.*

293. *The chase in Holland* is conducted somewhat after the same manner as in France; it is however in character more tame. Very few packs of hounds are kept by individuals, but the dogs are collected when wanted from among those of the gentry and land owners around who encourage the chase. Occasionally a subscription pack is to be met with, which is located, formed, and supported at the common expense; and, as may be supposed, when this occurs there is some chance of systematic hunting; but, when the former method is adopted, the hounds are of various breeds, and ill-matched in size, speed, or tone. In many parts of this country châteaux are numerous, and large farms are thickly spread around. But there is often poverty within the château and want of spirit in the farm occupant; and it is very seldom therefore that a respectable *turn out* is seen. A few good horses occasionally gladden the sight; but Dutch or Belgic horses are not the *élite* of European cavalry. It may be also supposed that their dogs must be of a motley description, as wherever the nature of the country allows of it, they serve, they tell us, *pour forcer le lièvre, le sanglier, ou le loup.* Now, when a pack is to-day engaged in hare hunting, a few days hence is to encounter a wild boar, and in a few more to pull down a wolf, or perhaps, to diversify the object, the combined dogs are become staghounds, there can be little system displayed in the enterprise, either by the sportsmen or by their horses and dogs. This medley of chasings could not in fact be carried on at all, were it not that, let the object of pursuit be an elephant or a mouse, the hunters are supplied with dogs of every stamp, from the beagle to the boarhound; at least such was the case in the packs we saw there, the canine members of which, when collected from so many sources, appeared to our eyes as well *packed* as a bushel of unpicked potatoes. Occasionally however, as before hinted, distinct packs are kept for each of these objects of the chase, but this is a rare occurrence; indeed, the nature of the country is not favourable to harbouring the larger kinds of game, and it is only in the preserves of the nobility and very wealthy persons that deer, boars, or wolves, are met with. Population and cultivation have driven them away; and as the industrious natives prefer commerce and its advantages to the pleasures of the chase, little information is to be got by pursuing the matter among them further. Of the hunters in use in Holland we have to remark that few of blood and figure are bred; and when one is seen with rather extraordinary pretensions, it has usually proved to be an exotic, and most probably derived from England. With the heavy breeds it is far otherwise; and the Dutch horses of Friesland, Berg, and the county of Juliers, are much sought after by English dealers to supply the drays of our brewers and the waggons of our coal merchants. In Rouen we were particularly delighted with the specimens we daily saw of these stately animals (*fig.* 63.) so common there, and with the waggon and cart harness which was on them, studded and bedizened as it usually was with costly trappings; while their ample manes and tails were not unfrequently graced with ribands of various colours — so proud were their drivers of the lofty and noble animals under their direction. It appeared to us, that the carters and waggoners here took much more personal interest in the appearance of their horses than the English drivers of this class. Not but that we have seen some who have looked exultingly when a stranger has stopped to eye their team, or perchance has stroked the ample sides of one of them. The angling of Holland and Belgium, being most of it confined to the capture of carp and other still-water fish, does not rank high in the estimation of English sportsmen. Good shooting of game, similar to that of England, is to be met with in most parts of this country.

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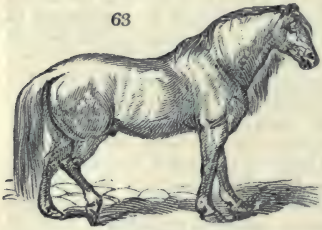

BELGIC HORSE.

294. *Archery, as a minor sport*, is practised in both Holland and Belgium, but it is not in either country by any means so popular as with us. In several places, but particularly in Alkmaar and Brussels, we saw the trading natives engaged in dislodging a popinjay figure from a high tree by the bow and arrow. In both these instances the scene was laid, as might be expected, in a village ale or tea-drinking house; and the method by which it was conducted showed that it was a favourite pastime, and owned some dexterous hands. Athletic games, as fencing, wrestling, rude sparring, or rather hunching, we have seen, or rather we have had a glance at; for the clouds of tobacco on most occasions interrupted distinct vision in the out-door as well as the in-door scenes. We were also invited to a bear-bait and a dog-fight in Brussels; but as these were not to our taste, we declined, and got laughed at. We did not then contemplate any publication of what we saw, or probably we might have done otherwise.

Sect. IV. *The Field Sports of Switzerland.*

295. *In this romantic region*, where stupendous ridges serve to confine lakes of great extent and profundity, the wild sports of the natives may be expected to take a wide range and also to assume a masculine character. To such the aerie of the eagle, placed on the loftiest summit, holds out an irresistible object of desire; and the rocky heights, frequented by the chamois and ibex, although situated in the region of storm and snow, offer them powerful allurements; the delights of which appear to be measured by the degree of difficulty and danger of the attempt to reach them. These being surmounted, still leave a world, a nether world, of grandeur to admire; where, in the wide and fathomless lake, the hardy fisher guides his boat, and employs his powerful tackle to secure the weighty pike; or he traverses the banks, or he wades in the rapids, and plies his lusty arms in wielding his two-handed rod to capture a salmon or vast lake trout. Such are the features which are among the most prominent of this romantic country. Our illustrative portrait (*fig.* 64.) presents an accurate view of a part of Switzerland corresponding with the account we have held out. The river Reuss is here seen, not far distant from its source in the heart of the wildest scenery of St. Gothard; and here it is well known all the sporting enterprises we have mentioned are carried on by the adventurous natives in common, and are occasionally engaged in by travellers also from Britain and other countries.

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MOUNTAINS OF SWITZERLAND.

Subsect. 1. *Hunting the Chamois.*

296. *The chamois* (*Antelope Rupicapra* Pallas) is a species of antelope with two recurved horns of six or seven inches long. Its body, which is about three feet three inches long and about two feet high at the shoulders, throughout is well covered with hair (*fig.* 65., p. 96.), which changes towards winter from its summer colour of fawn to a deep brown, at which season the animal is also furnished with an under fleecy coating, of a woolly texture, as a protection from the cold. A writer in that interesting work, the *Library of Entertaining Knowledge*, says, " The chamois inhabits the most inaccessible parts of the woody regions of the great mountains of Europe. He does not, as the bouquetin, climb to their most pointed summits, and he descends not into the plains. Like the klipspringer of the Cape, he is remarkable for the wonderful extent and precision of his leaps. He bounds over the chasms of rocks — he springs from one projection to another with unerring certainty — he throws himself from a height of twenty or even thirty yards upon the smallest ledge, where there is scarcely room for his feet to plant themselves. This extraordinary power of balancing the body, of instantly finding the centre of gravity, is a peculiarity of the goat tribe, to which the chamois is nearly allied. The ability of the eye also to measure distances with such undeviating exactness, is associated with this power of finding the centre of gravity. In the chamois these are purely instinctive faculties, which he possesses almost from the moment of his birth. They are not the result of training, for the young chamois has only to acquire the necessary strength to be able to imitate the feats of his more practised companions." (*Menageries*, vol. i. p. 372.)

297. *The chamois hunter sets out generally in the night*, that he may reach the feeding ground of the chamois, whose meals are only taken in the morning and evening. As he proceeds, he reconnoitres frequently with his telescope, still advancing higher and higher, until he espies the object of his search. It is now that his mind and person are both arduously employed; the former to escape the notice of the watchful and quick-sighted animal, and the latter in attempting, however difficult the task and however dangerous, to get above him. Having done this, he takes a very deliberate aim, resting his rifle on some firm substance. If his aim takes effect, and the animal falls dead, his reward is not yet sure, nor are his labours or his dangers yet over. It may be almost impossible to reach the Alpine point on which the chamois fell; nor is it unlikely that the animal in his death struggles may have fallen into some deep ravine, too precipitous even to attempt. Should he fortunately reach his prize, it is by no means certain that the nature of the ground will admit of the carcass being taken away; in which case the hunter must content himself with the skin only. It is however even more probable that the whole of his toil and watching may be wasted; for it is at all times particularly difficult to approach the chamois, but more

particularly so when there are many together, one of the herd being always planted on some commanding eminence, as in *fig.* 65., to keep watch. This wary sentinel is said to give notice of danger to the herd by a hissing sound, which, being well understood, puts the whole to flight. "It is then," in the words of the ingenious writer in the *Menageries*, "that the labours of the hunter commence; for then, carried away by the excitement, he knows no danger. He crosses the snows without thinking of the abysses which they may cover; he plunges into the most dangerous passes of the mountains; he climbs up, he leaps from rock to rock, without considering how he can return. The night often finds him in the heat of the pursuit; but he does not give it up for this obstacle. He considers that the chamois will stop during the darkness as well as himself, and that on the morrow he may again reach them." (Vol. i. p. 376.) Our mountain hero, having taken his frugal meal, passes the night under some projecting ledge of earth or rock, or he seeks shelter under some stunted herbage, and the morning dawn finds him equally alert and vigilant in his search.

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CHAMOIS.

298. "*These hunters of the chamois are so absorbed in this pursuit* as to remain whole days in the glaciers of Chamouni, during which time their wives and families must feel the keenest alarm for their safety; and yet, neither the pleasures of home, nor the dangers of their employ abroad, can wean them from this pursuit. Saussure knew a young man, of the districts of Chamouni, about to be married to the object of his choice; but nevertheless so deeply was he infatuated by a love of this sport, that he thus replied to the remonstrances of Saussure: — 'My grandfather was killed in the chase of the chamois; my father was killed also; and I am so certain that I shall be killed myself, that I call this bag, which I always carry when hunting, my winding-sheet; I am sure that I shall have no other; and yet, if you were to offer to make my fortune upon the condition that I should renounce the chase of the chamois, I should refuse your kindness.'" These romantic sentiments have been beautifully versified by Mr. Rogers, in his poem of Italy: —

"Oh, it was a sport
Dearer than life, and but with life relinquished!
My sire, my grandsire, died among these wilds:
'As for myself,' he cried, and he held forth
His wallet in his hand, 'this do I call
My winding-sheet — for I shall have none else!'"

"Saussure adds, that he went several journeys in the Alps with this young man; that he possessed astonishing skill and strength; but that his temerity was greater than either; and that two years afterwards he met the fate which he anticipated, by his foot failing on the brink of a precipice to which he had leaped. It is the chase itself which attracts these people more than the value of the prey; it is the alternation of hope and fear — the continual excitement — the very dangers themselves, which render the chamois hunter indifferent to all other pleasures." We would further refer the reader for much more interesting matter on the subject to the *Library of Entertaining Knowledge*, and also to the article Antelope, in the *Penny Cyclopædia*; as well as to a spirited sketch of the haunts of the chamois in the *New Sporting Magazine*, No. iii. The Swiss mountaineers, like the Tyrolese, are skilful riflemen, and meet continually to practise and engage in trials of superiority. Clubs for rifle-shooting are held in most of the cantons, and annually a grand rifle-match is held in some part of Switzerland, attended by all the best shots in the Confederation.

299. *Hunting the ibex* (*fig.* 66.) is also one of the dangerous pursuits of the Alpine sportsman. This animal is by some naturalists thought to be the stock from whence our domestic goat is derived. Its horns are singularly ringed, and of such length that it is surprising the agility of the animal is not impeded by them. Such, however, is not the case; and ibexes are found on the highest points of the rocks, bounding from ledge to ledge, where the adventurous chamois hunter follows them, and sometimes succeeds in bringing one down with his rifle. Here, soaring aloft in pursuit of prey, the eagle is often seen; and, as he makes his stoop at the young of the chamois or of the ibex, is himself sometimes arrested by the ball of the sportsman. In the lower reigons of these inhospitable passes, the wolf and the bear are likewise often met with, and encountered by these adventurers. In the plains the chase is also pursued, much in the French and German methods after the bear, the wolf, &c. Hares and rabbits are to be met with in the valleys, on which the eagle and larger hawks pounce down from aloft, and may even be enticed by a stuffed representative.

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IBEX.

300. *The angling of Switzerland*, as we have already hinted, presents strong incitements to the gentle craft to pack up their tackle and repair to this romantic country. In the lake of Geneva pike are numerous and large, and afford excellent sport to the troller. Trout also (the great lake trout) are said to be equally numerous, and to take readily well-dressed hackles of all kinds; but, as it happens in all lake fishing, the hackles used must be dressed full, and of striking colours. Many admirable spots for the angler's occupation are to be met with on the whole of the road to Lausanne: indeed all the rivers which fall into this celebrated lake, will furnish good sport. In the Bonne, trout, grayling, and perch abound; and although thickly-wooded banks offer some impediments to throwing the fly, many of the little basins formed by the mountain torrents are open, and may be tried with success. Near Vevay, the small lake of Brai affords good angling; and, as a trout river, the Sarine, particularly that portion of it which waters the Pays de Vaud, presents, it is said, most excellent trout fishing. The Grand Eau, one of the tributaries of the Rhone, is particularly well stored with fish; and were it less wooded, its eulogists say it would afford some of the finest angling in Europe; but, as it is, the zealous fisherman will find it answer his purpose.

301. *The lake fishing of Switzerland* is usually accomplished, either by taking a stand on some rocky point which protrudes itself into the water, or otherwise a boat is employed, which must be moored some way from the shore. Occasionally the boat is allowed to drift, and the troller or fly-fisher follows his vocation as the boat floats down the stream, rather throwing his bait on each side of his boat than from the head or stern.

Sect. V. *The Field Sports of Italy, Spain, and Greece.*

302. *A progressive history of the sports of Italy* would offer a fund of entertainment and interest did our limits allow of it. When Rome governed the world, when her luxuries and her darings were at their height, and when her citizens, conscious of their strength, looked to their rulers for constant amusement, suited to the barbarous tastes of their times, scenes of tragic interest were exhibited; and, although their historians may be supposed to have dealt sometimes in the marvellous, yet we know that the sporting spectacles then witnessed in their amphitheatres were marked with an equal disregard of the sacrifice of life and wealth.

303. *Beast fights were very frequently exhibited in Rome*, and the combatants were often varied, as a bull against an elephant, an elephant against a rhinoceros, a bull and a lion, &c., &c. At the opening of Pompey's theatre, we are told that five hundred lions were killed in five days. Eighteen elephants were produced on this occasion, and were opposed in succession to lions, to one another, to gladiators, and lastly, to Gertulian archers. On the birthday of Hadrian, a thousand wild beasts were invariably sacrificed at these public spectacles; and at the dedication of the amphitheatre of Titus, we are told by Eutropius, Suetonius, and Cassiodorus, that five thousand, — nay, Dion Cassius says nine thousand, — wild beasts were made victims to this rage for slaughter.

304. *Human combatants* were likewise frequently exposed in these shows to the assaults of animals. There was also a class of men called *bestiarii*, who were professed prize-fighters with beasts; some of whom by their prowess have been said, when single-handed, to dispatch twenty wild animals in a day. It was often the fate of malefactors to be allowed to try this venturous cast, by exposing themselves to the attack of the lion, tiger, elephant, or wild bull. Could we believe all that is related by the historians of those times, we should learn that Commodus himself entered the lists in the arena against the most furious beasts; and that, on one occasion, the dens of the lions were opened, and poured forth one hundred of these animals, all of which this imperial marksman killed with his own bow; but *credite vult*. Of his cast was Domitian also, who, it is related, had been seen at his seat at Alba to strike, at two discharges of his bow, an arrow from each into the head of a victim, so as to make it appear horned.

305. *In the taming of wild beasts*, the Ancients appear to have been as successful as in the combating of them. In the procession of Ptolemy Philadelphus, at Alexandria, twenty-four chariots were drawn by elephants, twelve by lions, seven by ostriches, five by buffaloes, four by wild asses, with other anomalies equally remarkable in the untoward natures of the *feræ* of the earth. Thus we are further told, that on the neck of one of the elephants was seated a satyr with a crown of gold on his head. Twenty-six white oxen, 24,000 Indian dogs, 30 Ethiopian, and 300 Arabian sheep, 4 lynxes, 14 leopards, 16 panthers, 3 brown bears, 1 white bear, 1 camelopardalis, an Ethiopian rhinoceros, with a vast number of Indian women carrying the tusks of 600 elephants, and large quantities of cinnamon, formed also a part of this astonishing procession. Every country which had submitted to the Roman yoke was ransacked for its indigenous animals, which variety became necessary to gratify the people's insatiable love of the sports of the circus. The mastiff of England was also much engaged in these combats, and his darings rendered him a constant object of admiration. Enormous snakes were among the numerous objects exhibited in the comitium; and, to add to the wonders, Augustus indulged his people with the pleasure of chasing and destroying thirty-six crocodiles in the Flaminian circus.

306. *An artificial forest hunt* appears to have been a sport peculiarly grateful to the tastes

of the Roman citizens; to gratify them, innumerable trees and shrubs were removed, and planted in the vast area of the circus, into which great numbers of wild beasts of various kinds were driven from their dens. At a signal given by the emperor, the people rushed in and attacked the beasts, and he who was fortunate enough to vanquish and kill one, was allowed to take away the spoil. As the bloodshed and slaughter between these animals and those who attacked them must have been mutual, we cannot but shudder at the bare picture set before us, and deplore that depravity of taste which mistook savage brutality for true courage and martial spirit.

307. *The present state of Italian field sports* does not offer any very remarkable variation from the sporting methods practised in France; altogether, however, they are pursued with even less system here than there. Partridges and quails are abundant, and are shot, snared, and netted, whenever and wherever they are met with throughout the whole peninsula.

308. *An ingenious method of taking the passenger pigeon is practised in Italy,* particularly in those romantic defiles which separate the rocky heights through which the vast flights of them direct their course in their migrations. Of these mountain passes, Posillipo (*fig.* 67.) presents a prominent example. Nets are here spread under the course of the flight of the pigeons, extending from tree to tree, or from one abutting rocky point to another; but, as the birds would fly much above the net were not some contrivance resorted to by the wily natives to force them to descend, they practise, as we are told, the following expedient: — Masses of stone are here and there raised, on which the slingers station themselves, being provided with a sufficient number of stones for a purpose yet to be described. Other persons also concerned being placed on the summit of these mountain passes, give notice of the approach of the pigeon flights by sounding a horn, which those stationed on the artificial pyramids hearing, commence slinging their white stones among the birds, which so attracts their attention that they descend in pursuit of the stones, and in so doing numbers of them become ensnared. Quails also are taken frequently by purse-nets transversely hung in these passes, for it is evident that their passage being usually made in the night, no artifice would decoy them in the manner of the pigeons. Other migrating birds are likewise thus taken by the Italians, who appear singularly dexterous at this as well as most other species of fowling.

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POSILLIPO.

309. *Wolf hunting in Italy was an early practice,* and in some very wild parts we believe it is yet continued: in the Zoological Gardens there are to be seen some fine specimens of the wolfhounds used by the shepherds of the Abruzzi: in form, they resemble the Newfoundland dog, but are rather lighter in figure. The huntings of the chamois and ibex, and those also of deer, hares, and rabbits, the anglings for fish in the waters, and the shootings of the land and waterfowl, are pursued here much after the methods used in France, Spain, and Switzerland.

310. Eryx, near Trapani in Sicily, is (as in antiquity, when the place was dedicated to Venus, as the resort of her favourite bird) still a resting-place for doves in their annual migrations across the Mediterranean; and at Malta, and many Greek islands, as also in Spain, the visits of large numbers of quails and other birds afford both sport and profit to many of the population. Hunting, shooting, and fishing are favourite pastimes of the people of Sicily, and the chase of the wild boar, wolf, and fox is conducted with some spirit, but no kind of systematic sporting is pursued, except in the "roccolo," or taking birds by a decoy and nets. Hares, as in the time of Arrian, are beat for amongst a high close grass; coursing is, however, very uncommon. The francolin, or red-legged partridge, is common; "wild ducks, cranes, geese, and swans are shot from November to March; larks are in great number in April, May, September, and October; fieldfares abound in October and November; and the delicious 'beccafico' is taken from March to September." (*Smyth's Memoir of Sicily*, pp. 50, 51.) The same author gives an account of the fisheries of tunny and sword-fish off the Sicilian coast, which constitute some of the principal Sicilian sports.

Subsect. 1. *A Spanish Bull Fight.*

311. *On the 12th of January*, 1823, one of these spectacles (*fig.* 68.) was exhibited at the amphitheatre of Madrid, which is an immense building without the precincts of the capital, capable of accommodating twelve or fourteen thousand spectators. "Imagine an extensive circular arena, which is defended by a high and strong wooden partition, that runs all round, and has four gates at the four points of the compass. One of these is used for the entry of the master of the games, or director; another for the entry of the bulls; another for the egress of those bulls which are not killed; and the last for affording a passage to the horses which drag out the bulls that are slain. Between the wooden boundary of the arena, and that which encloses the lower gallery for the spectators, there is an open space that runs all round, in order that, if the bulls should at any time overleap the boundary, they may be driven back again to the arena through this space, one of the gates being opened. They are thus prevented from doing injury to the spectators. The lower gallery runs all round, sloping towards the arena, and, as well as the arena, is exposed to the open air. The second gallery, which is immediately over this, is covered by the boxes; and the boxes, which are very high, are protected from the sun and sudden rain by a narrow roof of tiles, which does not project beyond them. Fifty reals are paid for the use of a whole box, four for the second gallery, and two for the lower. At three o'clock the amphitheatre began to fill rapidly; and it was easy to perceive from the expectation painted in the countenance of the visitors, as they came in and seated themselves, that the bull fight is a favourite amusement. The director, dressed in the ancient Spanish style, with a short black mantle, a hat turned up at the sides, and on the left side a plume of white and red feathers, rode into the arena upon a

handsome charger, and, after bowing to the alcada, who presided, and sat in the box on the right of the king's, gave order for the entertainment to commence. Two horses immediately appeared in the arena, each laden with two riders, who were seated on a pad, back to back. The hindermost kept his place by holding in his left hand a cord attached to the pad, and in his right he carried a long wooden staff, pointed at the end, for the purpose of beating away the bull that was about to attack him. A bull was then let into the arena; the tip of whose horns were made harmless by being covered with lead. As soon as he saw the horsemen, he proceeded directly against one of them; and the combatants, being apparently new to the office, offering no effectual resistance, he butted his horns beneath the horse's tail, and overthrew both horse and riders. He then attacked the other with equal success; when the riders were unhorsed, the bull seemed content with his victory, and this contest was continued for some time with alternate success, the bull, however, being most frequently the conqueror, to the great amusement of the spectators. A military band which attended having given a flourish of trumpets, this bull retired. Two skilful horsemen, handsomely dressed in white red and silk jackets covered with gold lace, and in white hats, with a large round leaf and a low arched crown, entered. They carried also each a long staff, with an iron spike at the end of it. A bull was then let in, whose horns were in their natural condition; and as soon as he fixed his wild-looking eyes on the riders, he proceeded to attack one of them. These, however, being well exercised, fought him away generally; but the contest being attended with some danger, both to the horse and the rider, it excited strong interest. One of them was thrown to the ground, together with the horse; but happening to be near the partition of the arena, some of the spectators stretched over the partition to his assistance, and delivered him from the rage of the ferocious animal. When the horsemen had wearied him in some degree, three or four pedestrians teased him a little in turn. They carried in one hand a scarf of yellow or red silk, and after approaching him, they ran towards the boundary with all speed, trailing the scarf behind; and if they were in danger of being overtaken, they let the scarf fall on the ground. The bull immediately stopped, and vented all his rage upon the scarf, as if under belief that it covered his adversary, while the fugitive had time to leap over the boundary. After this, the animal being pretty well fatigued, the same pedestrians, who were also handsomely dressed, armed themselves with strong iron darts, as it was the object of each to run upon the bull with agility, and, just as he was in the act of stooping his head to toss them, to fix two of these darts, one at each side of the back of his neck. Being bearded, it was with great difficulty the animal could get rid of them, and sometimes he was seen raging round the arena, his neck bristled with these torturing instruments. At length, when he was almost exhausted, an expert performer approached the animal, holding a red mantle before him in one hand, and with the other he thrust a long sword in beneath the shoulder. The bull now fell, and another attendant came with a knife, and, fixing it in the vital part of his head, put an end to his agonies. He was then dragged along the arena by the horses and carried away." It appears strange that a polished people should be enamoured of spectacles where even their fellow-creatures are endangered. A very complete account of bull-fights will be found in *Ford's* (Murray's) *Handbook of Spain*.

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SPANISH BULL FIGHT.

Subsect. 2. *Coursing in the Isle of Cyprus.*

312. *The coursing of the Isle of Cyprus* may claim some attention from that locality being famed as one of the places whence we derive the greyhound. A traveller thus describes a Cyprian hunting or coursing match given by the governor: — "Having arrived at a spacious plain, interspersed with clumps of mulberry trees, some ruins, and thick bushes, the sportsmen began to form a ring, in order to enclose the game. Dogs ranging through the bushes and underwood, sprung a great number of rails, partridges, and woodcocks. The governor began the sport by bringing down one of the birds, his suite followed his example, and the winged tribe, into whatever quarter they flew, were sure of meeting with instant death. I was struck with the tranquillity of these stationary dogs, for, notwithstanding the instinct by which they were spurred on, not one of them quitted his post, but the rest ran about in the pursuit of the game. The scene was now changed; a hare started up from a bush, the dogs pursued, and while the former made a thousand turnings in order to escape, she every where found an opponent. She, however, often defeated the greyhounds, and I admired, in such cases, the sagacity of these animals which, disdaining the assistance of those that were young and inexperienced, consequently liable to be deceived, waited until some of the cunning old ones opened the way for them; and then the whole plain was in motion. When the poor animal was just ready to become a prey to its enemies the governor rushed forward, and throwing a stick which he held in his hand before the greyhounds, they all stopped, and not one ventured to pass this signal. One of the swift greyhounds being then let loose, pursued the hare, and having come up with it, carried it back, and jumping upon the neck of the governor's horse placed it before him. The governor took it in his arms, and delivering it to one of his officers, gave him orders, if it continued to live, to shut it up in his park, where he maintains a great many prisoners of the same kind. I admired above all the discipline of the greyhounds, and the humanity of the governor, who thought it his duty to preserve an animal which had afforded him so much pleasure." (*Scott's Sportsman's Repository*, p. 97.) In Zante, one of the Ionian islands, a curious sport, if such it can be termed, is popular — fishing (!) for swallows. Fishing-rods with lines and fly-hooks are placed at times on the tops of houses and steeples. The lines float in the wind, the swallow takes the fly, and is caught with the hook.

Subsect. 3. *The Field Sports of Greece.*

313. *The wolf, jackal, lynx, badger, fox, wild boar, wild goat, red deer, and roebuck* inhabit the more mountainous and wooded parts of Greece; bears are sometimes met with in the Pindus mountains, and in the elevated parts of the Morea. Hares are numerous, and flocks of bustards used to frequent the plains of Bœotia and the Morea, where some may yet be met with. Pheasants, red-legged partridges, quails, woodcocks, snipes, wood-pigeons, &c. are plentiful, and the coasts and lakes abound with wild fowl. Several species of falcons are found in Greece, and the large vulture is seen on the precipices of Parnassus and Delphi. The hunting gear of the ancient Greeks, and the gradations of their knowledge in the use of weapons, are admirably commented on by Xenophon, Grotius, Oppian, and Nemesian. Grotius, particularly, has minutely detailed the form of the *speares*, and directed the method of digging pits and setting engines. Before the age of Homer we are told that the bow and arrow, the spear or pike, the sword and club, were the only weapons employed by the heroic sportsmen of Greece. Hercules, in his attack on the Nemean lion, was not half so well furnished. Of modern sporting in this interesting and picturesque region we have few, if any, systematic accounts; in all probability, it is at a low ebb, as seems to be the case in all the countries of the Mediterranean. The reader may trace the advance of field sports in this part of the world in the pages of Aristotle, Plato, Xenophon, Polybius, and Julius Pollux: and of the Roman chase in those of Cicero, Horace, Virgil, Seneca, Pliny, &c. &c.

314. *Public games in Greece* succeeded to the mere warfare against animals as a means of necessary extirpation; and as the religion of the Greek church enjoined more festivals than even that of the Jews, it is not to be wondered at that the Olympian, Pythian, Isthmian, and Nemean games were well attended. Foot racings in the stadium were very ancient and popular amusements, as also the gymnastic exercises, called the *penthalon*, which consisted of leaping, running, quoiting, darting, and wrestling. The brutal kind of boxing, known as the *cæstus*, was encouraged also, the hands being weighted with masses of iron or lead, by which, although the combatants wore brazen head-pieces, fatal consequences were not uncommon. The horse and chariot racings of Greece, even in very early times, were remarkably imposing spectacles, and the finest horses of the country figured there.

BOOK III.

THE HISTORY OF BRITISH FIELD SPORTS, ACCOMPANIED WITH OCCASIONAL NOTICES OF SUCH OTHER RURAL AND ACTIVE EXERCISES AS ARE COMMON AMONG THE SPORTING CLASSES OF OUR COUNTRYMEN.

315. *To the lover of his country* few subjects can be more interesting than a knowledge of his direct origin, however distant the locality he sprung from may be, or however remote the period at which the advent of his forefathers occurred. On this interesting subject a few feeble glimmerings only enlighten our subject; but such as they are they point to the Cimmerii or Cimbrians, and the Celtæ or Celts, as two great nomadic tribes, who, by different routes, and probably at somewhat different dates, colonised the British islands. The early records of Greece appear to hint at this origin; and there are not wanting a few scattered proofs of the same in the Welsh triads; and the Irish legends also confirm the supposition. Assuming this to be the case, we must, however, admit a very humiliating fact, that the supposed civilisation of manners and advancement in the arts, which our forefathers brought with them from the south, were gradually lost sight of after their colonisation in the north; when they became, as regards civilisation and cultivation, even below the state in which Captain Cook found the New Zealanders. Herodotus describes the puncturing of the skin of the British savages, and Isodorus describes the methods by which they tattooed their bodies. Nor was it until long after that the visits of the Tyrian traders had taught them many artificial processes, among which a principal one was that of manufacturing metals, that they emerged from a totally savage state. Their weapons of bone and wood were then exchanged for those of tin, copper, iron, and brass; and by degrees they assumed some marks of civilisation in their warrings and their sportings.

Chap. I.

The Progress of British Field Sports, from the earliest times to the Norman Conquest.

316. *Besides these and other relics the hunting propensity of the early races of our countrymen* is proved by the bones of dogs which have been found in the burial places of human subjects —probably of some favourite hound. Horns of deer were also often so found, a circumstance on which Strabo comments. The bow and arrow was a favourite weapon with the Celts,

as we may judge by their early records, and by the fact that these weapons were frequently found in their graves, which, when dug in clayey soil, were usually surmounted by masses of stone, that not only proved their wish of preserving these relics, but their dread of the wild beasts, whose numbers and natures were such as to render the dead even unsafe in their sanctuaries.

Sect. I. *The Animals which formed the Objects of the Chase among the Primitive Britons.*

317. *The first efforts of the settlers in Britain* must have been directed to making good their safety, by dispossessing the more ferocious beasts which occupied the country; as the bear, the wolf, the boar, &c. Their next predatory practices were directed against such animals as supplied them with superior food, as the wild cattle, deer, goats, wild swine, &c., &c. These practices, which originated in necessity, were in after times continued as the recreative pursuits of kings, princes, and nobles, and indeed of all who could find leisure for the purpose; to trace which sporting march in all its gradations is the object of our labours.

Subsect. I. *The Wild Cattle of Britain.*

318. *Bovine cattle in a wild state* certainly tenanted the British plains anterior to the earliest records of the country. Vast herds also remained unreclaimed comparatively to a late period. These *Boves Sylvestres*, or forest cattle, were pursued by the first Britons with ardour, as well for the food they yielded as for the ground they occupied, to the exclusion of the new settlers. History affords traces of the vigour with which the chase of these animals was conducted in early times, and of the feats and prowess exhibited in the dangerous enterprise; yet, in after times, when the pursuit of wild beasts generally began to be formed into something of a system, wild oxen ceased to be admitted to the honour of being true *feræ naturæ*, or beasts of the chase; and consequently were not allowed to be legitimate objects of the sportsman's pursuit. Dr. Fleming is of opinion that several varieties, if not distinct species, of the *Bos Taurus* formerly existed among us in a wild state. Lesley notices herds of *vaccæ non cicures*, untamed cows, which frequented the mountainous districts of Argyle and Ross. The *boves sylvestres* of Lesley were white, and possessed, he observes, *jubam densam, ac dimissam, instar leonis*, thick and flowing mane, like that of the lion. Others were more smooth-coated, as seen in *fig.* 69. They long continued to be preserved in their unreclaimed state in various parts of England, Scotland, and Ireland; but are now, according to Bewick, only to be met with at Chillingham Castle in Northumberland, at Wollaton in Nottinghamshire, at Gisburne in Yorkshire, at Lime Hall in Cheshire, and at Chartley in Staffordshire; their flowing manes having disappeared, but their coats remaining of its original hue. Culley, in his work on *Live Stock*, gives a very full and interesting account of these animals; which see. We learn that "The mode of killing them was perhaps the only remains of the grandeur of ancient hunting. On notice being given that a wild bull would be killed on a certain day, the inhabitants of the neighbourhood came mounted, and armed with guns, &c., sometimes to the amount of a hundred horse and four or five hundred foot, who stood upon walls or got into trees, while the horsemen rode off the bull from the rest of the herd, until he stood at bay; when a marksman dismounted and shot. At some of these huntings twenty or thirty shots have been fired before he was subdued. On such occasions the bleeding victim grew desperately furious from the smarting of his wounds, and the shouts of savage joy that were echoing from every side; but, from the number of accidents that happened, this dangerous mode has been little practised of late years, the park-keeper alone generally killing them with a rifle gun at one shot." Bewick informs us that, about forty years ago, there appeared among these *boves sylvestres*, of Chillingham, some with black ears, and others with their noses also black as well as their ears; but all thus marked it seems the keeper destroyed, and thereby, in our opinion, he acted with much bad taste. At Gisburne, likewise, as we are told, there are some others of the race which are entirely white, with the exception of their ears, and they, being of a lively brown within, prove ornamental. These were low in stature but bony, and they were hornless also. There is a tradition with regard to these cattle, that they were brought from Whalley Abbey in Lancashire, on its dissolution in the thirty-third of Henry the Eighth; and the same tradition also purports that they were drawn to Gisburne by the power of music. We regret that the race is so likely to become extinct, inasmuch as they are almost the only important *indigenæ* left to commemorate the rude chasings of the early Britons, since the extirpation of the bear, the wolf, &c.

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WILD BULL.

319. *These Boves Sylvestres of Lesley* presented many of the rude habits of the *Cervus* or

deer tribes, such as the females hiding their calves from the males. The young kine soon begin to exhibit the parent ferocity in its fullest extent; indeed, Mr. Bailey of Chillingham tells us, that one of two days only, on having his head stroked, bellowed loudly, retreated a step or two back, and then rushed at him with extreme violence. When the males were of a fit age for castration, it was necessary to be done with much caution and expedition, or the cries of the young would bring the herd on the operators, to their great peril.

Subsect. 2. *The Wild Deer Tribes of early times.*

320. *The stag genus* (*Cervus* Linn.) formed a very conspicuous object in the early British field sports. Dr. Fleming remarks, that the British *Pecora* appear to have diminished in their species, but that we have no certain records of the periods at which any particular kind were extirpated. The elk of Ireland was probably one of those which became extinct, whose horns measured five feet from the tips to the roots, and expanded near eleven feet (*fig.* 70.). The fossil remains both of this and also of another monstrous variety of the stag occur frequently beneath the peat of the Irish bogs, and particularly in the beds of marl. Such also have been occasionally met with in similar situations in England, as for instance in the clay and gravel beds of Walton in Essex. In Scotland, also, horns are found buried in the bogs, which, by their external characters, could not have belonged either to the red deer of the mountains or to the present fallow deer. These horns are likewise much larger than those of the stag, and are probably similar to those found in the Irish bogs. Remains of the antelope have also been found in England. Dr. Elliot has favoured the public with an account of a peat-pit near Newbury, Berkshire, in which a great many horns, heads, and bones, of several kinds of deer, particularly the horns of the antelope, were discovered. Skulls and tusks of boars, beavers, &c., were also among them. A passage of Torfæus (*Hist. Orc.* cap. xxxvi.) would favour the supposition that the reindeer had likewise been once indigenous to Scotland. Dr. Fleming, however, conjectures that this description was intended to apply to red deer; and when we consider the invariable ill success which has attended all the later attempts to naturalise reindeer in Scotland, there is much foundation for the suspicion, May it, or may it not, favour this presumption, that both the elk and reindeer had been considered as objects of the British chase? seeing, also, that they are noticed in the authoritative books of early times, as the book of St. Albans, and the treatise of Twici, one of the "maisters of the game," to King Edward. It is true that some suppose both these works, but more particularly the latter, to have been compiled from French treatises on the subject; and as these French writings might themselves have been borrowed from German authors, the elk and the reindeer might have thus crept in as legitimate subjects of sporting pursuit both in France and Britain.

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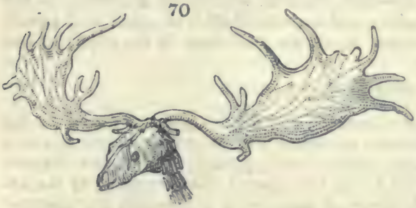


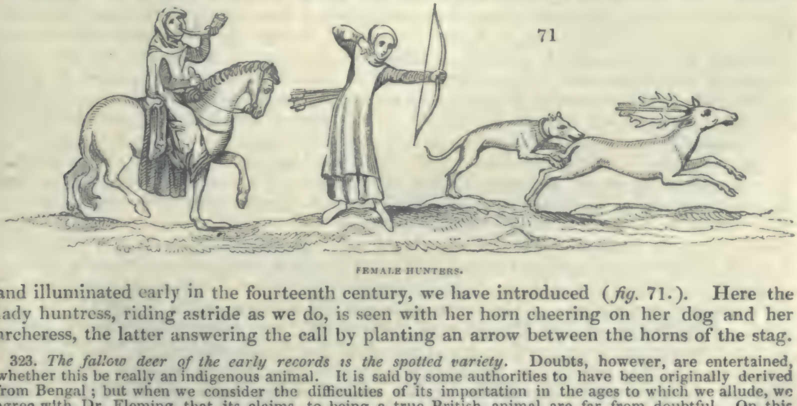
FOSSIL ELK.

Subsect. 3. *Ancient British Deer Hunting.*

321. *The stag, the fallow deer, and the roe also,* in early times, were so plentiful, that all the British hills, plains, and forests, were covered with them. At this period the luxuriant meadows, now bearing heavy cattle and yielding immense crops of hay, were morasses, or peat bogs, fit only to be traversed by light and agile beasts; while the higher grounds, now occupied in the pasturage of sheep, were then forests of vast magnitude, in which the wolf, the bear, the boar, and the wild ox held undisputed tenure. Lesley notices the high estimation in which the deer tribes have always been held. The grandeur of the hunting establishments of former times, as regarded the chase of deer, was very great, and the ceremonials attendant thereon were numerous, and very strictly observed. The hart, or stag, had his several stages of life noted in set terms: thus, the first year he was called a hind calf, the second a knobler, the third a brocket, the fourth a staggard, the fifth a stag, and the sixth a hart. The formalities which took place on these occasions were great, and strictly adhered to; his death-blow also was given in due form, and few heroes have met theirs with more funeral honours, than those which marked the removal of the body of the royal stag. We have elsewhere shown how our country was devastated by the Normans, to support these animals in the royal chases; and although the vast care bestowed on their increase, and the severe punishments which awaited those who trespassed on them, could not again produce the numbers which in earlier times overran the country, they became sufficiently numerous to prove injurious to the morals of the circumjacent inhabitants, by the natural wish engendered in their minds to possess themselves of these *feræ naturæ*. In feudal times their numbers must have been immense. Lesley informs us that from five hundred to a thousand were sometimes slain at one general hunting match. We are also told that these conventional hunts were followed by a grand venison feast; but we presume it wanted the modern garniture of currant jelly sauce. As late as the third century, the Britons who had remained unconquered, and lived beyond Adrian's wall, were principally supported by venison; for the uncertain hold of domestic animals in these times, and the predatory habits of the people, prevented them from seeking animal food of their own rearing. The love of the chase, so inherent in man, is rendered doubly dear to him by at once rousing his mental energies and supplying his bodily wants. It is not food alone that the dead animal yields to his conqueror, but a variety of other benefits follow, which heighten the prize. Thus a Highlander, so late as the time of Henry the Eighth, addressed that king as follows: — "We go a hunting, and after that we have slain red deer, we flay off the skin by and bye, and setting of our bare foot on the inside thereof, for want of cunning shoemakers, by your grace's

pardon, we play the coblers, compassing and measuring so much thereof as shall reach up to our ankles, pricking the upper part thereof with holes, that the water may repass where it enters, and stretching it up with a strong thong of the same above our said ankles. So, and please your noble grace, we make our shoes. Therefore, we, using such manner of shoes, the rough hairy side outwards, in your grace's dominions of England, we be called 'Rough-footed Scots.'"

322. *The almost martial character which wild stag hunting assumed* in ancient times gave it a strong hold on the passions. It was a hazardous pursuit, which fitted it to the somewhat romantic character of the sportsmen of all but the very earliest periods. The stag at bay was a very dangerous foe, and the more so, as it was a point of honour that he should receive his death-wound at the hands of the hunters, rather than be destroyed by the worrying of the dogs; thus, when he had escaped the arrows of the pursuers, and taken to the soil, the more adventurous assailed him with the sword. When he could be approached with any degree of safety, it was also a mark of gallantry to offer the fatal weapon, be it sword or knife, to some fair huntress. Such a scene is described by Sir Walter Scott in the *Bride of Lammermuir*, where Bucklaw, one of the said desperate hunters, cannot, even in the presence of ladies, keep from his woodland idiom. We are told, "It was not without a feeling of pity, bordering on contempt, that this enthusiastic hunter observed Lucy Ashton refuse the hunter's knife presented to her for the purpose of making the first incision in the stag's breast, and thereby discovering the quality of the venison." Upon her complimenting him on his boldness in attacking the stag at a dangerous moment, for she and others had witnessed the close of the chase, — "It is all use and wont, madam," he replied in hunter's phrase; "but I will tell you for all that, it must be done with caution; and you will do well, madam, to have your hunting sword both right sharp and double-edged, that you may strike either fore-handed or back-handed, as you know a wound from a buck's horn is a perilous and somewhat venomous matter." As a proof of the dangers attendant on this sport, it is related that, in 886, the emperor Basilius was attacked by an enormous stag, which lifted him from his horse by entangling one of his horns in the emperor's belt; and that the emperor was only released from his enemy by his equery cutting the belt with his sword; the bruises received from the animal however proved incurable. Sir Walter Scott, in his notes to the *Lady of the Lake*, has entered rather at large into the early stag huntings of Scotland; and to this account we would refer the reader for more ample information than our limits will allow us to give. The union of the perils of war and the dangers of hunting detailed in the celebrated ballad of *Chevy Chase*, is also a faithful though mournful copy of the manners of those times. It was not however always necessary to encounter the dangers of a personal attack on the stag. Ladies, on the contrary, were commonly indulged with protected situations, where the deer were driven towards them, and the fair dames selected from among the passing herds such as presented a fair mark for their arrows. Some of the Scottish kings also, anxious to enjoy the sport without either danger or fatigue, were accustomed to occupy elevated seats for the purpose; and such a spot is called the *king's seat* to this day. It may however be supposed that neither that prince of hunters, James the Fifth, nor the renowned Gaston de Foix (who is said to have been master of sixteen hundred staghounds) was of this number. The chase of the stag, indeed, appears to have been so popular in Britain at one period, that the ladies had their stag hunting parties entirely independent of the gentlemen. Strutt informs us, that delineations of females thus engaged are by no means rare; one of which, taken from a manuscript written and illuminated early in the fourteenth century, we have introduced (*fig.* 71.). Here the lady huntress, riding astride as we do, is seen with her horn cheering on her dog and her archeress, the latter answering the call by planting an arrow between the horns of the stag.



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FEMALE HUNTERS.

323. *The fallow deer of the early records is the spotted variety.* Doubts, however, are entertained, whether this be really an indigenous animal. It is said by some authorities to have been originally derived from Bengal; but when we consider the difficulties of its importation in the ages to which we allude, we agree with Dr. Fleming that its claims to being a true British animal are far from doubtful. On this subject this ingenious writer quotes Lesley (*De. Or. Scot.* p. 5.), where it is obseved that, "Among the objects which the huntsman pursued with dogs, was the *cervum damam, aut capream.*" In the *Statistical Account of*

Ardchatan, Argyleshire, vol.vi. p.175., it is said that "Fallow deer run wild in the woods, of a much superior size and flavour to any of their species that are confined in parks." Indistinct traces of this species seem likewise to occur among the alluvial deposits. Thus, Professor Buckland (*Rel. Dil.* p. 18.) found teeth in the Kirkdale Cave, "nearly of the size and form of those of the fallow deer." The deep brown variety was undoubtedly obtained from Norway, and was introduced into Scotland by James the First. Their greater capability of bearing a colder temperature than the spotted sort first occasioned their importation. This kingly sportsman also furnished England with them, by stocking his preserves of Enfield Chase and Epping Forest with a sufficient number of breeders.

324. *The early huntings of the fallow deer* have not engaged much of the notice of historians — the pleasures of this sport being absorbed in the superior character of the pursuit of the stag; nevertheless, we know that the chase of fallow deer was very usually practised, and that it was pursued with hounds of less size and strength than those used to attack the stag. These deer were also coursed by means of one or two gazehounds. Sometimes the dogs were merely used to separate a single buck from the herd, so as to enable the sportsman to reach him with the long-bow or cross-bow. When *puck hunting* of the fallow deer is described, we read of the difficulty experienced in preventing the dogs from changing their object, and hitting off the scent of a new buck; from which circumstance we may judge of the numbers that were to be met with in those times.

325. *The roe was also once as common in Britain as the other species of deer,* though now dwindled to a few specimens, which are only to be found wild to the north of the Forth. The extreme shyness of this animal rendered the chase of it, even when it was in the greatest plenty, a service of much difficulty, as we learn from the romances and legends in which notices of it are introduced.

Subsect. 4. *The Wolf as a British Beast.*

326. *We hardly need a plea* for the propriety of introducing wolf hunting in Britain, when it is notorious that the ravages of this animal proved very destructive, not only to the beasts around him, but also, on many occasions, to the human inhabitants; children in particular, we are told, were sought for by him, and fell a prey to his thirst for blood. Yet, even in this marauder, we can find redeeming traits; for we are not without numerous instances of undoubted authority to prove, that he only wants attention, not only to reclaim him from his habitual ferocity, but also to convert him into an attendant the most faithful and attached (*fig.* 72.). F. M. Cuvier's account of one, of which more anon, strikingly exemplifies what we assert. Here fidelity and affection were exhibited in their most winning characters; and it is well known that the separation of the animal from his master sealed the fate of the faithful and attached brute, for he literally pined himself to death at his departure. Of all the ancient prejudices, that of the unconquerable aversion which particular animals entertain towards us, is one that has kept its hold on the opinion of mankind the longest; yet even this is fast wearing away, and now we are continually meeting with fresh proofs, that every animal may not only be tamed, but may be made a willing, useful, and attached servant to man. We nevertheless consider that the chase of the wolf is not only sanctioned, but imperatively called for, in every country where he maintains his dwelling as a *wild beast.*

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CUVIER'S WOLF.

327. *The wolf* (*fig.* 60. p. 90.) being once common with us also, it became absolutely necessary that the inhabitants around so predacious a foe should be in active and continual warfare with him; nor is it to be wondered at that his utter extermination was attempted at an early period. On the continent of Europe this crafty marauder yet exists in most of its districts, and is probably tolerated in limited numbers for the sport he yields in the chase; neither would it be an easy matter in so extensive a distribution totally to dislodge him. In our country he was an early object of dread, and all possible means were taken for his extermination. The month, which corresponds with our January, was at one period called by the Anglo-Saxons "Wolf-monat;" and the application of the term is thus explained by an old writer on British antiquities: "The moneth, which we now call January, they called Wolf-monat, to wit, Wolf-moneth, because people are wont always in that moneth to be more in danger to be devoured of wolves than in any season els of the yeare; for that, through the extremity of cold and snow, those ravenous creatures could not find of other beasts sufficient to feed upon." The terror which wolves naturally inspired amongst the scattered inhabitants of the half-cultivated lands of England was increased by their habitual superstitions. The same author, in his chapter on the *Antiquitie and Proprietie of the Ancient English Tongue,* says, "*Were-wulf:* this name remaineth still known in the Teutonic, and is as much to say as man-wolf, the Greek expressing the very like in *lycanthropos.* The *were-wolves* are certain sorcerers who, having anointed their bodies with an ointment which they make by the instinct of the devil, and putting a certain inchanted girdel, do not only unto the view of others seem as wolves, but to their own thinking have both the shape and nature of wolves, so long as they weare the said girdel;

and they do dispose themselves as very wolves in wurrying and killing, and waste of humane creatures." A very interesting remark from the same source states, that it is to the terror, which the wolf inspired among our forefathers, that "We are to ascribe the fact of kings and rulers, in a barbarous age, feeling proud of bearing the name of this animal, as an attribute of courage and ferocity. Brute power was then considered the highest distinction of man; and the sentiment was not mitigated by those refinements of modern life which conceal, but do not destroy it. We thus find, amongst our Anglo-Saxon kings and great men, Æthelwulf, the noble wolf; Berthwulf, the illustrious wolf; Eadwulf, the prosperous wolf; Ealdwulf, the old wolf. (*Menageries*, vol. i. p. 98.)

328. "*The extermination of the wolf from England*," Mr. Daniel observes, "was formerly attributed to Edgar. It was certainly first attempted by this Saxon monarch, who remitted the punishment of certain crimes on producing a specific number of *wolves' tongues ;*" but in which we believe Mr. Daniel to have been in error, as the tribute was *wolves' skins*, and not *tongues*. "It was this prince, also, that commuted the tax of gold and silver imposed on the Welsh, for an annual tribute of *three hundred wolves' heads*. Some centuries later, however, wolves had increased so much as to become an object of the attention of Edward the First, who, in the ninth year of his reign, issued his royal mandate to Peter Corbet, to superintend and effectuate their destruction in the counties of Gloucester, Worcester, Hereford, Salop, and Stafford. In other counties great rewards were also given for destroying them. Camden informs us, that certain persons held their lands on condition of hunting and killing the wolves that infested the country; whence they were called the *Wolve hunt lands*. In the reign of Athelstan wolves abounded so much in Yorkshire, that a retreat was built at Flixton, to defend passengers from their attacks. As our Saxon ancestors distinguished January by the title of *wolf-month*, so they also called an outlaw *wolfshed*, as being out of the protection of the law, and as liable to be killed as that destructive beast."

329. "*James the First, of Scotland*, orders his 'schireffs and barons to hunt the wolf, four or thrie times in the Zeare, betwixt St. Mark's Day and Lambe's (from the 25th of April to the 1st of August), quhich is the time of their quhelpes.' James the Second, son of the above, about the year 1451, by act of parliament, directs the sheriffs to 'hunt and slay the wolfe and her quhelpes, three times in the year; and all indwellers of the shire shall rise with them under the pain of one *wedder*.' The last Scottish wolf is recorded to have fallen in Lochaber, A. D. 1680." In Ireland the breed was not wholly extinct until several years after.

330. *The wolds of Yorkshire*, which are a corruption of the word "wilds," appear, from the dates of parish books, to have been infested with wolves later than any other part of England. In the entries at Flixton, Hackston, and Folkston, in the East Riding of Yorkshire, are still to be seen memoranda of payments made for the destruction of wolves at a certain rate per head. They used to breed in the "cars" below, among the rushes, furze, and bogs, and in the night time to come up from their dens; and, unless the sheep had been previously driven into the town, or the shepherds were indefatigably vigilant, great numbers were sure to be destroyed; it being observed of all wild animals, that when they have the opportunity to depredate, they prefer the blood to the flesh of the victim, and of course commit much unnecessary carnage. Having so lately described the practice of wolf hunting in other European countries, from which those of England did not materially differ, regard being had to the corresponding periods of time, we shall not trespass on the reader's patience by any further *wolfish* detail.

Subsect. 5. *The Wild Boar of Britain.*

331. *Wild swine were undoubtedly among the animals indigenous to Britain.* Fitzstephen, who wrote in the reign of Edward the Second, tells us that the forest by which London was then surrounded was frequented by boars, as well as various other wild animals. Other ancient records point at their having been common in most parts of the United Kingdom. A portion of high land in the county of Fife was anciently called Muckross, or, in Celtic, the boar promontory; and other old legends point it out as a favourite haunt of these beasts. The Byre Hills, also so called in the neighbourhood, are but a corruption of the olden term Boar Hills. It is farther stated, either in Martine's *Reliquiæ Divi Andreæ*, or in Sir Robert Sibbald's *History of Fife and Kinross*, that two tusks, sixteen inches in length, that had been taken from a monstrous boar which had long infested the neighbourhood, were chained to the high altar of the church, and long remained there in memory of its slaughter. In Strutt's *Sports and Pastimes of the People of England* two engravings of ancient boar hunting are given, one of the ninth and the other of the fourteenth century; but if the hunters of those day were not more expert in the attack than the draftsman in the delineation of the subject, it is no wonder that the boars of those days lived until their tusks were sixteen inches long.

332. *The true wild boar* (*Sus Scrofa* Linn.) is not now found amongst us, the breed having been wholly reclaimed and merged in our common swine. "The wild boar," as observed by Bewick, "does not, like the domestic hog, vary in colour, but is uniformly of a brindled or dark grey, inclining to black. His snout is longer than that of the tame hog, and his ears are short, round, and black. He is armed with formidable tusks in each jaw, which serve him for the double purpose of annoying his enemy or procuring his food, which is chiefly roots and vegetables; some of these tusks are almost a foot long. Those in the upper jaw bend upwards in a circular form, and are exceedingly sharp at the points; those of the under jaw are always most to be dreaded, for with them the animal defends himself, and frequently gives mortal wounds."

333. *Wild swine*, while young, live together in families, and, thus congregated, resist the attacks of depredating animals. The boars separate themselves from the herd when arrived at full maturity, each betaking himself to his distinct location. He then singly walks the forest, apparently dreading no foe; and though he seldom commences the attack, he can resist the fiercest, being furnished with weapons which enable him to punish any aggression. Conventionally, it is usual to speak of the wild boar only, particularly when treating of the porcine chase; but it must be remembered that there must have been sows as well, and that, as a consequence, there must have been young ones also bred once a year, the wild sow being restricted to an annual pigging. The boar is a solitary animal, except at the brimming-time; but the sow remains with her young until a fresh litter forces them to shift for themselves. It follows, therefore, that in the early swine hunts, when the object was either to lessen the numbers of these animals, to take the greatest quantity of their flesh, or to avoid some of the danger (for the lady sow will fight desperately for her progeny), that one of these families would be an object of the hunter's search. By attacking a litter his weapons might turn to good account; and if he were dexterous enough to save his own bacon, he might give a good account of that of the game he had conquered.

334. *When the wild boar himself was sought for*, ere man was advanced in the use of weapons, a pitfall would be employed; but without doubt the hardy Celts, already expert in rude arms, would, a few of them of tried courage and hardihood, unite against this formidable foe. While some with their dogs were hunting for the hiding-place of the boar, others would plant themselves in ambush near his presumed path, that, as he emerged from the thicket, the bow, the spear, or the lance might be used against him. Bewick says, "When the boar is roused he goes slowly forward, not much afraid, nor very far from his pursuers. He frequently turns round, stops till the hounds come up, and offers to attack them: after keeping each other at bay for a while, the boar again goes slowly forwards, and the dogs renew the pursuit. In this manner the chase is continued till the boar becomes quite tired, and refuses to go any farther; the dogs then attempt to close in upon him from behind, and in this attack the young ones, being generally the most forward, frequently lose their lives. The old seasoned dogs keep the animal at bay until the hunters come up, who kill him with their spears."

335. *In later times a more organised method of boar hunting was observed.* The animal himself was become more rare, and the quality of his pursuers likewise much altered. The boar chase was now pursued with dogs purposely bred and trained to the sport. The effigies of these dogs, which appeared compounded of the mastiff and wolf-hound, are well portrayed in many of the older pictures, particularly in those of Sneyder and Redinger. As these boarhounds were propagated with much regard to the purity of their descent, and were trained with much care, more caution became necessary in the employment of them than in that of the motley crew of many masters engaged in the primitive huntings. Undaunted in courage, the true boarhound would rush on his game without hesitation, and almost as certainly he ran on his destruction. These valuable dogs, therefore, were not so frequently allowed to attack the boar "at force," as formerly, at the first onset, but were purposely restrained until the boar had become somewhat exhausted. The company at these times still continued to form a very motley, though not unpicturesque assemblage. Many sportsmen of the higher orders were mounted, many others on foot, the latter with their leaping poles being enabled to rival the former, unless the chase was long protracted, or that the boar was driven to the open country. The horsemen carried spears, and the footmen were most of them armed either with swords, or with *couteaux de chasse*. Mr. Drax, of Charborough Park, in Dorsetshire. attempted to establish boar hunting in the present century, but without success.

336. *The instructions of an old sporting writer* on the subject of the boar may not be unamusing to the reader; but should he ever be led therefrom to attempt a boar chase, we would have him (particularly if he yield full credence to this author) have especial regard to the boar's teeth, lest they be so "hot" as to burn his fingers, or singe his hair.

337. "*The hunting season of the wild boar*," he says, "beginneth in the midst of September, and endeth about the beginning of December, at which time they go a brimming. A boar will commonly abide the bay before he goes out of his den; and he lies most commonly in the strongest holds of thorns and thick bushes. If he be hunted in a forest, or hold, where he was bred, he will hardly be forced out of it. Sometimes he will take head, and seem to go out, and will draw to the outsides of the wood, but it is only to hearken to every side; and if he hear the noise of the hounds, then will he return, and will not be compelled to go that way till night. But having broken out of a forest, and taken head end-ways, he will not be put out of his way, either by men, dog, voice, blowing, or any thing. If he be a great boar, and one that hath lain long to rest, let him hunt him with a good store of hounds, and such as will stick close to him; and let him on horseback be ever amongst them, charging the boar to discourage him; for, if you hunt such a boar with half a dozen couple of dogs, he will not value them; and they having chased him, he will take courage, and keep them still at bay, running upon any thing he seeth before him: but if he be charged home, and hard laid unto with the hounds, he will turn head and fly. If you strike at him

with your sword or boar-spear, strike not low, for then you will hit him on the snout, which he little values; for he watcheth to take blows upon his tusks or thereabouts: but, lifting up your hand, strike right down, and have a special care of your horse; for if you strike and hurt him, so will he you if he can."

338. "*The hunting spear must be very sharp and broad*, branching forth into certain forks, so that the boar may not break through them upon the huntsman. The best places to wound him in therewith are the middle of his forehead, betwixt his eyelids, or else upon the shoulder; either of these wounds are mortal. If the boar make head against the hunter, he must not fly for it, but must meet him with his spear, holding one hand on the middle of it and the other at the end, standing one foot before the other, having especial eye to the head of the beast, which way soever he windeth or turneth the same; for such is the nature of the boar, that sometimes he snatcheth the spear out of their hands, or else recoileth the force back again upon the hunter, by which means he is in great danger of his life: whensoever this happeneth, there is but one remedy, which is, another of his companions must come and charge the boar with his spear, and then pretend to wound him with his dart, but not casting it for fear of hurting the hunter. The boar seeing this, forsaketh the first man and rushes upon the second, who must look to defend himself with all dexterity, composing his body, and ordering his weapons according to artificial boar hunting. In the meantime he that was overthrown must rise again, taking fresh hold on his spear, and with all courage assault his adversary and assist his friend, who was the cause of the saving of his life. When he feeleth himself so wounded as he cannot live, were it not for the forks of the boar-spear, he would press it on his vanquisher, and so revenge his death; for such is the fury of this beast that he will endeavour to wound and kill, although he feel upon him the pangs of death; and what place soever he biteth, whether man or dog, the heat of his teeth causeth the wound to be inflamed; and for this cause, if he but touch the hair of a dog, he burneth it off; nay, huntsmen have tried the heat of his teeth by laying hairs on them as soon as he was dead, and they have shrivelled up as with a hot iron!!!" Bating, however, the *burning teeth*, the description is good, and offers a true picture of ancient boar hunting.

Subsect. 6. *The Bear of Britain.*

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BROWN BEAR.

339. *Of the existence of the brown bear* (*Ursus Arctos* Linn., *fig.* 73.), in its wild state in Britain, a few *ignorami* have doubted, while others, with more judgment, have authoritatively asserted, its early presence as one of our British indigenous animals. Bewick says, "It was once an inhabitant of this island, and was included in the ancient laws and regulations respecting hunting." Dr. Fleming thus observes on the indigenous bear of Britain: — "This animal not only prevailed in this country at the period of the Roman invasion (for Plutarch relates that they were transported to Rome), but maintained its existence in spite of the efforts of the huntsman, to the middle of the eleventh century at least. In 1057, a *Gordon* is said to have killed a fierce bear; and, as a reward, was permitted to carry three bears' (*boars'?*) heads in his banners. It was reckoned in Wales as a beast of the chase, equal to the boar or the hare; and many places in that country still retain the name of Penn-arth, or the bear's head." (*Pennant's British Zoology*, vol. i. p. 78.) In an ancient Gaelic poem, ascribed to Ossian, the hero Dermid is said to have been killed by a bear in Beinn Ghiel-binn, in Perthshire. The British bear, as just observed, was an article of export to Rome, during those times when the most revolting scenes of cruelty were necessary to stir up the passions of the citizens, already sated with all that was ordinary. These British bears were employed, as we are told, to torment malefactors; of which we have an instance in the fate of Laureolus, thus noticed by Martial: —

"Nuda Caledonio sic pectora præbuit urso
Non falsâ pendens in cruce Laureolus."
De Spect., vii. 3, 4.

"Thus Laureolus, on no ideal cross suspended,
Presents his bare body to the Caledonian bear."

Ray also quotes authority for the brown bear having been one of the beasts which were chased in Wales. We might quote other proofs, but we shall content ourselves with the above; merely observing, that we have not met with any notice of the black bear as a British animal.

340. *Of the ancient British methods of hunting the bear we are but imperfectly informed.* We learn, however, from rude descriptions and ruder figurings, that he was *watched* to his couch, or was *traced* to his winter retirement, when arrows, pikes, clubs, javelins, and long knives we are told were used against him; he was also occasionally betrayed into a pitfall. In later times, the bear was trailed with boarhounds, and dispatched by the spear or knife of the hunter, as the animal rose to grapple with the dogs, or with their master. Bear hunting must have always been a dangerous sport; but if ever the large variety of the bruin family, noticed by Dr. Buckland, was an object of the hunter's attack, the bear hunt o Calydon, as described by Ovid, could alone have equalled it.

341. *Of wild goat hunting, history offers but few notices.* In the *Nobleman's Pocket Companion*, which treats of the sports and recreations of early times, it is observed, "The wild goat is as big and as fleshy as a hart, but not so long legged. The best time for hunting them is at Allhallowtide; and having observed the advantages of coasts, rocks, and places, where the goats lie, set nets and toils towards the rivers and bottoms; for 'tis not to be imagined the dogs can follow them down every place of the mountains. Stand, some on the tops of the rocks, and, as occasion offers, throw stones, and place your relays at the small brooks or waters where the goats come down: but let them not tarry till the hounds come on that were cast off."

Subsect. 7. *Beasts supposed to have been indigenous to Britain, but now extinct.*

342. *Other large beasts*, besides those we have noticed, appear to have been native to Britain; but as no historical notice even hints at the existence of such in our part of the globe, we can only suppose them to have disappeared previously to the advent of the human inhabitants; that they must have lived on the spots where their remains have been found there can be no manner of doubt. Vast masses of animal remains of this kind have occurred in the caves at Kirkdale and Plymouth, and are figured in Professor Buckland's *Reliquiæ Diluvianæ*. They have also been found in the alluvial clay at Lawford, Warwickshire. It is inferred by Professor Buckland, "from the number of bones of other animals occurring in sharp fragments, with the marks of the hyæna's teeth upon them, along with the excrement of that animal, that the Kirkdale Cave had long been occupied as a hyæna's den; and that this species possessed the habit of carrying into caves the remains of its prey."

343. *Extinct tiger:* — The celebrated caves above mentioned have also furnished evidence that tigers were among the indigenous beasts of our island; and they equal, if not exceed, in size similar bones belonging to the Bengal tiger. The two last extinct species, it may be added, occur also, under similar circumstances, in many places on the continent of Europe. To the curious inquirer on this subject we would recommend a most interesting paper on the extinct animals of Great Britain, in the ninth volume of the *Edinburgh Philosophical Journal.*

344. *The mammoth, rhinoceros, and hippopotamus* also appear, by the evidence of their remains found in these caves, to have been British residents, but at what period it is now impossible to determine; nor are we better able to ascertain the date of the existence of the tiger and hyæna. The beaver, now unknown to the British *Fauna*, was once common among us: but the value of his skins, and the pleasures of hunting him to his retreat, have long since proved fatal to his race.

345. *The exterminated British birds are not numerous*, but as they were valuable, their loss is to be regretted. The egret (*fig.* 74.), though not a large member of the heron tribe, is yet one of the most beautiful; and his snowy, silken plumage, gracefully flowing around his neck and down his sides when living, were eagerly sought for to grace the helmets of the military, the caps of the belles, and the turbans of the Turks and Persians. Many olden records show that all the arts of the sportsmen of those days were employed for the capture of this bird; and of its plenty among us in bygone times we may form some idea, if it be, as is supposed, the same with that noticed by Leland, in the list or bill of fare made out for the famous feast given by Archbishop Nevil, where one thousand of them is put down as being required for the occasion. —— Montagu tells us, that of all the feathers of the egret, the scapulars were those most sought after. By some that noble bird, the cock-of-the-wood, or capercaillie grouse, is also considered as extinct, and great has been the lament amongst sportsmen in consequence thereof. When we consider the diminutive size of all our other game birds in comparison with this, the cock pheasant not excepted, we cannot wonder at the regret with which its absence is always noted. There are, however, some hopes that the breed will be restored and eventually perpetuated, as we shall hereafter show.

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EGRET.

Subsect. 8. *The Ancient British Huntings of the smaller Animals.*

346. *The fox* was too great a poacher not to have stirred up the antipathies of the early settlers. Gins, nets, and traps were employed against him. It was common also to dig down on his subterranean retreat, and on that of the marten and badger also, when they were either stifled by firing their holes, or transfixed with spears. The fox also was dug out from his earth, and when he bolted was met by enemies of various kinds. Men, armed with bows and arrows, lances, clubs, &c., assailed him, and dogs worried him. In after times it was pretended that he was treated with more fair play; and that, being unearthed, he was simply coursed by the strong greyhounds of those days. Too often, however, if not overtaken by the greyhounds, he was pierced with arrows as he passed those who ambushed him. In yet more advanced times, the fox (as we shall again notice) was fairly coursed, much after the present fashion of hare coursing. What is now called fox hunting, *par excellence*, was then unknown.

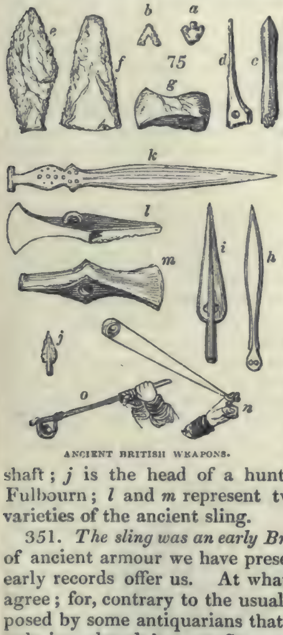
347. *Hare hunting* was probably not practised in this country until long after the chase of the fore-mentioned animals had become common; for the hare was considered one of the unclean beasts, and unfit for food, at the time of Cæsar, who remarks that the Britons did not eat the flesh of that animal, though it was very plentiful. Gradually our forefathers became wiser, and then learned that puss was well to follow, well to come up with, and made a "daintie dish," after all. This disinclination to the flesh of the hare in the early Britons is somewhat remarkable, when we consider how long it had been prized by the inhabitants of those countries from whence the Britons are supposed to be derived. Xenophon, who flourished three hundred and fifty years before the Christian era, had written an express treatise on the subject of hare hunting; and throughout all the eastern countries, we have reason to believe, the chase of this animal was prevalent at very early periods. However, we have proofs that its flesh was not eaten after it was taken by the inhabitants of some of them; but, on the contrary, that it was only pursued for the sport it afforded.

348. *The otter* also was hunted in very early times, as well for pastime as his fur, which was then considered very valuable. The beaver too was not unknown among us in former days. Mr. Daniel says, " The latest account of the beaver is A. D. 1188, at which time it was only to be found in the river Teivi; but it is presumed beavers were very scarce in much earlier periods, as, by the laws of Howel Dha, about the year 942, the price of a beaver's skin was fixed at one hundred and twenty pence; in those days a very large sum." Dr. Fleming observes, " This animal (the beaver) appears, from the testimony of Giraldus de Barri, to have existed only in one river in Wales and another in Scotland, in the twelfth century" (*Hist. Camb.* lib. ii. cap. 3.); about which period it probably became extinct, although the credulous Boece states that they were found in plenty so late as the fifteenth century. It was termed by the Welsh, in the ninth century (*Leges Wallicæ*, vol. iii. p. 11, 12.) *llosdlydan* (literally, *broad-tail*); and in the Gaelic it is still called, from tradition, *losleathen*. (See Mr. Neill's valuable account of some fossil remains of the beaver found in Perthshire and Berwickshire, *Wern. Mem.* vol. iii. p. 207.) The bones of this animal occur in beds of marl under peat-moss, as quoted by Mr. Neill, and in Berkshire also. (*Phil. Trans.*, 1757, p. 112.)

Sect. II. *The Weapons employed in the Chase by the early Britons.*

349. *To pursue the rude pitfall of early times* to the simple machinery of the various traps which succeeded them; to trace the several instruments in use in the hands of our ancestors, to aid them in their offensive and defensive warfare with the beasts of the field, the birds of the air, or the fishes of the water; to mark the progress from the ill-shaped club to the pointed lance and polished spear, and from the simple projectile of the sling to that weapon of universal usage, the bow and arrow; to continue the inquiry to the time when the cross-bow became an active rival to its precursor, the long-bow; and to extend it to that more modern epoch, when all of them gave place to the invention of fire arms, from the clumsy hand-gun to the modern and death-dealing fowling-piece — would be an interesting task, and one worthy of the venerable Bede, or the more modern writers, Strutt and Meyrick. For ourselves, had we even the ability to do full justice to the subject, our limits would not allow of our entering into such details; we must therefore be content with offering a few cursory observations for the reader's consideration.

350. *Of the pitfall, the trap, the toil, and the net*, we have already taken some notice in the *Origin and Progress of Field Sports*, p. 2.; and as what we there stated will apply to any original people, we shall not pursue the subject here. There are, however, a few early British weapons, formed of bone and flint, and of the rudest workmanship, which we cannot pass over without especial notice; although we think it probable that some of our readers may be led to inquire how we are to separate the martial from the mere sporting weapons employed in these early times? We reply, that we may very fairly conclude that, with few exceptions, those weapons which were used against their human foes would also be employed against the wild beasts around them (*fig.* 75.). *a b* represent two arrow heads, the first being in the *Meyrick Collection*, and the other derived from the *Archaiologia*, vol. xv. pl. 2.; *c d* are lance heads of bone, found in a barrow in Wiltshire; *e*, spear head of stone, in the *Meyrick Collection; f*, battle-axe head of stone, in the same collection; *g*, another, taken from a barrow in Devonshire. When the Tyrian traders had taught the early Britons the art of forging these and other articles from a mixture of copper and tin, then a vast change took place in their sporting and also in their warlike implements, as we see in *h*, which represents one of the earliest specimens of the metal spear blade; *i*, another spear head, having the addition of a socket for the shaft; *j* is the head of a hunting-spear dug up in Hertfordshire; *k*, a sword found at Fulbourn; *l* and *m* represent two battle-axe heads, figured in the *Archaiologia; n o*, two varieties of the ancient sling.



ANCIENT BRITISH WEAPONS.

351. *The sling was an early British weapon;* and we must select this from the motley group of ancient armour we have presented a view of, for the many interesting notices which our early records offer us. At what period it was in general use our accounts by no means agree; for, contrary to the usual march, from the simple to the more complicated, it is supposed by some antiquarians that the sling was unknown to the first settlers here, and was only introduced by our Saxon ancestry. But it would be indeed remarkable that this simple projectile, which almost forces itself on the notice of the most barbarous people,

should have remained so long unknown. It might, probably, not have been common in human warfare until the time of the Saxons; but it was without doubt in use in the various sporting amusements of the Britons. Indeed, we are told that the dexterity of the British slingsmen was such as to have almost rivalled that of the Benjamites of old, who, in the figurative language of the East, "could sling to a hair's breadth." Our British ancestors, we are informed, seldom missed any beast they aimed at, either sitting or running, and even birds on the wing were frequently arrested by them. As late as the time of Henry the Eighth there were slingers attached to his companies of bowmen and cross-bowmen. It may not be wholly irrelevant to trace how the most simple and early practices become complicated and diversified by the ingenuity of man. It may be supposed that, in his early state, he first simply threw a stone from his hand in self defence. A cleft stick was probably next used, being found (accidentally perhaps) to propel the stone farther, but with less precision of direction. The sling was then devised, and the stone or ball came by practice to be hurled with unerring aim and deadly force. As luxury increased her train of pleasures, and man sought endless variety, both in his weapons and his instruments, how many devices did this humble missile give rise to, from the bolt of the middle ages to the cannon ball and bullet of the present times. The bow and arrow also, as a weapon against man and beast, we learn was in use among the early settlers in Britain, although little mention is made of bow-shooting before the invasion of Julius Cæsar. As, however, we purpose hereafter to treat of archery under a distinct head, we beg to refer, for what we have to add on the subject of the early use of the bow and arrow among us, to the *Ancient and Modern Archery of Great Britain*, infrà.

SECT. III. *The further Improvements in British Field Sports.*

352. *The sporting practices of the Britons* naturally became improved as their country became peopled, and as the arts of life were multiplied among them. As early as four hundred years before the Christian era, the greater part of Britain was inhabited; and when Julius Cæsar arrived he found a rude but warlike people spread over the island, having their bodies painted, many of them leading a wandering, some probably a nomadic, life; others were more localised, but all appeared in possession of cattle and useful horses in abundance. The wild beasts we have described were however abundant, and the inhabitants universally addicted to the chase of them, both for profit and amusement.

353. *The ancient inhabitants of Britain* did not use horses in the chase; for, as before observed, the face of the country was too rugged, as well as too much wooded, to render riding over it practicable. But it is not probable that the non-employment of them in the chase arose from their being in an insufficient state of subjection to face the wild beasts, as has been conjectured; for we have the testimony of Cæsar himself that the discipline of the horses was great, and the activity and skill of their drivers in the war chariots of those times were most effective. Of their numbers we may form some judgment when we learn that, on the disbanding of the troops by king Cassibellanus, he retained four thousand war chariots. We must therefore conclude that our countrymen had not generally accustomed themselves to mount the horse; and, until they had done this, it is little likely he would be introduced into the chase. Bede informs us that the English began to saddle their horses about the year 631, during the Saxon heptarchy.

354. *The dogs used by the early Britons* appear to have been important objects with them. Three varieties (*fig.* 76.) were cultivated with considerable care; these were the mastiff, the boarhound, and the great rough dog, known as the wolf or gazehound, according to its occupation. They were used by the Britons as the guards of their persons and flocks, and also in the chase, as in the attack of the bear in his lair, the wild boar in his hiding-place, and the wolf in his fastnesses. These useful breeds were also common in all European countries, particularly the northern, varying somewhat in size and substance according to locality and habits. In the above figure we hardly need observe that the mastiff stands first, the boarhound next to him, and the gazehound lies couchant beyond the boarhound. It is a matter of extreme regret that we are so little acquainted with the real figures of these ancient *pugnaces*, *sagaces*, and *celeres*. (See *Dogs of the Ancients*, infrà.)

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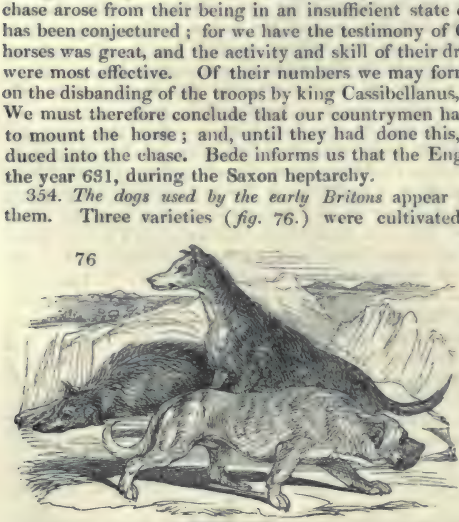

ANCIENT DOGS.

355. *The British climate*, it may be remarked, seems to have been particularly congenial to the development of the mastiff in his best form; thus, in olden times, he was a dog of

great celebrity, and, as we are told, even formed a branch of early British commerce. Our Roman masters, in their times, even had their purveyors here for the purpose of breeding and transmitting the best specimens to their own country, where they signalised themselves greatly in the beast fights. The second dog common among our early ancestors was the great northern boarhound. As this species exhibited slight diversities, according to the different localities he sprung from, or the different degrees of cultivation he had undergone, so in after times he figured under the name and character of Dane, Albanian, Molossian, or Matin. The third was the root from which sprung the Agasæus or gazehound of the English, and the great rough greyhound of the Irish and Scotch. In the rude coursings of wolves, stags, and all beasts of size, strength, and fleetness, which took place in the early periods of our history, the chase was effected by the primogenitors of this dog. We think it not unreasonable to conclude, that the canine varieties we have noticed were those principally in use in very early times. We shall, in our *Natural History of the Dog*, enlarge more fully on the several varieties into which the *Caninæ* generally, but the sporting breeds particularly, have by time and culture become branched out. We shall, however, take this opportunity of quoting the opinion of that ingenious sporting character, Major Topham, on the disputed origin of the greyhound, as particularly relevant to our present subject: — " The greyhound employed in ancient coursing was probably larger than even the warren mongrel (by which we presume the major means the lurcher), resembling more the shaggy wolf dog of former times than any sporting dog of the present day."

356. *Much of our information on the early British sportings* has been derived from two treatises on hunting, thus noticed by Strutt: — " The earliest of these treatises was originally written in French, by William Twici, or Twety, grand huntsman to King Edward the Second. I have never seen the French tract; but the manuscript I spoke of is in English, and, from its appearance, nearly coeval with the original, but the name of John Gyfford is joined to that of Twety, and both of them are said to be *maisters of the game* to King Edward, and composed this treatise upon the 'crafte of huntynge.' The other, as before observed, was written by the master of the game to Henry the Fourth, for the use of Prince Henry, his son, and is little more than an enlargement of the former tract. The book of St. Albans, so called because it was printed there, contains the first treatise upon the subject of hunting that ever appeared from the press. It is however evidently compiled from the two tracts above-mentioned, notwithstanding the legendary authority of Sir Tristram, quoted in the beginning. Twici introduces the subject with a kind of poetical prologue, in which he gives us the names of the animals to be pursued; and these are divided into three classes. The first class contains four, which, we are informed, may be properly called beasts for hunting, namely, the hare, the hart, the wolf, and the wild boar. The second class contains the names of the beasts of the chase, and they are five, that is to say, the buck, the doe, the fox, the martin, and the roe. In the third class we find three, that are said to afford 'greate dysport' in the pursuit, and they are denominated, the grey or badger, the wild cat, and the otter. Most of the books upon hunting agree in the number and names of the first class; but respecting the second and third they are not so clear. The beasts of the chase in some are more multifarious and divided into two classes; the first, called beasts of sweet flight, are the buck, the doe, the bear, the reindeer, the elk, and the spytard." Spytard, as Twici informs us, is an hart a hundred years old. We are of opinion that they were very scarce. " In the second class," continues Twici, " are placed the fulimart, the fitchat, or fitch, the cat, the grey, the fox, the weasel, the martin, the squirrel, the white rat, the otter, the stoat, and the pole cat, and these are said to be beasts of stinking flight." (*Sports*, p. 16.)

357. *The sporting dogs, enumerated by the manuscripts* alluded to, show the advance of art as well in the methods in use, as in the variety of the agents employed in the chase. Strutt, from these authorities, offers the following list:—" Raches or hounds; running hounds or harriers, to chase hares; and greyhounds, which were favourite dogs with the sportsmen; alauntes, or bull-dogs, these were chiefly used for hunting the boar; the mastiff is also said to be 'a good hounde' for hunting the wild boar; the spaniel was of use in hawking. 'Hys crafte,' says the author, 'is for the perdrich or partridge, and the quaile; and, when taught to crouch, he is very serviceable to the fowlers, who take those birds with nets.'" " There must, I presume," continues Strutt, " have been a vast number of other kinds of dogs known in England at this period; these, however, are all that the early writers, upon the subject of hunting, have thought proper to enumerate. In the sixteenth century the list is enlarged: besides those already named, we find bastards and mongrels, lemurs, kenets, terrours, butchers' hounds, dung-hill dogs, trindel-tailed dogs, 'prycke-eard' curs, and ladies' small puppies." (*Ibid.* p. 17.)

358. *The chase after the necessaries of life*, in the time of Elfric, had become an organised pursuit. In the dialogues composed by him, to instruct the Anglo-Saxon youths in the Latin language, which are yet preserved to us, we have some curious information concerning the manners and trades of our ancestors. In one colloquy the fisherman is asked — " What gettest thou by thine art? — Big loaves, clothing, and money. How do you take them? — I ascend my ship, and cast my net into the river; I also throw in a hook, a bait, and a rod. Suppose the fishes are unclean? — I throw the unclean out, and take the clean for food. Where do you sell your fish? — In the city. Who buys them? — The citizens; I cannot take so many as I can sell. What fishes do you take? — Eels, haddock, minnows, and eelpouts, skate, lampreys, and whatever swims in the river. Why do you not fish in the sea? — Sometimes I do, but rarely, because a great ship is necessary there. What do you take in the sea? — Herrings and salmons, porpoises, sturgeons, oysters, and crabs, muscles, winkles, cockles, flounders, plaice, lobsters, and such like." (*Penny Magazine*, vol. v. p. 56.)

Sect. IV. *The Field Sports of Britain during the Roman Ascendency.*

359. *When the natives of Britain* submitted to the Roman yoke, it is natural to suppose that the manners and diversions of the conquerors would be introduced. By these accessions, much of the hardihood and simplicity of character of the conquered, gave place to a portion of the civilisation and refinement of their masters. It followed, therefore, as regards the sports of the field, that while they evinced more art, they were conducted with less vigour. Attached to gaudy spectacles, the Romans in some degree neglected the real chase; and hence it happened that, during their occupancy of our country, few restrictive laws were passed for the preservation of game, or for the confining its pursuit to privileged hands; it became, on this account, the property of any persons who could find and take it. Instead of

fostering legitimate field sportings, and the more natural chase of animals in woods and plains, the Romans transferred here the contests of the arena; and vast amphitheatres for the exhibition of the *games*, as they were termed, sprung up in various parts of the kingdom, of which those of Rushborough, Carleon, Silchester, Dorchester, &c., are examples.

360. *It does not however appear* that our ancestors ever entered heartily into these Roman amusements; less, it is probable, from their more humanised character than from a natural hatred of their masters, which made them, although always conquered, ever rebellious. The pursuit of deer, the chase of the wolf, boar, and bear, therefore continued to occupy the attention of the Britons, which sports they diversified with the destruction of the fox, the badger, the otter, the wild cat, &c., &c. The methods employed were only slightly varied, and the attack was made by snares, nettings, traps, and pitfalls; in the use of which we are told they were singularly dexterous and successful. The eagle and falcon tribes, which made havoc on their domestic animals, they captured by luring them into a trap, which exhibited a living lamb securely fastened to it, whose bleating attracted their attention.

361. *The anglings of this time were most rude*, but nets were successfully employed, both in the fresh and salt waters. Even for centuries after, the rod and line were burlesque instruments, and either the finny tribes were not furnished with the hereditary caution we now observe among them, or a well-stored pannier must have been a wonder in those days.

362. *The ravages of the Picts and Scots*, after the departure of the Romans, left the wretched Britons little leisure to cultivate the sports of the field, further than the occasional exertions which were forced on them to dislodge from their fastnesses such predatory beasts as had established themselves in the immediate vicinity of their flocks, or threatened their own personal safety; and we presume it was on this account that the ancient records of the chase, during the period of these intestine troubles, are so exceedingly meagre; but we approach a more active and interesting epoch.

Sect. V. *British Field Sports during the Saxon Heptarchy.*

363. *The Saxon conquest of Britain tended to diversify and enlarge the sphere of its field sportings.* Hardy in nature, and fertile in enterprise, the pursuits of these predatory northerns, whether for profit or amusement, were marked with ingenuity, and followed with determination. Their presence, therefore, had a salutary influence over the Britons in rubbing off the rust of sloth and effeminacy, which the pernicious examples of the Romans had spread over their character. But as essential benefits are seldom obtained without some preponderating sacrifices, so these Saxon masters introduced among us their own love of gambling; which they sowed with such industry in a soil but too luxuriant to refuse it a deep rooting, that it has unfortunately grown with our growth, and strengthened with our strength to the present day, and will probably proceed on until the stream of time shall annihilate the gambler and the game. Strutt informs us that, to such a pitch was this destructive mania carried, both by the conquerors and the conquered, that they have been known to stake their whole possessions on a single throw, and afterwards their personal liberty on another. Chess and backgammon were favourite games at that time; but in common with all games of chance were considered as secular pursuits, and therefore were forbidden to the clergy of that rude day. An ancient tablet from Strutt would give reason to suppose that the chess-board was a constant accompaniment in the tented field, where indeed the game is peculiarly appropriate.

364. " *The sporting practices and pastimes practised by the Saxons*," says Strutt, " appear to have been such as were common among the ancient northern nations; and most of them consisted of robust exercises. In an old *Chronicle of Norway*, we find it recorded of Olaf Tryggeson, a king of that country, that he was stronger and more nimble than any man in his dominions. He could climb up the rock Smalserhorn, and fix his shield upon the top of it; he could walk round the outside of a boat upon the oars, while the men were rowing; he could play with three darts at once; he excelled all the men of his time in shooting with the bow; and he had no equal in swimming."

365. *The attachment of the Saxons to field sports is so universally acknowledged*, that the sportsman ever finds a redeeming excuse for some other evils entailed by them; among which, in a popular point of view, were the attempts of the Anglo-Saxon monarchs to confine field sports within the pale of royalty and nobility. It may however be questioned, whether at that period the restriction was not favourable to the advancement of the arts of life, and to the civilisation of the middle classes. Among the aristocracy it was cultivated as their accomplishment. Strutt says, " As early as the ninth century, and probably long before that period, hunting constituted an essential part of the education of a young nobleman." Asserius assures us, that Alfred the Great, before he was twelve years of age, was a most expert and active hunter, and excelled in all the branches of that most noble art, to which he applied with incessant labour and amazing success! It is certain that, whenever a temporary peace gave leisure for relaxation, hunting was one of the most favourite

pastimes followed by the nobility and persons of opulence at that period. It is no wonder, therefore, that dogs proper for the sport should be held in the highest estimation. When Athelstan, the grandson of Alfred, had obtained a signal victory at Brunanburgh over Constantine, king of Wales, he imposed upon him a yearly tribute of gold, silver, and cattle; to which was added a certain number of 'hawks, and sharp-scented dogs, fit for hunting of wild beasts.' His successor, Edgar, remitted the pecuniary payment on condition of receiving annually the skins of three hundred wolves." (*Sports and Pastimes*, p. 4.)

366. *The reign of Edgar* was marked with a degree of patriotism worthy of his renown. He attempted the total extirpation of the wolf, the bear, and the boar. The wolf he nearly expelled from England; but in Wales, Scotland, and Ireland, they still continued their ravages; and it was not until a century afterwards that the last Scotch wolf was killed by Sir Ewen Cameron. The war against the beaver also (*fig.* 77.), at these periods, was severe; not for his demerits, but for his skin. Alas! we regret that this surprising aquatic architect is lost to us, and apparently for ever. The lovers of the marvellous, however, have exalted these animals beyond measure, making their tails to be alternately a sledge and a trowel; and that as plasterers, both in the strength and neatness of their work, they exceeded all others: yet enough of fact is still left to excite our admiration, both at the convenience and solidity of their habitations; and if they did not extend their civil institutions to the selection and appointment of individuals to distinct operations, it is evident they worked by an instinctive rule, and with one accord.

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BEAVER.

367. *Falconry*, which had been certainly known in Britain in the seventh century, was much practised during the latter periods of the Saxon ascendency. Vast prices were given for hawks, and it was made felony to steal one. The sport also became restricted to certain ranks, and its practice proved very burthensome to the tenantry. We are indeed informed, that the hawking attendants in the train of the great were so onerous on lands, as to make their absence, and that of the horses and dogs, a privilege.

368. *Literature appears at this period to have been at a very low ebb;* even Alfred the Great was twelve years old before he learned to read, and he would probably have remained much longer in ignorance had not his mother beguiled him into learning by showing him a book with many paintings in it, which she promised to give him on condition that he learned to read it. (*Asser, in Vita Alfredi.*) Indeed, in times much posterior to these, the learning of the English nobility was but little further advanced. Sports and pastimes engrossed almost the whole of their attention; nor was it unusual to see them assembled around their banqueting-halls, with their hunting dogs lying below, and their hawks perched over their heads; these animals being in all cases admitted as favoured and accustomed guests. Some early delineations represent the nobility of these times seated at table with their hawks upon their heads.

Chap. II.

The National Sports and Pastimes of the Welsh, Scotch, and Irish.

369. *The localities of these countries*, the nature and character of their inhabitants, and the different degrees of cultivation they had attained, would necessarily occasion some variation of feature in their pastimes, and also in the mode of conducting the several practices of the chase. We shall therefore take this opportunity of glancing at such national games as were particularly appropriate to each; and also at any peculiarity in the methods followed by the inhabitants of each country in their pursuit of game as a sporting people. Our future descriptive course will include the field sports of these British dependencies, and those of England, in one common account.

Sect. I. *The Field Sports of the Welsh.*

370. *The attachment of the Welsh, or ancient Britons,* as they are termed, to field sports, was carried with them from the English plains from which they had been driven by the Saxon invaders; and in no respect did this their native trait shine forth more remarkably, than in the importance attached to the various officers connected with the hunting establishments of the Welsh kings and princes. Captain Brown, in his *Historical Account of Hunting*, observes, — "The huntsman was entertained, together with his servants and his dogs, by the tenants who held lands in villanage from the king. From the 9th day of November he brought his hounds, and all appurtenances, for the inspection of the king; and then the skins of the animals which he had killed in the preceding season were divided according to a settled proportion between the king, himself, and his attendants;

and such were the high powers of this personage, *i. e.* the huntsman, that he had a right to divide all shares, and the king had only the right to choose his share. A little before Christmas this officer returned to the court to support his rank, and enjoy his privileges. During his residence at the palace, he was lodged at the kiln-house, where corn was prepared by fire for the dogs. His bugle was the horn of an ox, valued at one pound. Whenever his oath was required, he swore by his horn, hounds, and leashes. He could not be summoned before a court of judicature, unless at an early hour in the morning, before he had put on his boots; for, after they were on, he was beyond the reach of the law. It was also his duty to accompany the army on its march, with his horns, and to sound the alarm and the signal of battle. His protection also extended to any distance which the sound of his horn could reach. The laws declared that the beaver, the martin, and the stoat, were the king's wherever killed; and that, with the furry skin of these animals, his own robes were to be bordered. The legal price of a beaver's skin was stated at ten shillings. Hinds were hunted from the middle of February to Midsummer, and stags from that time to the middle of October." (*Sketches and Anecdotes of Horses*, p. 123.)

371. *The laws of the Welsh chase* are printed in the third volume of *The Archaiology of Wales*, from ancient manuscripts in the possession of the Earl of Macclesfield, in which rules for the professional conduct of sportsmen, and the terms to be used by them, are thus stated :—"Of the nine kinds of game three are common : 1. the stag, 2. a swarm of bees, 3. salmon ; the 1. bear, 2. climber, and 3. pheasant, are baited game ; and the 1. fox, 2. hare, and 3. roebuck, are hunted with a shout. The stag is said to be one of the three common kinds of game ; first, because he is the bravest and the most energetic of animals that is chased with hounds and greyhounds ; and secondly, because he is parted to every one that comes in at his death, and before he is stripped of his skin. For, if a man on his journey come up at that time, he shall obtain a part of it, according to law, equal to him that kills it. A swarm of bees is common game, because whoever finds one, either upon his land or upon the land of another, he must divide it with any person who may come up to him before he has placed a mark upon it ; for it is necessary that the finder should mark it to show that he found it first ; but if he neglect to do so, whoever comes there shall obtain a part of it, and the proprietor of the land shall have four pence. Salmon is called common game, because, when it is taken in a net, or by a spear, or in any other manner, any one who may come up to the spot, before it is divided, shall have a share equal with the man who caught it, if it be in common water.

372. "*The bear is baited game*, because its flesh is the best of the chase ; neither is it chased to any distance, for it can only move slowly ; therefore it is only necessary to bait, bark, and kill it. A climber is every animal which climbs to the top of the tree for its own defence. When discovered, the hunter ought not to say a martin, wild cat, squirrel, weasel, but to call them the grey climber, the black climber, and the red climber. Now such animals do not push away to any great distance, but merely ascend a tree, where they are hunted by baiting and barking. A pheasant is called baited game, because, when the dogs come upon it, it generally takes to a tree, where it is hunted by barking and baiting.

373. "*The fox is called the noisy game*, because it is chased by shouts and blowing of horns, whilst it steadily pursues its course until tired. The hare is also called the noisy game, because she constantly adheres to a certain course, or circle, while she is chased. The roebuck is likewise termed the noisy game for the same reason. The best flesh of the chase is that of the stag, the hare, the wild boar, and the bear.

374. "*If greyhounds shall be let loose after a stag*, or any other animal, and the dogs pursue it over a hill, out of sight, and kill it, the game shall belong to the person whose greyhound was foremost when the dogs were last observed. But the owner of a greyhound bitch shall not obtain the skin on account of her superiority, unless she shall be in whelp by the greyhound dog that has the advantage of the skin, and in such a case he shall obtain it.

375. "*Respecting the hare*, whoever kills her, whether by his dog or any other means, shall have her, if he has been seeking her in the fair chase. Every one who carries a horn must distinctly know the nine species of game ; and if any one cannot give correct answers respecting them, he shall forfeit his horn. And any one who comes to the chase with his leashes about him, and cannot give just replies respecting the nine species of game, shall forfeit his leashes ; but if he reply properly, his leashes shall remain secure about his arm.

376. "No person shall let loose his greyhound, whether dog or bitch, upon an animal when chased by the hounds, unless both the hounds and greyhound belong to him who is hunting ; and if any one do so, the person who is following the hounds may destroy the cord which is fastened about the greyhound so loosened.

377. "*No person shall shoot at an animal*, which is considered game, whilst lying in its cover, under pain of forfeiting his bow and arrows to the lord of the manor. But he may shoot and kill it, if he can, when it is chased ; but he must not shoot amongst the dogs.

378. "*If any one proceed to the chase and pursue game*, and fresh dogs come up with the game so pursued and kill it, he who owns the dogs which started it shall have it, unless the fresh dogs belong to the king. The game that is chased may ever be claimed by the first sportsman, unless he turns towards home, with his back upon the chase. But if his dogs should be chasing, and he having left them, he can claim nothing of what is killed by fresh dogs, for the game so killed is his to whom the fresh dogs belong." We presume the reader cannot fail to be struck by the vast difference seen between the ancient and modern game laws.

379. *Mr. Pennant has also furnished a list of game in the language of the country*; but if we remember aright, *ceiliog coëd*, literally, the "cock-of-the-wood," which, according to the above rules, is translated *pheasant*, is by Mr. P. said to be the *capercaillie*, or cock-of-the-wood. Mr. P. also supposes the otter to have been an object of the Welsh chase, there being a *cylch dyfrgwn*. or annual payment, for the prince's water-dogs.

380. *Coursing*, it seems, was a very favourite diversion of the ancient Britons, and was called *helfa a dolef*, or the shouting chase, because attended by the clamour of the sportsmen; and in it were comprehended the fox, the hare, and the roe. The method of hunting was either with hounds or greyhounds, which they let slip at the animals, holding the dogs in leashes. There is every reason to believe that the greyhounds of Wales were of the Scottish Highland breed. No one was to slip his greyhound when the hounds were in chase, unless he had a hound in the pack, on penalty of having the greyhound hamstrung. Neither were the Cambro-Britons behindhand in other varieties of field sporting: in hunting they excelled, as well as in every device for the capture of fish as well as of fowl. How zealously falconry was pursued by them, the prohibitory statutes enacted for the protection of the nests of the various hawks in request, and of the game at which they were to

be flown, particularly the heron, will show. "The consequence annexed, about the year 942, to the falconer of Howel Dha, Prince of Wales, we gather from the rules of his household; and we have every reason for believing (with the exception of a few national peculiarities) that these regulations were formed upon the same model as those of England. Among the twenty-four great officers of the Welsh court, the fourth was the great falconer, and he was limited to three draughts only of strong liquor at the royal table, lest intoxication should make him neglect his hawks. When this courtier succeeded in his sport, the prince rose to meet him, and sometimes held his stirrup. The *pencyryd*, or great huntsman, was the tenth in order. Among other privileges, this important dignitary was exempted from swearing, unless 'by his horn and by his hounds.'"

Sect. II. *The Field Sportings of Scotland.*

381. *The records of the chase*, as pursued among the Scots, are nearly coeval with our own; and in the leading features of the one we recognise the general characters of the other, allowing something for a diminished temperature and greater elevations. Our accounts of the manners and pursuits of these northern inhabitants of our island are traceable to more than three hundred years before Christ, and they all agree in describing them as brave, hardy, and politic, and as excelling in hunting the wild beasts around them. Caledonia must indeed, from the nature of the surface of the country, long continue to offer powerful excitements to preserve the more masculine features of the chase, when cultivation and population have extirpated some of the most prominent objects of it in other localities.

382. "*The chieftains in the Highlands of Scotland*, in early times, hunted," we are informed by Captain Brown, "in a style of oriental splendour. In their grand hunting excursions they were often followed by some thousands of their clansmen, who surrounded great tracts of country, and drove the game to where the chiefs had taken their station, who then destroyed them at their leisure. For the reception of James the Fifth, the queen, his mother, and the pope's ambassador, the Earl of Athol constructed a palace of green timber, interwoven with boughs, moated around, and provided with turrets, portcullis, and drawbridge, and furnished within with whatever was suitable for a royal abode. The hunting continued for three days, during which, independently of roes, wolves, and foxes, six hundred deer were captured — an incredible number, unless we suppose that a large district was surrounded, and the game drawn into a narrow circle to be slain, without fatigue, by the king and his retinue. On their departure, the earl set fire to the palace — an honour that excited the ambassador's surprise; but the king informed him, that it was customary with Highlanders to burn those habitations which they deserted. The earl's hospitality was estimated at the expense of a thousand pounds daily — at present equivalent, at least, to three thousand pounds sterling." (*Sketches and Anecdotes of Horses*, p. 130.) On another occasion, it is said, James "summoned his nobility to attend him with their horses and dogs; which they did in such numbers, that his hunting retinue consisted of above eight thousand persons, two-thirds of whom were well armed. This preparation gave no suspicion to the borderers, as hunting matches in those days commonly consisted of some thousands; and James, having set out upon his diversion, is said to have killed five hundred and forty deer." Venatorial sports were then confined to royalty and nobility as much as in England, and the birds and beasts that were specifically interdicted as game, varied according to the caprice of legislators. In Scotland, the last act of the prohibitory kind before the accession of James to the English crown is found in 1590. It is remarkably minute, and describes by name nineteen sorts of game, which are neither to be bought nor sold, on penalty of one hundred pounds. It closes with a limitation as to the time of beginning "to eat moor poute, or partridge poute."

383. *The stag, in a state of nature, is still to be met with in this paradise of wild sports.* In Mar forest, and the western parts of Ross and Sutherland, red deer yet offer to the southern traveller a realisation of those scenes which he has before only met with in story. In these wild districts, but more particularly in the vicinity of the duns or forts, as that of Dornadilla (*fig.* 78.), they used to cluster; and on spots of this kind all the huntings of former times are yet reacted. From the fleetness of the deer, and the nature of the ground on which they are found, horses and hounds of the usual kind are of no use in the chase of them, as the steed would be required to leap precipices of fifty feet, instead of gates of five bars; and the dogs would be constantly tumbling into gullies and ravines, which are cleared by the deer at one bound. Deer cannot, therefore, here be driven "with hound and horn," as was the case in the days of the "barons bold;"

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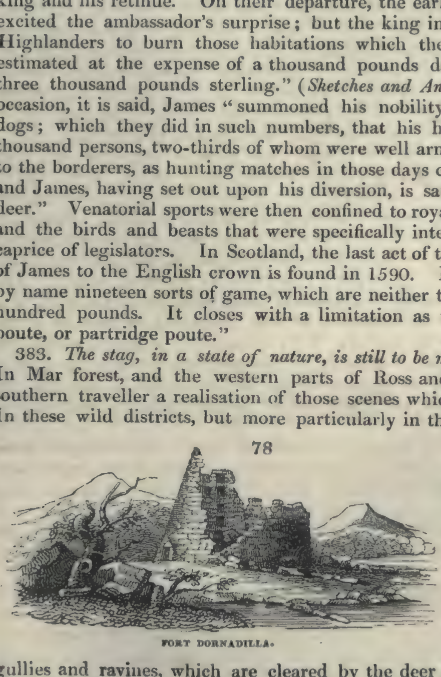

FORT DORNADILLA.

but they must be pursued by what is termed *stalking;* which method will be more fully explained hereafter. It is not easy to account for the fact, unless on the score of some peculiar vegetation met with about those forts, both of Scotland and Ireland; but it does appear that, to this day, such spots are found to be the most usual haunts of game, but particularly of the four-footed kinds, and most of all by deer.

384. *Hawking appears to have been especially protected in the feudal times of Scotland*, and in the fifteenth century some severe enactments were made to punish any offenders found guilty of robbing the nests of hawks, or destroying the birds themselves. The white hare inhabits the mountains and grouse-ranges of the country. In speed it is somewhat inferior to the ordinary species, but it is more cunning, and affords a tail-on-end chase. On being started, it will bound forward for a little way, then stop and listen, and if hard pressed will start off at full speed, making direct toward some high hill or craggy ravine. In summer the animal is of a light fawn colour, with black-tipped ears; in winter its fur whitens in proportion to the severity of the season.

385. *Scotland yet boasts of the possession of the roebuck in its Highlands*, a few specimens being to be met with from Ross-shire to Loch Lomond. The Duke of Montrose and Sir James Colquhoun are deserving of high commendation for their protection of these beautiful animals, who carry with them something of the high bearing of former times, and are particularly deserving of our sympathy, for the arts they display in so long resisting the pursuits of the hunter. It is said that they are to be found also in some of the islands on the western coast of Scotland; and we do heartily hope that this remnant of feudal sports may long be spared from utter extermination. To them also we shall again recur.

386. *The grouse family*, with the exception of the cock-of-the-wood, it is well known, is found in greater abundance in Scotland than in any other part of the British isles. The capercaillie, or cock-of-the-wood, once graced her pines also; it became extinct in Britain, and has only recently been re-introduced from Norway. The ptarmigan, or white grouse, is also plentiful; salmon and trout are to be found in all the rivers, and no one can be too warm in the commendation of fly-fishing in Scotland. The pleasure of sporting there is further enhanced by the magnificence of the natural scenery. Amongst late works on sporting in Scotland we must refer with commendation to the *Moor and Loch*, by Colquhoun.

Subsect. 1. *The Golfing of Scotland.*

387. *The game of Golf* (pronounced *Goff* or *Gowf*) is peculiar to Scotland, where it is a completely national game. The word *golf* is derived from the German *kolbe* or the Dutch *kolf*, all having the same meaning, *club*, or *game of the club*. This sport is as ancient as it has always been popular in Scotland; for, as early as 1457, statutes were promulgated against it, " lest it should interfere with the practice of archery, so necessary to the martial education of the youth of this country." In 1744, on the contrary, the city of Edinburgh voted to the company of golfers a silver club to be played for annually. This game is, at present, a favourite amusement with all classes who reside near *links* or commons.

388. *Golfing is played with a club and a ball.* The club is from three to four feet long, according to the height and length of arm of the player. It is curved and massive towards the head, to give it scope, weight, and strength. This head, or knob, is formed for strength from some very tough wood, as beech; and as it curves and proceeds upwards, it is planed off, so as to adapt itself to the handle, to which it is very firmly glued, and tightly corded down. A want of due attention to these particulars, in the manufacturing it, will render the head liable to split and fly off by either a very hard or indirect stroke. The face of the club is farther secured, or faced, by a piece of hard bone, a quarter of an inch thick. It is also loaded with from four to six ounces of lead, according to the will of the player. The handle is usually bound with leather. It is, however, to be remembered, that the form of the club, the materials of which it is made, and the numbers taken to the golfing ground, vary considerably according to circumstances and to the habits of the players, who are provided with varieties to suit every peculiarity under which the ball may be placed.

389. *The golf ball is about the size of an egg, and is made very hard.* Golf balls are made of *Gutta Percha.* They are first cast in a mould, then hammered to give them consistency, and finally painted with several coats of white lead. The game is played by two or more persons.

390. Links, or, as they are termed south of the Tweed, commons, are indispensable for the pursuit of this recreation, and it may be stated, as a rule, that wherever links occur in Scotland, there also occurs golf.

A series of small round holes, of half-a-dozen inches diameter, are cut in the turf, at distances of from one to three or four hundred yards from each other, according to the nature of the ground; and the rival players who are provided each with a set of clubs and balls, commence at the first hole, and strike off their balls in the direction of the second. The player who succeeds in *holing* his ball in the second hole in fewest strokes, wins that hole; but if both players hole their balls in the same number of strokes, the hole is halved. From the second they drive towards the third hole; and so on, till the round is finished —

that is to say, till they arrive at the hole from which they started. It may be almost needless to add that he who has won the greatest number of holes in the round, wins the round or match. And further, a match may consist of several rounds, so that the winner of the greatest number of rounds is the gainer of the match. Sometimes, too, when players are very equally matched, neither party has, at the close of a day's play, gained an advantage; every round has been halved, hence the match itself is halved, and remains to be played another day. Though this process of halving may appear dull and insipid to non-golfers, it occasions intense interest to the players themselves, as well as to those spectators who have an interest in the result, for it inspires the men to do their very best when they meet again on the green; and again it renews the excitement and interest of the followers.

Clubs.—Each club in the golfer's set has its proper appellation, and the following are their names: The play-club, long-spoon, mid-spoon, short-spoon, baffing-spoon, driving-putter, putter, sand-iron, cleek, and niblick; the last three have iron heads, the others are of wood. In some links, several of these clubs may be dispensed with, and the number reduced to six or seven; but in greens, such as St. Andrews, Musselburgh, Prestwick, and some others, they all come into requisition more or less. The play-club is for swiping off the tee (see Glossary), and is further used throughout the green if the ball is lying fair, and the distance more than a full drive from the hole you are approaching. *Chambers's Information for the People* supplies ample notices of the uses to which these different clubs are applied.

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GOLFING SCENE.—"STRIKING OFF."

391. In noticing the chief points requisite for the attainment of proficiency in golf, and a few of the leading characteristics of this excellent game, we shall assume that the reader is ignorant of every point of the game, and that he has never seen it played. First, then, there must be links, and these links must be adapted to golf-playing; if golf *is* played to any extent on these links, there are sure to be *professionals*, and into the hands of one of these we advise the tyro to commit himself. This will insure him learning the game in one-tenth part the time it would otherwise take him, will insure for him a good style to begin with, which, unless he wilfully changes it, is never likely to forsake him; besides it will act as a check upon his attempting too much at first. In such hands, the learner's game is gradually developed, and the result will be that, if he follows his teacher's advices, and suppresses every rising but treacherous ambition to excel at first, he will soon rank as a sound steady golfer, and will in time probably become a first-class man. Begin young; get a good style at first; practise in moderation, and never fatigue yourself by over-exertion; and in six months you may challenge many a man who has practised an indifferent style for years — perhaps for a lifetime.

If the novice attempts to teach himself, from merely observing others play, the chances are that he will acquire an erroneous style and false ideas that may cling to him always.

And let us here mention that it is much easier to start with a wrong than a right style, and that it is exceedingly difficult to shake off the former, and gain the latter afterwards. Should it be impracticable to obtain the services of a professional, the learner may consider himself fortunate if he is taken in hand by some friend who knows and practises the game well. Should he lack the services of both professional or friend, his difficulties are much increased, but may be lessened by attending to the following directions. Procure a set of clubs from a good maker, such as M'Ewan of Musselburgh (Edinburgh), Wilson or Forgan of St. Andrews (Fife), or Dunn of Blackheath (London). Practise with short clubs at first, as they insure the steadiest play. Purchase a few gutta-percha balls from reliable makers, such as Allan Robertson of St. Andrews, Dunn of Blackheath, or Gourlay of Musselburgh. Put on shoes with strong nails, to insure a firm footing on the grass; and if your hands are tender, wear an old pair of kid gloves, of not too tight a fit. You are now equipped, and may proceed to the links. The distance between the starting and first hole is say four hundred yards, and between them lies a dangerous sand-pit, not to mention a few provoking whins (gorse). Your object is to drive your tiny gutta-percha ball, stroke after stroke, along the intervening space, till you reach within a short distance of the six-inch hole, and then, by a few gentle refined strokes, to pop it in. If you know how to manœuvre one hole such as this, you may accomplish all the others with more or less success, and arrive at the starting-point, thinking you have done wonders; but, as you have not started yet, you have still to learn. The chief points worthy of attention are the following:

[386.] 1. *How to handle the Club.*—The true method will be seen at a glance in the subjoined figure. Let the wrists be free, and grasp your club with moderate pressure, but *not tightly;* in striking, or swiping, as it is called, the eye must never for a single instant wander from the ball, and the club should be lifted slowly over the right shoulder, and brought down quickly to the ball—three-fourths of a circle being described by the action. This mode of handling and swinging should be practised before attempting to strike a ball; in fig. 80, the action of swinging will be seen. Never exert your whole strength in delivering a swipe; golf is a game of skill and nice art, not one of brute force, and if too much force be used, the chances are that you *founder* your ball, and either top it or drive it a comparatively short distance. The easier a stroke is taken, the greater the chance of hitting the ball correctly; the mere swing of the club will drive a ball a long distance, and with more certainty of the beginner's keeping the right direction than if much force had been applied.

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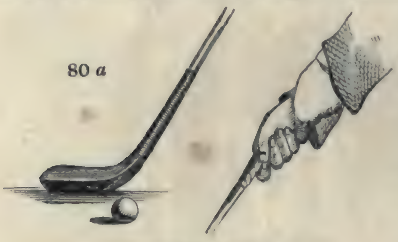

HANDLING THE CLUB.

2. *How to stand to the Ball.*—The feet should be moderately well apart (about a foot and a half is sufficient), and the left foot should be nearly opposite the ball, at a distance varying with the clubs used; for instance, in using the ordinary driving-club, two feet and a half is a good distance between foot and ball. Be careful not to exceed this distance, nor be much within the mark, as the player is apt, when standing too far from his ball, to fall *in* to it, and run the chance of making a bad shot. When standing too near, the ball is often "*heeled*," or struck with that part of the club-head nearest the shaft. When this is the case, the ball flies off to the right. When standing too far, the ball is apt to be "drawn" or "hooked"—that is to say, struck with the point or "toe" of the club, in which case the ball flies in to the left. It is thus important to learn the proper "stance," or space to keep between the player and the ball, a lesson which a little practice soon teaches. These remarks apply only to driving through the green.

[387.] Having grasped your club, straddled to your ball, and swung your club as in the foregoing directions, down it comes to the ball, and most likely misses it. Do not be disconcerted at this, but try again, and take plenty of time. There, you have struck it from the *tee*, and the ball bounds along the green-sward about fifty yards. Nearly every beginner "misses the globe" the first shot, and tops his ball the second, so you are no exception to the rule, but may even congratulate yourself upon not missing twice running! A boy carries your clubs, and you follow the ball; it lies in a small indentation of the turf or a "cup," so you must take your long-spoon to drive it out. Now, by one of those occurrences peculiar to tyros at golf, you have not only driven your ball out, but have struck it to a considerable distance with the precision almost of a don, and you are naturally proud of the exploit. But these precocious shots do more harm than good; hence they require to be looked upon with *caution*, as they, in nine cases out of ten, lead on the novice by insidious steps to press for still greater achievements, and to a subsequently mutilated and discouraging style of play. Play your next stroke as if nothing particular had happened, and you may drive a tolerably good shot, but press to repeat the long swipe, and you bungle it altogether. You have driven your ball into that sand-pit or "bunker," and your caddie hands you the sand-iron. Now, you are not expected to drive it out of the sand on to the clear turf at first, in one stroke, but slope back the face of your iron, and dig well in behind the ball. You have come down on the top of the ball, and buried it instead! Try again, and again, till you accomplish it, nor be discomfited by repeated failures, for they are all steps on the ladder, each of which must be mounted ere you reach the summit—of golf. Your ball is out at last, after twelve or thirteen ineffectual strokes on your part, and lies on the sward, or "putting-green," within a dozen yards from the hole. The boy puts the "putter" into your hand, and before applying it to the ball, it will be well for you to examine the intervening space to the hole. You observe that it slants a little; in that case, a "borrow" is required up the slant, and that borrow you must make. Perhaps the ground is quite level, and in that case it lies purely with your ideas of "strength," whether you overshoot or undershoot the mark. The probability is that you put too much power to the "put," and lie as far on the *other* side. Try again, for it is only by careful judgment that nicety in putting is arrived at. Should you be advised to substitute a putting iron for the *bonâ fide* tool, shun the advice, and stick to the putter, and you will never have cause to repent. There, you have taken a dozen strokes to hole your ball, which a good player would have done in five; but avoid pressing, be *up* in your putting, never take your eye off the ball when about to swipe, and keep cool, and in a very few months you will be able to hole it in five too, with an occasional "steal" in four.

[388.] We borrow the following remarks from the *Golfer's Manual**, and they present a fair sample of much that is interesting and practical contained within its pages:

"The other points of the long game are sufficiently obvious, excepting, perhaps, a choice of tools when the ball is in trying ground; and even then, the various names of the clubs are guide enough to show when they should be used. When he nears the putting-green, however, the real difficulties of the golfer commence, and the game gets complicated in its details. The chief terror of the young player is the quarter-stroke—most difficult but most beautiful of all others. The baffing-spoon is the club specially fitted for this stroke; another, however, is used, and defended in the use, by many players in effecting this stroke. This club is the light iron; and it has certainly many points to recommend it. The baffing-spoon, from its make, and the manner in which it is wielded, is an excessively puzzling club to use properly; and for some time, it is impossible to calculate with anything like certainty where and how far the ball is going. The iron, on the other hand, not striking the earth at all, and swung short off the wrist without stooping, may be depended on as affording great accuracy in the calculation of distance, if the striker does happen to hit the ball cleanly. Here is the trouble; should the iron catch ever so slightly in the turf—a contingency very likely to happen when a quick wrist-turn is required—the ball is sent hopping into the very hazard intended to be cleared.

"Nevertheless, this light iron, although dangerous at the distance of a quarter-stroke, is most useful for negotiating a bunker or other hazard, when the ball is in close proximity to the putting-ground. This stroke is done by taking a short grasp of the iron, laying the head well back, and hitting the ball clean with an upward turn of the wrist. Some players do not lay the iron head back, but allow it to do its own work; this is a pretty mode of handling it, but not so easy, we think, as that above recommended. Little hillocks, and other impediments in putting, may be overcome in the same manner with very little practice. But the most delicate use of the same iron is in playing a *stimy*. This particular stroke occurs on the putting-green, when a player finds his antagonist's ball is so exactly in the line of his put, whether that line, from inequalities of the ground, be curving or straight, as to preclude possibility of playing at the hole in an ordinary manner. As will be seen from the golfing law in that behalf, the ball stimying may be lifted if within six inches of that of the player, until the stroke is done; the idea being, reasonably enough, that when the balls lie so close, it would necessitate sleight of hand, and not legitimate golfing skill, to avoid collision.

"In long putting, the player should make it a point always to be up; even should he overshoot the mark, his ball has a chance of holing, which it could not have were it played short. Some few golfers put almost exclusively with a metal club, an iron or cleek, to wit; and on a links where the short game is over very rough greens, a knowledge of this use of the iron or cleek is very desirable. As a rule, nevertheless, let not the player forsake the honest wooden tool; its heavy head and stiff shaft forbid the fear of a miss, and yet do not preclude the delicate touch, which is the chief feature in the handling of an iron. In short putting, the player must consult principally the policy of the match on hand; if he have the advantage of a stroke or two over his opponent, it were madness to rush his ball at the hole, as a miss would at once destroy the hard-earned superiority of the long game; rather, on the contrary, let him put softly and cautiously, that his ball may lie *dead* for the next stroke. On the other hand, when the golfer is a couple of strokes or more behind, his only chance lies in a bold put—a rapid gobble over level ground—or a scientific curve through a cup or rut when such occasion offers. Should his antagonist's ball lie a little to one side of the line of his put, it becomes what is technically called a 'guide,' and the golfer should take advantage of it by playing his own ball close past it. This insures a straight run to the hole; and should he touch the guide, there is no harm done, as the *kiss* will set his ball on the right course again."

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* Whitehead and Orr, Cupar, Fife. 1857. Price 2*s.* 6*d.* This little work has a frontispiece of the justly famed Allan Robertson, who has so long held the palm of victory at St. Andrews.

[389.] Golf is becoming more popular every day amongst all classes of the Scottish community. Boys and old men enjoy its fascinations with equal zest, and both gain health and strength by the exercise and easy muscular exertion brought into play. If the day be fine, and the match equally balanced, we know of no other out-of-door game whose attractions are equal to this our favourite one. A grand golfing tournament has been organised yearly at St. Andrew's, wherein members of any established club of amateur players in Great Britain are invited to contend. The prize is a handsome piece of plate, and competitors each subscribe a certain sum towards liquidating the expenses. The competition lasts for a few days, and the scene on those occasions is brilliant, and the play, as a matter of course, first-rate.

The manufacture of gutta-percha balls is a distinct trade by itself; that of clubs, another. The price of a ball is 1*s.*, and a club, 3*s.* 6*d.*: irons are rather dearer. The balls we use are made by Dunn of Blackheath, and the clubs by M'Ewan of Musselburgh.

The following are the chief golf-clubs in Scotland: Aberdeen; St. Andrews, Fife; Bruntsfield and Burgess, Edinburgh; Burntisland, Fife; Cupar, Fife; Crail, Fife; Innerleven or Dubbieside, Fife; Leven, Fife; Monifieth, Forfar; Montrose, Forfar; Musselburgh, Mid-Lothian; North-Berwick, East Lothian; Perth; Prestwick, Ayrshire; and Lanark. The game has likewise its votaries in Ireland at the Curragh Camp, in several provinces of India, at the Cape of Good Hope, &c , and British clubs are on the increase yearly.

[390.] We here insert a glossary of technical terms, taken from the *Golfer's Manual.*

Baff—striking the ground along with the ball. *Bone*—a piece of that substance inserted in the club-head to prevent it from splitting. *Bunker*—a sand-hole. *Caddie*—a person who carries the golfer's clubs, and who is generally conversant with the principles of the game. *Dead*—A ball is said to be dead, 1st, when, after being propelled by the club, it falls without rolling; 2d, when it lies so close to a hole that the "put" is a certainty. *Dormy*—as many holes ahead as remain holes to play. *Draw.*—To drive wildly to the left. *Fore!*—contracted for Before—a warning-cry to people in front of the stroke. *Flat.*—A club flies flat when its head is at a very obtuse angle to the shaft. *Gobble*— a rapid straight "put" at the hole. *Grassed*—a term used instead of spooned, to signify the backward slope of a club-face. *Green*—sometimes the links, more generally the putting-ground. *Hanging*—when the ground rises in any way behind the ball. *Hazard*—general term for bunkers, whins, or bad ground. *Heel*—the crook of the head where it joins the shaft. *Leather*—the leather covering the grasp of the club-shaft. *Lie*—the inclination of a club when held to the ground in its natural position, with respect to the player; or, 2d, the situation of a ball. *Match*—1st, a party contesting a game; 2d, the game when won. *Odds*—1st, an additional stroke allowed to a weak opponent; 2d, the stroke played in any match in advance of the opposite party. *Put*—a gentle stroke towards the hole when close to it. *Rind*—the roll of cloth under the leather, used to thicken the grasp. *Score*—the point of junction between head and shaft. *Scruff*—slightly razing the grass in striking. *Shaft*—the stick or handle of the club. *Steal*—An unlikely put holed from a distance, but not by a gobble. *Stimy*—when the opponent's ball lies so directly between yours and the hole as to block up your path, and render it impossible for you to hole by the usual method of putting. (*Note* — Sometimes a stimy is overcome by using the iron, and jerking one ball over the other; this is called lofting over a stimy, and requires great dexterity.) *Swipe*—a full shot or drive. *Tee*—a pat of sand on which the ball is elevated for the first stroke from each hole. *Topping*—hitting the ball above the centre. *Upright*—when a club-head is not placed at a very obtuse angle to the shaft. *Whins*—furze or gorse. *Whipping*—the pitched twine uniting the head and shaft.

[391.] The following are the rules followed by the St. Andrew's Royal and Ancient Golf-club, and are the best extant:

1. *Mode and Order of Playing the Game.*— The game of golf is played by two persons, or by four (two of a side) playing alternately. It may also be played by three or more persons, each playing their own ball. The game commences by each party playing off a ball from a place called the *tee*, near the first hole. In a match of four, those who are opposed to each other, and to play off, shall be named at starting and shall continue so during the match. The person entitled to play off first shall be named by the parties themselves; and although the courtesy of starting is generally granted to old captains of the club, or members, it may be settled by lot or toss of a coin. The hole is won by the party holing at fewest strokes and the reckoning of the game is made by the terms *odds* and *like*, *one more*, *two more*, &c. The party gaining the hole is to lead, unless his adversary has won the match; in which case, the adversary leads off, and is entitled to claim his privilege, and to recall his adversary's stroke should he play out of order. One round of the links, or eighteen holes, is reckoned a match, unless otherwise stipulated.

2. *Place of Teeing.* — The ball must be teed not nearer the hole (either in front or side of the hole) than four club-lengths, and not further from it than six; and after the balls are struck off, the ball furthest from the hole to which the parties are playing must be played first. When two parties meet on the putting-green, the party first there may claim the privilege of holing out; and any party coming up must wait till the other party has played out the hole and on no account to play their balls up, lest they should annoy the parties who are putting. No player may play his teed ball, till the party in front have played their second stroke.

3. *Changing the Balls.* — The balls struck off from the tee must not be changed, touched, or moved before the hole is played out (except in striking, and the cases provided for by Rules 9, 19, and 20); and if the parties are at a loss to know the one ball

from the other, neither shall be lifted till both parties agree.

4. *Lifting of Break-clubs, &c.* — All loose impediments within twelve inches of the ball may be removed on or off the course when the ball lies on grass. (See Rules 6 and 13.) When the ball lies in a bunker or sand, there shall be no impression made, nor sand or other obstacle removed by the club before or in playing. When a ball lies on clothes, or within a club-length of a washing-tub, the clothes may be drawn from under the ball, and the tub may be removed.

5. *Entitled to See the Ball.* — When a ball is completely covered with fog, bent, whins, &c., so much thereof shall be set aside as that the player shall merely have a view of his ball before he plays, whether in a line with the hole or otherwise. A ball stuck fast in wet ground or sand, may be taken out and replaced loosely in the hole it has made.

6. *Clearing the Putting-green.* — All loose impediments of whatever kind may be lifted on the putting-green, or table-land on which the hole is placed, which is considered not to exceed twenty yards from the hole. Nothing can be lifted either on the course or putting-green, if it is to move the ball out of its position.

7. *Rabbit-scrapes, Burrows, Holes, &c.*—If a ball lies in a rabbit-scrape, the player shall not be at liberty to take it out, but must play it (see Rule 14) as from any common hazard; if, however, it lies in a rabbit burrow, or any of the holes, or short holes made for golfing, he may lift it, drop it behind the hazard, and play with an iron without losing a stroke. In all cases where a ball is to be dropped, the party doing so shall front the hole to which he is playing, standing close on the hazard, and drop the ball behind him from his head.

8. *Lifting Balls.*—When, on any part of the course or off it, or in a bunker, the balls lie within six inches of each other, the ball nearest the hole must be lifted till the other is played, and then to be placed as nearly as possible in its original position — the six inches to be measured from the surface of the balls. In a three-ball match, the ball in any degree interposing between the player and the hole on the putting-green must be played out.

9. *Ball in Water, or in the Burn, and Place of Re-teeing.* — If the ball is in water, the player may take it out, change the ball if he pleases, tee it, and play from behind the hazard, losing a stroke. If the ball lies in any position in the burn across the first hole, the player may take it out, change it, tee it on the same side on which it was struck, and lose a stroke; or he may play it where it lies, if he chooses, without a penalty. In taking out and re-teeing, the ball shall be placed immediately behind the spot at which it entered the burn or hazard, and within a club-length of the hazard. However, should a ball be driven into the river Eden at the high hole, or the sea at the first hole, the ball must be placed a club-length in front of either sea or river, losing a stroke.

10. *Rubs of the Green.* — Whatever happens to a ball by accident, such as striking any person, or touched with the foot by a third party, or by the fore-caddie, must be reckoned a rub of the green, and submitted to. If, however, the player's ball strikes his adversary, or his adversary's caddie or clubs, the adversary loses the hole; or if it strikes himself or his partner, or their caddies or clubs, or if he strikes the ball a second time while in playing, the player loses the hole. If the player touch the ball with his foot, or any part of his body, or with anything except his club, or with his club moves the ball in preparing to strike, he loses a stroke; and if one party strikes his adversary's ball with his club, foot, or otherwise, that party loses the hole. But if he plays it inadvertently thinking it his own, and the adversary also plays the wrong ball, it is then too late to claim the penalty, and the hole must be played out with the balls thus changed. If, however, the mistake occurs from wrong information given by one party to the other, the penalty cannot be claimed; and the mistake, if discovered before the other party has played, must be rectified by replacing the ball as nearly as possible where it lay. If the player's ball be played away by mistake, or lifted by a third party, then the player must drop a ball as near the spot as possible, without any penalty. Whatever happens to a ball, on a medal day — such as a player striking his caddie, or himself, or his clubs, or moving the ball with his foot or club, or his caddie doing so, or striking it twice before it stops motion — the player in such cases shall lose one stroke only as the penalty.

11. *Ball Lost.* — If a ball is lost, the player (or his partner, if a double match) returns to the spot where the ball was struck, tees another ball, and loses both the distance and a stroke. If a ball is lost either in whins, bents, long grass, or anywhere, except on the course, where a ball might be stolen or driven away (see Rule 10), the player (or his partner, if a double match) returns to the spot where the ball was struck, tees another ball, and loses the distance and a stroke. If the original ball is found before the party has struck the other ball, the first shall continue the one to be played.

12. *Club-breaking.*—If, in striking, the club breaks, it is nevertheless to be accounted a stroke, if the part of the club remaining in the player's hand either strike the ground or pass the ball.

13. *Holing out the Ball.* — In holing, no mark shall be placed or line drawn to direct the ball to the hole; the ball must be played fairly and honestly for the hole, and not on your adversary's ball, not being in the way to the hole; nor, although lying in the way to the hole, is the player entitled to play with any strength upon it that might injure his position, or greater than is necessary honestly to send your own ball the distance of the hole. Either party may smooth sand lying around the hole; but this must be done lightly and without pressure, or beating down with the feet, club, or otherwise.

14. *Unplayable Balls.* — In *match*-playing, every ball must be played, wherever it lies, or the hole be given up. In *medal*-playing, a ball may, under a penalty of two strokes, be lifted out of a difficulty of any description, and teed behind the hazard. These two rules not to apply when the ball is more than half covered with water; in that case, Rule 9 applies.

15. *Medal Days.* — New holes shall always be made on the day the medals are played for; and no competitor shall play at these holes before he starts for the prize, under the penalty of being disqualified for playing for the medal. On medal days, a party starting off from the tee, must allow the party in front to cross the burn, before they strike off. All balls must be holed out on medal days, and no stimies allowed.

16. *Asking Advice.* — A player must not ask advice about the game, by word, look, or gesture, from any one except his own caddie, his partner's caddie, or his partner.

17. *Disputes.* — Any dispute respecting the play shall be determined by the captain, or senior member present; or, if none of the members are present, it shall be settled by a committee appointed by the parties interested; or by the captain and his annual council for the time, at their first meeting.

18. *Parties Passing each Other.*—Any party having lost a ball, and incurring delay by seeking it, shall be passed by any party coming up; and on all occasions a two-ball match, whether by two or four players, may pass a three-ball match.

19. *Balls Splitting.*—If a ball shall split into two or more pieces, a fresh ball shall be put down in playing for a medal.

20. *Ball on Railway.*—Should a ball lie betwixt the rails, the player shall have the option of playing it, or lifting it and dropping it behind him (see Rule 7), losing a stroke.

21. *Breach of Rules.* — Where no penalty for the infringement of a rule is specially mentioned, the loss of the hole shall be understood to be the penalty.

22. *Repairing the Links.* — The person appointed to take charge of keeping the links shall make new holes every Monday morning, and in such places as to preserve the putting-green in proper order.

392. *Golfing is likewise practised in some parts of England*, as at Blackheath, by the members of a club of long standing, who meet on every Saturday during the season, and whose performances we have ourselves witnessed with much pleasure. At Manchester a similar club is also established; and, if we mistake not, one or two others have been formed of late in some of the provincial towns. This favourite game has had royal admirers and players. Charles the First was much attached to it, and James the Second was so distinguished a *golfer* that, it is said, "none could equal him save one Patterson, a shoemaker of Edinburgh, with whom the king condescended to play, and having fairly beat him, he consoled him by

a munificent donation." The *Thistle Golf Club of Edinburgh*, now dissolved, had their arms, crest, and uniform. The latter comprised a single-breasted scarlet coat, with green collar and plain gilt buttons. White trowsers were worn, and the left breast exhibited a badge bearing the device of the thistle. [By the kind permission of the Messrs. Chambers, this article has been mainly borrowed from a valuable paper on "out-of-doors recreations" inserted in their "Information for the People."]

Subsect. 2. *The Scottish Games, Curling and Shinty.*

393. *Curling may also be considered as a national game of Scotland*; and, though the practice of it is not universally diffused over the kingdom, nor is the game played everywhere exactly after the same manner, it is yet fully established and in considerable repute among the Scots. Mr. Pennant, in his Scottish tour in 1792, thus notices it:— "Of all the sports of these parts, that of curling is a favourite, and one unknown in England; it is an amusement of the winter, and played on the ice, by sliding from one mark to another great stones of thirty to fifty pounds' weight, of an irregular hemispherical form, with an iron or wooden handle at top (*fig.* 81.). The object of the player is to lay his stone as near the mark as possible; to guard that of his partner, which had been well laid before; or to strike off that of his antagonist." It is supposed that the Flemings, who many of them settled in Scotland in the reigns of Henry V. and VI., introduced the game. Curling was also at one time practised in Ireland, but it never thoroughly took root there. It fared better in America, where it was introduced by some Scottish gentlemen; and the mighty St. Lawrence, in its frozen state, now offers its wide-spreading surface as an admirable curling *field*. Curling matches are now pretty frequent in England. In Scotland, the people of one parish often play against those of another parish; sometimes county plays against county; in those cases the match is termed a *bonspiel;* but it has never become a permanent favourite south of the Tweed. To play it, as already observed, blocks of some hard stone, as granite, whinstone, &c., are fashioned into somewhat between a spherical and a hemispherical figure. It is essential that each block should present an upper and an under surface, nearly plane, and as smooth as art can make it. This is done that as little resistance as possible may offer to the ready sliding of the stone on the ice. "When thus prepared," we are told, "a handle is inserted into the upper surface, generally of iron, sometimes of wood, and sometimes of wood screwed into an iron standard fixed in the stone. They are from thirty to fifty pounds' weight avoirdupois, according to the strength of the person who uses them." Each curler is supplied with two or three stones. Curling is played on a *rink*, or course, marked out on the ice, which should be smooth and as free from cracks as possible, particularly such as are longitudinal, which interfere most with the straight forward passage of the stone when thrown. "The place for the rink being chosen, a mark is made at each end, called a *tee*, *toesee*, or *neitter.* It is a small hole made in the ice, round which several circles of different diameters are drawn, that the relative distances of the stones from the tee may be calculated at sight, as actual measurement is not permitted till the playing at each end be finished. These circles, in the technical language of the game, are called the *broughs.* A score is then drawn across the rink at each end, distant from the tee about a sixth part of the length of the rink: this is called the *hogscore;* and those stones which do not pass that line are, as it were, distanced, and thrown aside as useless. It is frequently made waving, to distinguish it from any accidental scratch. The length of the rink varies from thirty to fifty yards, according to the intensity of the frost, and the smoothness of the ice. The breadth is about ten or twelve feet. When the ice is covered with snow, it must be cleared to that extent, and also ten or twelve feet beyond the tee, at each end, that those stones which are impelled with too much force, may have room to get far enough not to be of any use. At first the game is remarkably simple. The *lead* endeavours to lay his stone as near the tee as possible. If it be a little short of it, upon the middle of the rink, it is reckoned to be fully better laid than if it touched it. The object of the next in order is nearly the same as that of the lead, when he attempts to strike away the stone of his antagonist; if he miss his aim, his stone will pass by, and be completely useless. But if he place his stone near the tee, without minding that of his antagonist, it has a chance of remaining there, and gaining a shot to his party. The object of the next in order is to guard the stone of his partner, or to strike off that of his antagonist. The one who follows, if a stone belonging to his own party be nearest the tee, attempts to guard it; if one of the opposite party, to strike it off, or to make the stone rest as near the tee as possible, if no stone be near the tee. When the stones on both sides have been all played, the one nearest the tee counts one; and if the second, third, fourth, &c., belong to the same side, all these count so many *shots;* thirty-one of which, for each side, is the number usually played for." Our sketch is necessarily imperfect, as

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CURLING.

our limits are confined; but for more detailed and correct instructions relative to the game, we would refer to the paper on Curling, in Chambers's *Information for the People*, where the game is very fully and clearly described, and to which source we also acknowledge our obligation on this subject.

394. *The game of shinty* is also played among the Highlanders of Scotland, in the winter months, and is probably the same game as that alluded to by Strutt, practised in England under the name of hurling. As it is played in Scotland, a small hard ball is used, either of wood or of leather, very much stuffed. A ball-stick is used, not much unlike that used in the game of golf, but rather more clumsy. A boundary is marked out, and the two opposing parties are engaged in endeavouring each to strike the ball beyond the boundary of the opposing party. As all manœuvres are fair in love and war, so it is said that, in one instance, a player having gained possession of the ball, contrived to run a mile with it in his hand, pursued by both his own and the adverse party, until he reached the appointed limit, when his victory was admitted.

Sect. III. *The Field Sportings of Ireland.*

395. *The first sons of Erin* pursued wild animals much after the methods of the early Britons; for there is reason to believe that both islands were peopled at periods not remote from each other, and probably from similar sources. Brave, active, and hardy, but rude, it was long ere much method was observed in any of their pursuits; and we may surmise that, consistently with that recklessness of danger which still marks them, it was not unusual for an individual, armed with his bow or spear, and accompanied by his dog only, to sally forth in quest of the bear, which he traced to his den; or, at other times, to track the footsteps of the wolf to his fastness. In process of time, native ingenuity, the arts of the sister island, and the examples of foreign intruders, introduced improvements; and the rude practices of early times gave place to method and system in the practice of the chase, and to social compact in the pursuit of it. The stag has bounded along the margins of their beautiful lakes, whose waters have re-echoed the choruses of hounds as good as ever drew on the slot, and have reflected the fleeting images of as ardent horsemen and horses as ever graced the page of sporting tale, or made the welkin ring.

Subsect. 1. *A Stag Hunt in Ireland.*

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A STAG HUNT IN IRELAND.

396. *The popularity of the chase of the wild stag in Ireland* was shown by a stag hunt being got up, on particular occasions, to honour the presence of distinguished individuals. Mr. Plunket was thus greeted on a visit to the celebrated lake of Killarney (*fig.* 82.), where a stag of noble dimensions being watched to his lair in the woods bordering the lake, was carefully prevented from straying by a party of men purposely placed around, that no disappointment might happen to the pleasure intended for their distinguished visitor. The arrival of Mr. Plunket was the signal for unharbouring the stag, who showed admirable sport by leading the pack a long and severe chase over the neighbouring country; when at length, being closely pressed, he took the water of the upper lake, known as the Bay of Derucunnihy, where he would have been killed, had it not been for Mr. O'Sullivan of Tomies, who, dashing into the water, succeeded in bringing him safe to land, where, although much exhausted, his struggles might have proved dangerous to those around him had he not been hoodwinked by Mr. Sullivan. The sport he had shown, and the intercession of Mr. Plunket, saved his life; and on it being determined to give him his liberty, he was first taken in a boat, and rowed to the Eagle's Nest, where being pushed out of the boat, after a look expressive of great apprehension, he made his way to the main land, which having reached, he stopped for a moment, and looked to

see if he were pursued; fresh vigour and hope returned to him, and he made to the mountains in full speed, pursued only by the shouts of a thousand voices. Thus terminated a scene which Shakspeare might have described, but which can be but feebly painted by a rude and ordinary hand.

397. *A few wild deer are still found in the western parts of Ireland*, but herds of them are very rare. In the French descent in 1798, fire arms were distributed among the peasantry; and these being many of them retained, were used against the deer; which is to be lamented, it being very desirable that this remnant of sporting *indigenæ* of former times should be spared. Unfortunately it is with great difficulty that they are perpetuated in a domestic state; though we conceive there are sufficient proofs that it may be done; but it is by a long and steady cultivation only that it can succeed. In the attempts to rear them from a wild state, cattle might be previously fitted, by a residence on similar situations with those occupied by the stag, to give such milk as might assimilate more with that of the red doe. We, however, believe that it has been unsuccessfully tried to feed cows on the heathy pasturage, and to mix, with the hay given, the lichen on which the deer feed, which was a prudent measure; but in our opinion it did not reach its desired end, from a want of sufficient patience in the trials, and sufficient varyings of the experiments. It is true that the cow and the fawn are both ruminants, but there are considerable structural differences between their assimulating organs, and we conceive those of the sheep, but still more probably those of the goat, which might as easily be procured, would yield a nutriment more resembling that of the deer than the cow. It is while they are very young that the principal danger is experienced; if that period be past, the animal very often lives and thrives in the parks and grounds; but even then it seldom, if ever, propagates like the domestic stag. A long series of attempts might, however, so alter the constitution, as to make it apt for re-production; and a pair thus produced would, it is even more than probable, prove permanently prolific. (See some sensible remarks on the subject in the *Wild Sports of the West*, vol. i. p. 145.)

Subsect. 2. *The Field Sportings of Ireland generally.*

398. *As we proceed with the consideration of British field sports generally*, those of Scotland and Ireland, which are pursued in common with those of England, will necessarily occupy our attention. Here we particularly confine ourselves to such sportings as present any specialty, either from locality or custom. We may commence by observing, generally, on the sportsmen of Ireland, that they are peculiarly marked by a love of enterprise and by a reckless contempt of danger. Ever on the alert in the pursuit of stirring scenes, it is ten to one that the intended quiet morning ride ends in a race, or at least in concocting measures to get up one. If any sporting enterprise fail in the ordinary course of conducting it, an extraordinary one is promptly brought in aid, that the excitement sought for may not be wholly lost. This ardour however prevents the conventional methods of sporting being so strictly adhered to as they are with us, but then the gallant sons of Erin never experience a blank day. If reynard is not at home, a jumping match or steeple chase is resorted to: these active spirits are never at a loss; and their natural love of excitement is ever on the stretch to find fresh subjects for its gratification.

399. *As a sporting country, Ireland offers almost unbounded advantages*, even at the present day; and what may be truly called *wild sports*, so dear to the real lover of nature when undisguised, may yet be pursued here, and after a manner known to few of us, localised as we are, where population extends into every nook, and where active industry may be almost said to have domesticated, not only the animals themselves, but every portion almost of the soil they tread on. It is true that the game pursued in Ireland is essentially the same as in England, but the pursuers widely differ. The face of their country, bold and rugged as many parts of it are, may have some influence in this respect; certain it is that it cherishes a race equally erratic and enterprising. The following, from the spirited descriptions of the writer of the *Wild Sports of the West*, may serve to bring before the reader's eyes an illustration of our assertions: — "The passage down the inlet was marked with several incidents which were in perfect keeping with the wild and savage scenery around. A seal would suddenly raise his round head above the surface, gaze for a moment at the boat, and when he had apparently satisfied his curiosity, sink quietly from our view. In rounding the numerous headlands through which this inlet irregularly winds, we often started flocks of curlews, which, rising in alarm at our unexpected appearance, made the rocks ring with their loud and piercing whistle. Skirting the shores of Innis Biggle, we disturbed an osprey or sea-eagle, in the act of feeding on a bird. He rose leisurely, and lighting on a rock, waited till we passed, and then returned to his prey. We ran sufficiently close to the shore to observe the size and colour of the bird, and concluded that a grouse had been the eagle's victim." (Vol. i. p. 42.)

400. *The contrast between a real and a mock sportsman is next emphatically portrayed:* — "At this moment of indecision, old Antony, the otter killer, one of that numerous and nondescript personages who *locate* themselves in the houses of the Irish gentry, passed the window with a fine salmon and a brace of trout, sixteen inches long. How fresh and sparkling is the phosphoric shading of the scales, as the old man turns them round for my inspection! What a beautiful fish! it barely measures thirty inches, and is fully ten pounds weight! That short and deep-shouldered *briddawn salmon* is worth all the lubberly roach, dace, perch, and gudgeons, that the Thames contains from its source to its debouchement. I looked after the ancient otter hunter with envy. How lowly would he be estimated in the eyes of a Cheapside fisherman; one who wears a modest-coloured jacket, lest a showy garment might annoy the plethoric animals he is dabbling for; whose white basket is con-

structed of the finest wicker-work — with rods and reels, floats and flies, pastes and patties, lines and liqueurs, sufficient to load a donkey — how contemptuously would he look down upon honest Antony! Figure to yourself a little feeble man, dressed in a jerkin of coarse blue cloth, with an otter (a fancy of my cousin's) blazoned on his arm. In one hand he holds a fish-spear, which assists him when he meets with rugged ground; in the other a very unpretending angle, jointed rudely with a penknife, and secured by waxen threads: a *cast* of flies are wound about his hat, and his remaining stock, not exceeding half a dozen, are contained between the leaves of a tattered song book. In the same depository he has some silk, dyed mohair, a hare's ear, and a few feathers from the cock, brown turkey, and mallard; which simple materials furnish him with most efficient flies." (*Loc. cit.* p. 49.)

401. *The scenery of Ireland*, it is well known, is much of it bold in the extreme. Kerry abounds with the grand and the picturesque. Witness the lofty precipices of the Eagle's Crag (*fig.* 83.), which burst as it were suddenly on the view. Here, it is not uncommon to see the osprey darting from the rocky summit in search of food for its young, which are secreted in some unapproachable fissure. After several aerial gyrations, it is seen to dart downwards, and plunge into the water, emerging from it immediately with a fish in its talons, with which it rises to the rocky height it so lately left, and presents to its young the fruits of its plunder. As the waters reach the sea, the coast scenery still maintains its grandeur; and on the shores the natives shoot the wildfowl, or ensnare fish from the rocks. "Seals also," says the descriptive writer we have lately copied from, "are very numerous on the coast; and at this season a number may be seen any warm day you make an excursion up the Sound of Archil. We shoot them occasionally, the skin making a waterproof covering, and the fat affording an excellent oil for many domestic purposes. It is difficult, however, to secure the animal, for numbers are shot but few are taken. The head is the only place to strike them; for, even when mortally wounded in the body, they generally manage to escape. This fact we have ascertained from finding them dead on the shore many days after they were wounded, and a considerable distance from the place where they had received the bullet. I shot one last autumn at the mouth of the river, and a fortnight afterwards he was taken up in the neighbourhood of Dhuhill. There could be no doubt as to the identity of the creature, for, on opening him to extract the oil, a rifle-ball such as I use, of the unusually small size of fifty-four to the pound, was found lodged in his lungs. Unless when killed outright, they sink instantly; and I have seen the sea dyed with blood to an extent that proved how severely the seal had been wounded, but have never been able to trace him farther. Formerly, when seal oil and skins were valuable, some persons on the coast made the pursuit of the animal a profession." (*Ibid.* vol. i. p. 96.)

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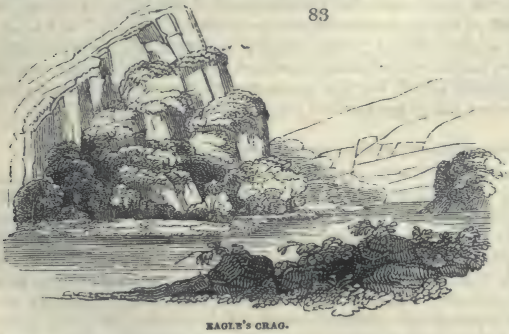

EAGLE'S CRAG.

402. *The fishings of Ireland*, both in the seas and rivers, have long occupied the attention of the natives, as a necessary as well as a recreative pursuit. The seal was speared, and the mackerel and cod varieties were netted many centuries ago. The fresh and salted herring were used as luxuries long before the valuable potato was added to the savoury meal. A remnant of the rude piscatory methods of former times is seen in the sea-bream anglings from the rocks, which here and there rise out of the sea, and fringe the shore. Seated on these points, these fish, called *gunner* by the common people, are successfully angled for with very coarse tackle. A sudden swell, however, frequently washes off the fishers into the great abyss. From these points, also, others employ themselves in gaffing the large mackerel as they float on the surface.

403. "*Independently of salmon and trout fishing*," continues the same authority, "to those who will employ nselves in killing pike and perch, the lakes and rivers here offer superior amusement. In the greater ers, Lough Mask, Lough Carra, and Lough Conn, the coarser species of fish are taken in immense numbers; in the lesser lakes, many interesting varieties of the trout tribe will be found, from the little speckled samlet to the large and curious gillaroo. It is true that the scientific angler generally confines himself to the use of the fly; and for the salmon and trout he will forego the common department of bait and float-fishing. Hence, angling for pike and perch is usually an amusement of the peasantry; and to those contiguous to the banks of the large lakes it yields occupation for idle hours, which might be less innocently dissipated, and occasionally supplies their families a welcome addition to their unvarying food, the potato. Besides the established system of bait-fishing, other and more successful methods are resorted to by the lake fishers. By mesh-nets immense numbers of pike are annually taken; and with night-lines, and a very simple contrivance, called the *pooka*, these fish, with the largest trout and perch, are constantly killed. This latter implement is formed of a piece of flat board, having a little mast and sail erected on it. Its use is to carry out the extremity of a long line of onsiderable stoutness, to which, at regular distances, an infinity of droppers or links are suspended, each rmed with a hook and bait. Corks are affixed to the principal line, or back, to keep it buoyant on the surface; nd, from a weather-shore, if there be a tolerable breeze, any quantity of hooks and baits can be floated easily cross the water. The corks indicate to the fisherman when a fish is on the dropper; and, in a small punt or *curragh*, he attends to remove the spoil and renew the baits when necessary. Two hundred hooks may be sed on the same line, and the *pooka* at times affords much amusement, and often a well filled pannier." (*Ibid.*

vol. i. p. 109.) We cannot conclude our account of Irish sportings, without earnestly recommending to the reader, who delights in vivid descriptive notices, to refer to the work quoted. The *Wild Sports of the West* has been called a novel, and it may be one; but the scenes must have been witnessed to have been painted so true to nature. Having ourselves seen something of this country — its scenery, the hospitality of its inhabitants, and their attachment to sporting pursuits — we are enabled to state this on conviction.

Chapter III.

The Progress of British Field Sports from the Norman Conquest to the time of James I.

404. *We are of opinion that,* if only one-tenth of the mighty alterations in all sporting practices, which have taken place since the Conquest, had been heretofore predicted, the narrator would have incurred the risk of martyrdom, as either an impostor or a wizard. Among the remarkable changes, we may note the employment of the horse in the active pursuit of the fleet game, and that of fire arms to arrest the progress of both bird and beast. Instead of a pell-mell hunting *at force* with a mixed multitude, armed with every missile, from the bow to the hand *boulder*, hurled with fearful force and admirable precision, we of the present day do not offer unmanly odds; but the pursuer and the pursued are, on the contrary, nearly on a par, and hence the game as often escapes as it is taken.

Sect. I. *The tyrannical Oppressions of the Normans in their Pursuit of Field Sports.*

405. *An overwhelming attachment to the chase* marked the whole conduct of the Normans when they had settled themselves in Britain. Indeed, the passion for the sports of the field, which the kings, princes, and nobles of this blood indulged, led them into the most cruel and glaring acts of injustice. The seizing on large tracts of land, for the purposes of making preserves for game, was no less common than arbitrary; among the most notorious of which the New Forest in Hampshire is a prominent instance. To form this extensive waste, it is said, twenty-two parish churches, many chapels, and several villages were razed to the ground, and many large manors annihilated; forming a scene of devastation of thirty miles in circumference. In process of time sixty-eight other forests were formed on this model, but without an equal degree of injury to the inhabitants and proprietors. A few only of these now remain as preserves for royal sporting, the rest having become subservient to the rearing of timber, the nurturing of cattle, or the growth of corn. If we are found in our days occasionally to dwell on the extravagance of our kings, and the usurpations of our nobles, what must we think when we collect from the Doomsday Book, that Waleran, the king's chief huntsman, was in the possession of fifteen manors in Wiltshire, eight in Dorsetshire, and several in Hampshire; and that his name is to be met with as tenant *in capite* in other counties also. From the same source, we learn that Croc, Godwin, Willielmus, &c., who were likewise huntsmen of these times, enjoyed extensive possessions. Mr. Daniel observes, "The ardour of the great Norman lords for this exercise kept pace with that of their monarchs; the hunting establishments of the Norman nobility were incredibly great; many of them kept sixteen hundred dogs for the chase, and a proportionate number of horses. The horses of England were always valuable. A baron, named Amphitill Till, agreed to pay to the exorbitant John for his ransom, ten horses, each worth thirty merks, nearly equivalent to three hundred pounds of modern money. These nobles also exerted the same tyrannic severity towards the unfortunate violaters of the game on their own estates, which the king practised against the trespassers on his demesnes."

406. *The annals of the chase* were never so overhung with dark shadings as in these reigns of tyranny and spoliation. "Forest laws," says that worthy divine, Gilpin, "was one of the greatest encroachments that ever was made upon the natural rights of mankind; and, considering the disparity of the object, one of the greatest insults of tyranny. It was conceived in the highest spirit of despotism, and executed with the utmost rigour of vindictive tyranny. It is really revolting, especially in the present enlightened age, to read the pains and penalties of the laws of the forest. 'If any gentleman shall drive a wild beast of the forest, either by accident or design, so that the animal be wind-blown, he shall forfeit ten shillings to the king; if he be a countryman, he shall be fined double that sum; if he be a slave, he shall be severely striped. But if any gentleman shall wind-blow the royal beast called the stag, he shall lose his liberty for a twelvemonth; a countryman, for the same crime, shall be confined two years; and a slave shall be outlawed. If the stag be killed, the gentleman shall lose his shield of freedom; the countryman his liberty; and the slave his life. Bishops, abbots, and barons, shall not be sued on account of venison, if they refrain from destroying royal beasts. If a mad dog shall bite a wild beast, then its owner must pay a sum of money equal to the weregild of a gentleman, which is two thousand shillings. If it be a royal beast so bitten, the owner shall be liable to capital punishment.' It is no less degrading to the character of the rulers in these days that the murder of a man might be commuted for a small penalty, whereas the destruction of a stag was inevitably fatal to the offender."

407. *Audi alteram partem* is a most excellent check in all cases of extreme severity of censure, which we may be led into; and however, on the subject before us, such may be maintained by annalists generally, between the eleventh and seventeenth centuries, yet justice compels us to state, that there are dissentients, at least, to the full measure of the cruelty and rapacity of the Conqueror. Voltaire (whether from his determination to be singular, or that his acuteness taught him to doubt the accounts given by the monks, who were highly incensed against the monarch, in consequence of his punishing them for their undue assumption and monstrous exactions) long ago expressed himself very in-

credulous respecting the character of William, left us by these monkish chroniclers. A few later writers have also noticed the subject; two of whom may be considered as particularly relevant to it. Prebendary Gilpin, we have shown, has loudly exclaimed against the conduct of "William the Cruel;" while Mr. Warner, a writer of no mean note also, attempts to palliate the alleged enormities, and doubts the veracity of many of the statements made against that monarch.

408. *Henry the First introduced many improvements in his reign*, although he relaxed little from the severity of the enactments for the preservation of game which had disgraced his Norman predecessors. As a redeeming quality in him, and as a certain indication of the increasing intelligence of the times, we must not omit to state, that it was under his auspices that natural history began to excite attention, and foreign animals to be imported. The first menagerie in Great Britain was established by this sovereign; wherein were lions, leopards, and "other strange beasts," which were first kept at Woodstock, but were afterwards transferred to the Tower; and the sheriffs of London, Bedford, and Buckingham, of this and of several succeeding reigns, had orders to maintain these animals and their keepers. We are likewise told that, in the reign of the second Henry, a white bear being given to him, the maintenance of that also fell to the lot of the sheriffs of London; who were commanded to pay fourpence a day for its support, and to provide "a muzzle and chain for his safe custody, as well as a long and stout cord to hold him when washing and fishing in the Thames." Historians have called this a Norway bear, which has led some to wonder at his predilection for fishing; but, as he was without doubt the great polar bear, as his colour assures us, all surprise ends. We cannot, however, but be amused with the different state of the Thames at that time from the present. If the poor bear caught no more salmon (which an author assumes was his game) for his subsistence then than he could do now, he would soon have become tired of fishing. In 1255 the sheriffs were further called upon to build a house, forty feet long by twenty feet wide, for the reception of an elephant (the first seen in Britain) presented to the king (Henry III.) by Louis, king of France.

409. *Hawking, after the Norman conquest, became a most favourite sport.* Few persons of rank appeared abroad without a hawk on the hand (*fig.* 84.). Our Saxon ancestors had been sufficiently fond of the sport, but during the Norman ascendency, it became even more the prevailing taste. The Saxons spent nearly the whole of October and part of December in hawking; but the Normans flew their hawks at all seasons, except when these birds were mewing. They, however, allowed none but persons of the highest ranks even to keep hawks, which appears to have been especially designed to mortify the rich Saxon landholders, who were thought not worthy to rank with the haughty Normans. As, however, more liberal sentiments prevailed, these distinctions vanished; and, in the days of King John, every freeman was allowed to have eyries or hawks, and to fly them at whatever game he chose, provided he did not trespass on restricted ground. These restraints on this favourite pastime being removed, falconry appears to have been pursued with even increased ardour, and it continued for a long period to engage the attention both of the Normans and Saxons.

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FISTED HAWK.

410. *Stag hunting in the middle ages.* — The manuscript directions made for the use of Prince Henry are as follows: — "When the king shall think proper to hunt the hart in the parks or forests, either with bows or greyhounds, the master of the game and the park-keeper, or the forester, being made acquainted with his pleasure, shall see that every thing be provided necessary for the purpose. It was the duty of the sheriff of the county, wherein the hunting was to be performed, to furnish fit stabling for the king's horses and carts to take away the dead game. The hunters and officers under the forester, with their assistants, were commanded to erect a sufficient number of temporary buildings for the reception of the royal family and their train; and, if I understand my author clearly, these buildings are directed to be covered with green boughs, to answer the double purpose of shading the company and the hounds from the heat of the sun, and to protect them from any inconvenience in case of foul weather. Early in the morning, upon the day appointed for the sport, the master of the game, with the officers deputed by him, ought to see that the greyhounds were properly placed, and the person nominated to blow the horn, whose office was to watch what kind of game was turned out, and by the manner of winding his horn, signify the same to the company, that they might be prepared for its reception upon its quitting cover. Proper persons were then to be appointed, at different parts of the enclosure, to keep the populace at due distance. The yeomen of the king's bow, and the grooms of his tutored greyhounds, had in charge to secure the king's standing, and prevent any noise being made to disturb the game before the arrival of his majesty. When the royal family and the nobility were conducted to the places appointed for their reception, the master of the game, or his lieutenant, sounded three long mootes (or blasts with the horn) for the uncoupling of the harthounds. The game was then driven from the cover, and turned by the huntsmen and the hounds so as to pass by the stands belonging to the king and queen, and such of the nobility as were permitted to have a share in the pastime; who might shoot at them with their bows, or pursue them with the greyhounds, at their pleasure. We are then informed that the game which the king, the queen, or the princes or princesses, slew with their own bows, or particularly commanded to be let run, was not liable to any claim by the huntsmen or their attendants; but of all the rest that was killed they had certain parts assigned to them by the master of the game, according to the ancient custom."

411. *Henry the Second was a most determined follower of the chase.* Hunting and hawking were his delights: he also encouraged an improved breed of horses; but his reign was marked with a less rigorous exaction of penalties inflicted for poaching. About this time, however, the overwhelming love of the sports of the field, which had existed in the bosoms of the youths of distinction, gave place to a chivalrous turn, which, how extravagant so ever it proved in its pretensions, was not without its benefits, by its influence in keeping up a martial spirit, blended at the same time with the softer and more amiable traits of benevolence, adherence to truth and justice, and an honourable attachment to the fair sex. It nevertheless remained essential to the character of an accomplished knight, that he should be skilled in hawking, and well versed in all the mysteries of the chase as then practised. To excite them to this, that fictitious hero, Sir Tristram, was held up to the youth of those times as a model to copy from. In the *Romance of the Death of Arthur*, quoted by Strutt, it is related of this fabled personage, "That he learned to be an harper, passing all other; that there was none such called in any country: and so in harping and on instruments of musike he applied himself in his youth for to learne, and after as he growed in might and strength he laboured ever in hunting and hawking, so that we read of no gentleman who more, or so much, used himself therein; and he began good measures of blowing blasts of venery (hunting) and chase, and of all manner of vermains; and all these terms have we yet of hunting and hawking; and therefore the book of venery, and of hawking and hunting, is called the *Boke of Sir Tristram*."

412. *The crusades*, or war waged against the Asiatics by the leading powers of Europe, having already become what may be deemed a state principle in Christendom, it might naturally be expected that the attention of both the wealthy and their retainers in Britain, as well as in all other parts of Europe, would be diverted in a great measure from field sports to martial enterprises; the display of courage and feats of arms by nation against nation, and by man against man, rather than against the brute creation. Coincidently with the pomp of tilts and tournaments, the arts of the *ménage* received a rapid extension, and to this era we may refer a material improvement in the horses of Western Europe, consequent on the introduction of fresh breeds from the East. Every Sunday in Lent, and on many of the festivals, the sons of the citizens of London were wont, as Fitzstephen informs us, to issue through the gates by troops, each individual being furnished with a lance and shield. It appears that they were trained to these exercises by their skirmishing, and going through the whole exercises of the battle-field, and it suited well with the military taste which characterised that age. It is said that these exercises were much countenanced by the nobility, who attended on them; and the personal suite of the king was also expected to be present, whenever the court happened to be in the capital. The sons of the barons, particularly those who had not yet attained the warlike girdle, were also directed to be present, and participate in these sports, which tended to foster a martial character in them. During these scenes all was animation and emulation, while the neighing, prancing, and curvetting, of their fiery war-steeds, in their rich and gorgeous trappings, added grandeur to the scene. Then began the races, when the youths divided themselves into troops, each striving who should outstrip his fellows; and, in this attempt, all sorts of dexterity were admissible, such as unhorsing, and using other annoying expedients.

413. *Richard the First*, called Cœur de Lion from his martial character, though not himself a first rate sportsman, was very favourable to every thing that appertained to the chase. He also greatly improved the breeding of horses, by encouraging a judicious selection of stallions and mares. The twelfth century, however it may be considered as marked with much improvement in the manners and attainments of the people, exhibits to our eyes of the present day much that is grotesque. In an account of London, written in the reign of Richard the First, we have a description of the impenetrable forests (the present Marylebone) to the north of London, and of "a pleasant place called Smythefields, without one of the citie gates, and even in the very suburbs. Here there is a celebrated rendezvous of fine horses to be sold. Thither come earls, barons, knights, and a swarm of citizens. 'Tis a pleasing sight to behold the ambling nags so smoothly moving, by raising and putting down alternately the two side feet together." From this it is evident, that our ancestors broke in their horses to that unnatural pacing now witnessed only in some parts of America. We also find that, in former times, great complaints were made that the dealers in Smithfield, among other tricks, contrived to make the horses swallow live eels or snakes, their action in the belly of the horses making them appear lively and frisky. The horse-races in Smithfield are then described (1174). But "on Shrove Tuesday, the boys of all the schools (of London) bring to their masters each one his fighting-cock, and they are indulged all the morning with seeing their cocks fight in the school-room. After this, all the boys go into Smithfield or Moorfield in the suburbs, and address themselves to the famous game of football. The scholars of each school have their peculiar ball, and the particular trades have most of them theirs. The elders of the city, and the fathers, and the rich and the wealthy, do come on horseback to see the exercise of the youth. Every Sunday in Lent, a nobler train of young men take the field after dinner, well mounted. The lay sons of the citizens rush out of the gates in shoals, armed with lances and shields; the younger sort with javelins pointed, but disarmed of their steel; they ape the feats of war, and act the sham fight. In the winter holidays, the youth are entertained with boars fighting to the last gasp, and likewise with hogs, full tusked; or game bulls, and bears of large bulk, are baited with dogs. Many of the citizens take great delight in fowling with merlins, hawks, and such like, and likewise in hunting; and they have a right and privilege of hunting in Middlesex, Hertfordshire, and all the Chiltern country, and in Kent, as far as the river Cray."

414. *In the reign of King John* field sports continued to hold a great share in the pursuits of the higher classes of persons. Coursing must have been then in particular vogue, as we may judge from the circumstance that his majesty frequently received greyhounds, in lieu of money, for the renewal of grants, fines, and forfeitures to the crown: one of such fines paid, A. D. 1203, is stated as being five hundred merks, ten horses, and *ten leashes of greyhounds;* another, in 1210, was one swift running horse and *six greyhounds*. King John however disgusted his barons by endeavouring to restrain them from a due participation in field sports, and the people at large were also oppressed beyond measure by his levelling all the enclosures near his forests, that his game might extend their wanderings and browsings into the cultivated fields and meadows. The consequence was, that common cause being made against him by both barons and people, he was forced into a renewal of the ancient Saxon privileges by a charter, thence called Magna Charta; which inalienably fixed the just liberties of the people on all points of government, as the celebrated *charta de forestâ* limited the forest regulations, and the preservation of game within bounds not oppressive to the owners of land, nor prohibitory to such as had a just right to pursue the chase.

415. *The thirteenth and fourteenth centuries* were therefore marked with a somewhat less oppressive administration of the forest laws: nevertheless, some of the succeeding monarchs,

and particularly Edward the Third, required baronial checks to keep down this sporting mania, which was yet very great. It was this prince who selected the Isle of Dogs to be a depôt for his greyhounds and spaniels, as lying contiguous to his sports of woodcock shooting, and of coursing red deer in Waltham, and his other royal chases in Essex; and for the more convenient enjoyment of these pursuits, Edward himself resided, in the hunting season, at Greenwich. All field sports, but particularly hunting, in this century became more universally pursued than heretofore, from a more mild administration of the game laws. Not only were large fields of horsemen to be seen on these occasions, but even the females were emulous to vie with each other as equestrians; and further, they made hunting parties for their own peculiar amusement, in which they are figured as riding astride, and altogether without the assistance of the other sex. Some modern authors have inveighed against this as a monstrous breach of decorum; others excuse them by citing the opinion, that the present female seat on horseback was not in common use until the days of Elizabeth; but which is said to be erroneous, and that Ann of Bohemia, consort of Richard the Second, was the first who rode in the modern manner. We confess we cannot, according to the customs then prevalent, attach any stigma to the ladies of Bury on this account; but, on the contrary, we would attribute their conduct to a punctilious attention to decorum. For we are to take into consideration that, in those days, hunting, hawking, and sporting exercises of all kinds, were ardently pursued almost equally by one sex as the other. The citizens of London, *one and all*, by royal charter were allowed to have their chases in the Chiltre in Middlesex and Surrey. It however happened then, as now, that the wicked wits would be hard on *city sportsmen*, the *common hunt*, and *my Lord Mayor's hounds*. In D'Urfey's collection we find the following: —

" Next once a year into Essex a hunting they go;
To see 'em pass along, O 'tis a most pretty show:
Through Cheapside and Fenchurch-street, and so to Aldgate pump,
Each man with 's spurs in 's horse's sides, and his back-sword cross his rump.

My lord he takes a staff in hand to beat the bushes o'er;
I must confess it was a work he ne'er had done before.
A creature bounceth from a bush, which made them all to laugh;
My lord he cried ' A hare! a hare!' but it proved an Essex calf.

And when they had done their sport, they came to London where they dwell,
Their faces all so torn and scratch'd, their wives scarce knew them well;
For 'twas a very great mercy, so many 'scap'd alive,
For of twenty saddles carried out, they brought again but five."

Subsect. 1. *The Beast Baitings of the Middle Ages.*

416. *A savage barbarity towards animals* marked the character of the inhabitants of our country in the middle ages. Even those whose rank qualified them for nobler pursuits than tormenting the brute creation, and those whose tastes might have been supposed to point at more refined amusements than encouraging animals to worry each other, were alike guilty, and equally enthusiastic in viewing these degrading spectacles.

417. *Fitzstephen tells us that*, in the forenoon of every holiday during the winter season, the young Londoners were amused with boars opposed to each other in battle, or with bulls and full-grown bears baited by dogs. Stow, who records this fact however, makes no mention of horse baitings; and for the honour of our ancestors we would hope that so brutal a sport was very seldom witnessed; but that it was occasionally practised there is sufficient evidence. Strutt presents us with an illustration of horse baiting, copied from a royal MS. of the fourteenth century (*fig.* 85.), which is strongly confirmatory of the existence of this practice. In Malcolm's *Anecdotes of London* we are told, that so late as 1682 horse baiting was witnessed, and under circumstances of singular barbarity: — " Notice was given in the public papers that, on the 12th of April, a horse of uncommon strength, and between eighteen and nineteen hands high, would be baited to death at his majesty's bear garden at the Hope, on the Bankside, for the amusement of the Morocco ambassador and any nobility who knew the horse, or would pay the price of admission. It seems that this animal originally belonged to the Earl of Rochester, and, being of a ferocious disposition, had killed several other horses, for which misdeeds he was sold to the Earl of Dorchester, and in his service committed several similar offences; he was then transferred to the worse than savages who kept the bear garden. On the day appointed, several dogs were set on the ferocious steed, which he destroyed or drove from the area. At this instant his owners determined to preserve him for a future day's sport, and directed a person to lead him away; but, before the horse had reached London Bridge, the spectators demanded the fulfilment of the promise of baiting him to death, and began to destroy the building. To conclude, the poor beast was brought back, and other dogs set upon him without effect, when he was stabbed to death with a sword."

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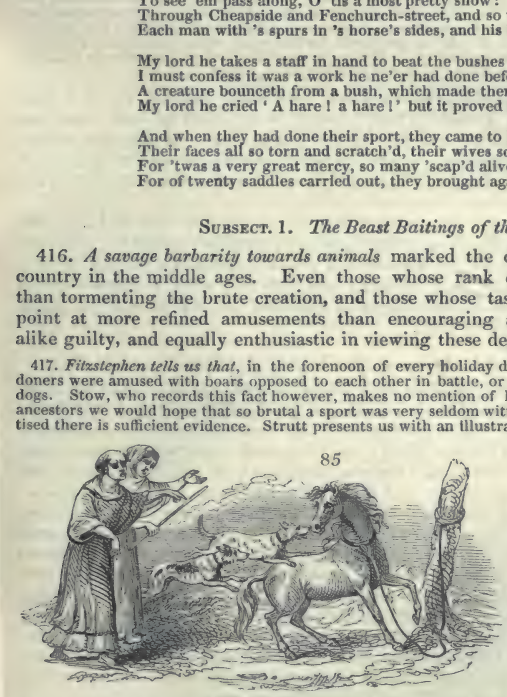

HORSE BAITING.

418. *Ass baiting*, although more common, does not appear to have become very popular; not, probably, from any lack of inclination to torment, but because the poor ass yielded but

little sport in the baiting, and therefore was seldom brought forward as the object of this ruthless diversion. There were several places in the vicinity of the metropolis set apart for the baiting of beasts; and especially the district of St. Saviour's parish, in Southwark, called Paris Garden, contained two bear gardens, which are said to have been the first that were made near London. In these, according to Stow, were scaffolds for the spectators to stand upon; an indulgence for which they paid in the following manner: — "Those who go to Paris Garden, the Belle Savage, or theatre, to behold bear baiting, interludes, or fence-play, must not account of any pleasant spectacle unless they first pay one penny at the gate, another at the entrie of the scaffold, and a third for quiet standing."

419. *A species of rabbit hunting*, not now practised among us, was also then common. A number of rabbits were turned loose amidst an assembled crowd, and the sport consisted in the chase and scramble to catch the rabbits and tumble over one another.

420. *Duck hunting*, as it is called, was also much practised in the middle ages by the lower classes; but this cruel sport is happily now on the wane, though not entirely extinct. This had the merit, if such it can be called, of being a refinement in the art of tormenting two animals at the same time, as is evident by a description of it. A duck was set afloat with an owl tied on its back, who, to rid itself of this troublesome burthen would dive, and thus at each immersion terrify and half-drown the owl, whose hootings and struggles renewed the divings of the duck, to the misery of both animals, and the brutal sport of the spectators.

421. *Cock throwing* was also among the number of brutal and cruel sports common to these times; but to our credit it is now discontinued. Within our own recollection, however, it has been practised; and we well remember seeing poor chanticleer tied to a pole and pelted by any one who would pay a prescribed sum. In this instance, as though decency should be as much outraged as possible, the scene was the churchyard of a country town (Tring, Herts). We cannot omit Strutt's description of this sport (if sport it can be called), coupled as it is with a comic instead of a tragic scene. It was common, in the times to which this indefatigable collector of olden facts alludes, "to put the cock into an earthen vessel made for the purpose, and to place him in such a position that his head and tail might be exposed to view; the vessel with the bird in it was then suspended across the street, about twelve or fourteen feet from the ground, to be thrown at by such as chose to make trial of their skill; two-pence was paid for *four* throws, and he who broke the pot and delivered the cock from his confinement had him for a reward. At North Walsham in Norfolk, about forty years ago, some wags put an owl into one of these vessels; and having procured the head and tail of a dead cock, they placed them in the same position as if they had appertained to a living one: the deception was successful, and at last a labouring man belonging to the town, after several fruitless attempts, broke the pot, but missed his prize; for the owl being set at liberty instantly flew away, to his great astonishment, and left him nothing more than the head and tail of the dead bird, with the potsherds, for his money and his trouble. This ridiculous adventure exposed him to the continual laughter of the townspeople, and obliged him to quit the place; to which, I am told, he returned no more." (*Sports and Pastimes*, p. 251.)

422. *Of the estimation in which hawking continued to be held in this century*, we may form some opinion from Lord Berner's *Troissart* (1523), where it is related of him "that the kynge had thirty faukoners a horseback with hawks, and fourty couple of houndes and as many greyhoundes; so that nere every day eyther he hunted or hawked at the ryeur as it pleased him. And diuers others of the great lords had houndes and hawkes as well as the king."

423. *During the fifteenth century chivalry declined*, and the close of it exhibited only the last sparks of this institution The intestine troubles, which prevailed during the principal part of it, were alike detrimental to the advancement of the arts and to the pursuit of field sports. Artillery became common in this century; and not only were cannons used as engines of war, but hand guns, or hand cannons, came also into use for martial purposes. Montfauçon says they were first used in 1414.

Subsect. 2. *The Introduction of Fire Arms to the Chase.*

424. *The sixteenth and seventeenth centuries had almost elapsed*, ere the use of fire arms was sufficiently perfected to be extended to the chase, and ere the long-bow and the cross-bow were completely superseded. The cross-bow had long been the favourite instrument in use among sportsmen, from its greater effect; and this preference was so great, that Henry the Seventh prohibited the use of it, "because the long-bow had been much used in this realm, whereby honour and victory had been gotten against outward enemies." Henry the Eighth also forbad the use of the cross-bow, under a penalty of ten pounds; fearing that its use would prove prejudicial to the employment of the bow and arrow as military weapons. As an implement of the chase, however, the cross-bow had become so universally popular with sportsmen, that even the martial prejudice was forced to give way to the calls of the sports of the field, and cross-bows were again allowed under some restrictions. The total extinction of both the long-bow and the cross-bow as sporting appendages, was also delayed until long after they had been laid aside as military weapons. The musket, even in the reign of Elizabeth, was so ill-fashioned and cumberous, that the bow continued to be preferred as the most efficient instrument; nor was it until the time of Charles the First that fire arms were much used for sporting purposes.

425. *Henry the Eighth was a sporting character* in every sense of the word, although the unreflecting of the present day might be tempted to call him a *cockney* sportsman; for he issued a proclamation in 1536, stating "his great desire to preserve the pheasants, partridges, and hares, from his palace at Westminster to St. Gyles's-in-the-fields, as well as from thence to Islington, Hampstead, Highgate, and Hornsey Park." We have, however, ourselves shot snipes and wildfowl within a mile of St. Pancras church; and have, on one or two occasions, pursued partridges within a mile of Tottenham-court and Portland-place, and that, before the enclosure of the Regent's Park afforded them protection. We can

therefore readily suppose this district, thus preserved, afforded excellent sport. He appears also to have had an unbounded passion for hawking, and had nearly lost his life in the pursuit of it. He was likewise so attached to cock fighting, that he established a cockpit at Whitehall for his own amusement. He was also a proficient in angling, and in all games, both of skill and chance. His unwearied attention to improve the native breed of horses made him impose on the nobility and gentry the keeping of a certain number, in proportion to their rank and circumstances.

426. *The reign of Queen Elizabeth* was one in which field sports received much personal encouragement from royalty itself. She indeed deserved the title of the English Diana Venatrix, and although the pursuit could not immortalise her life it prolonged it: and, however historians may differ in their political construction of the actions and tendencies of their rulers, there can be but one opinion on that of the attachment of this celebrated princess to rural amusements. Nor need any more convincing proof of the natural predilection in favour of field sports be offered, than the endearing cognomon of "*good Queen Bess*," given her by all ranks. We have already hinted at the variety of her hounds, by which we know she hunted the stag, the fallow deer, the hare, and otter. In 1575, when Elizabeth was so magnificently entertained by her favourite Dudley, earl of Leicester, at Kenilworth Castle (*fig.* 86.), stag hunting was one of the amusements she partook of, and which a spectator thus describes: —

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KENILWORTH CASTLE.

427. "*The hunting of the hart or fors.* Munday was hot, and thearfore her highness kept in a till a five a clok in the eevening: what time it pleaz'd her to ride foorth into the chase too hunt the hart or fors: which fooünd anon, and after sore chased by the hot pursuit of the hooundes, was fain of fine fors, at last to take soil. Thear to behollđ the swift fleeting of the deer afore with the stately cariage of his head in hiz swimmyng, spred (for the quantitee) lyke the sail of a ship: the hounds harloing after, as they had bin a number of skiphs too, the spoyle of a karvell: the ton no lesse eager in purchaz of his pray, then waz the other earnest in savegard of hiz life: so az the earning of the hoounds in continuauns of their crie, the swiftness of the deer, the running of footmen, the galloping of horsez, the blasting of hornz, the halloing and hewing of the huntsmen, with the excellent echoz between whilez from the woods and waters in valleiz resounding; moved pastime delectabl in so hye a degree, az for ony parson to take pleazure by moost sensez at onez: in mine opinion, thear can be none oney wey comparable to this; and speciall in this place, that of nature is foormed so fytt purpose; in feith, Master Martin, if ye coold with a wish, I woold ye had bin at it. Wel, the hart was kild, a goodly deer, but so ceast not the game yet.

428. "*Wednesday, her majesty rode intoo the chase*, to hunting again of the hart or fors. The deer, after his property, for refuge took the soyl; but so mastered by hote pursuit on al parts, that he was taken quick in the pool: the waterman held him up hard by the hed, while at her highnes comaundment he lost his earz for a raundsum, so he had pardon for lyfe." The attachment of Elizabeth to the chase was so notorious, that, in progressing through the kingdom, the nobility who entertained her seldom neglected to make large hunting parties for her amusement. Sir Rowland White, in a letter to Sir Robert Sidney, dated September 12, A. D. 1600, has this passage: — "Her majesty is well and excellently disposed to hunting, for every second day she is on horseback, and continues the sport long." It is to be remembered that at this time her majesty had just entered her *seventy-seventh year*.

429. "*The diversion of coursing in this reign*," says *The Courser's Manual*, "attained a degree of fashion and celebrity previously unknown, and became an emulative sport, which has since been followed with undiminished zeal. The laws of the leash were first formed into a regular code about this period by the Duke of Norfolk, the Lord Rivers of his day, and were fully established by the nobility and gentry, on principles which have been since adhered to with only some slight alterations. Nor did the queen herself, and her lusty beef-eating maids of honour, disdain to patronise the noble sport. We have it on record in 1591, that at Cowdry Park in Sussex, the seat of Lord Montacute, the queen saw from a turret sixteen bucks, 'all having fair law,' pulled down after dinner by greyhounds." (See *Coursing*, infrà.)

430. *The masculine and cruel turn* with which the pastimes of more early days were marked, it is to be regretted, were continued to this period. It is likewise to be lamented that they were not only patronised by the kings, but were also equally encouraged by the female rulers. When Queen Mary visited her sister the Princess Elizabeth, at Hatfield House, a grand exhibition of bear baiting was made for their amusement. The same princess, after her accession to the throne, entertained the French ambassador with both bull and bear baitings. The following advertisement, which appeared in the reign of Queen Anne, offers a specimen of the taste of a later period even, as well as the mode of giving publicity to the sports of the day: — "At the bear garden in Hockley-in-the-hole, near Clerkenwell-green, this present Monday, there is a great match to be fought by two dogs of Smithfield-bars, against two dogs of Hampstead, at the Reading Bull, for one guinea to be spent; five let-goes out of hand: which goes fairest and farthest in, wins all." Mention is also made of the famous bull of fire-works, which pleased the gentry to admiration. "Likewise there are two bear-dogs to jump three jumps apiece at the bear, which jumps highest, for ten shillings to be spent. Also variety of bull baiting and bear baiting; it being a day of general sport by all the old gamesters; and a bull-dog to be drawn up with fire-works. Beginning at three o'clock." Another notice runs thus: — "At William Well's bear garden in Tuttle-fields, Westminster, this present Monday, there will be a *green* bull baited; and

twenty dogs to fight for a collar; and the dog that runs farthest and fairest wins the collar; with other diversions of bull and bear baiting. Beginning at two of the clock." (*Strutt's Sports*, p. 230.) It is plain, therefore, that these debasing scenes appear to have had powerful attractions for all ranks and conditions of persons in these times, and that bears were expressly imported, and other animals obtained, for the purpose of baiting. After having been tried, such bears as exhibited great strength with much irritability were sold at very considerable sums. One renowned bruin, called George Stone (for it was the custom to name these bears after human individuals), was particularly celebrated for his feats in "single combat." Shakspeare, in his *Merry Wives of Windsor*, mentions one of this kind, called "Sackerson." Another, which "lived and flourished" in the next reign, was known as "Young Blackface," and belonged to one O'Sullivan. "This bear fought the extraordinary number of twenty-two 'single and double' combats, in one day, against the best dogs in the country. This excellent champion was killed at last, by being fought against three dogs at once, without his 'protection,' as the iron collar was called which he wore, and which, as he always fought muzzled, formed a very efficient part of his defence. A song, celebrating his virtues, was written upon his death, part of which is to be found in a collection of old ballads, most of them imperfect, in the British Museum." Bear baiting by water also seems to have been a variety occasionally practised towards the latter end of the fifteenth and the commencement of the sixteenth centuries, as the following incident shows. An important controversial MS. was sent by Archbishop Cranmer across the Thames. The person intrusted bade the waterman keep off from the tumult occasioned by *baiting a bear on the river* before the king; he however rowed too near, and the persecuted animal overset the boat, by trying to board it. The MS., lost in the confusion, floated away and fell into the hands of a priest, who, being told that it belonged to a privy counsellor, was terrified from making a use of it, which might have been fatal to the head of the reformed party.

431. *James the First was of a sober and sedate turn*, and he left some precepts for the guidance of the Prince of Wales, his eldest son, in which he condemns all rough and violent sports, tumblings, comedians, and balladines. Gambling he utterly disapproves; but he allows, in moderation, the manly exercises of running, leaping, wrestling, fencing, dancing, archery, &c. He adds, — "It becometh a prince best of any man to be a faire and good horseman: use therefore to ride great and courageous horses; and especially use such games on horseback as may teach you to handle your armes thereon." He continues, — "I cannot omit heere the hunting, namely, with running houndes, which is the most honourable and noblest sort thereof; for it is a thievish forme of hunting to shoote with gunnes and bowes, and greyhound hunting (coursing) is not so martial a game. As for hawkinge, I condemn it not; but I must praise it more sparingly, because it neither resembleth the warres so neere as hunting doeth in making a man hardie and skilfully ridden in all grounds, and is more uncertain and subject to mischances; and, which is worst of all, is an extreme stirrer up of the passions." This prince was nevertheless a sportsman, and was, notwithstanding his gravity, so fond of cock fighting that, according to the account of Monsieur de le Bodenie, ambassador from Henry the Fourth to James, he constantly amused himself with it twice a week. The racing amateur is particularly called on to esteem the memory of James the First; for he introduced the first Arabian into England, and it was in his time that public races were established. His *hunting establishment* was also large, as we are assured by a comparison between his expenses on this score and those of Elizabeth, who, we have proved, was likewise passionately fond of the chase. Those of James amounted to 843*l.* 15*s.* 5*d.*, whereas those of Elizabeth were only 269*l.* 7*s.* 5*d.* In the great difference between these sums there is more reason for surprise; for little variety in the hound establishment of James is specified; whereas in those of Elizabeth, we find separate items of expenditure for the buck-hounds, the hart-hounds, the hunting-harriers, and the otter-hounds; with a sum total short of 300*l.* per annum. What her other game establishments might have cost her we are not informed. We are however to recollect that, in addition to the blood stud and the large hound establishment of James, we find that near 300*l.* per annum was also expended on warreners and gamekeepers, which, according to the value of money in those times, makes the sum total large. Scotland, also, owes him her meed of praise; for it was he who first enriched her *Fauna* with the Norway deep brown variety of the fallow deer, that being the only one fit to encounter the bleak situations of the Highlands.

Sect. II. *British Field Sports from the time of James I. to that of George III.*

432. *The long period of trouble and confusion which followed the last reign* was marked with singular discrepancies in the amusements of the people; for, while they continued to be characterised with all the ferocity and cruelty of former reigns, vast improvements were nevertheless gradually introducing themselves, notwithstanding the intestine troubles which threw a shade that might be supposed to interrupt every pursuit unconnected with political feeling.

433. *Charles the First was an accomplished horseman and an ardent sportsman.* He warmly promoted racing; and it was under his auspices that race courses were established in Hyde Park and at Newmarket. James the Second, William, and Anne, were also patrons of the turf; and large importations were made in their times of stallions of the Barbary and Arabian breeds. Beast baitings, however, instead of decreasing with the growing intelligence of the British people, were still much practised. Cock fighting also remained

greatly in vogue; while dog fighting and badger baiting were become still more than ever common in the kens of the fancy. This latter sport, which had succeeded to the decline of ass and bear baiting, now took the lead; and, to our disgrace as a nation, it still retains a place among the sports and pastimes of the lower classes. In the nineteenth century we are ashamed to own that the bull-dog is still bred for the brutal purposes of worrying other animals, or tearing out the vitals of his own species. When shall we learn that true bravery is ever tinctured with humanity, while cowardice and cruelty are inseparable?

434. *Baitings of badgers in the middle ages* were conducted much after the present method, which may be thus described: — The badger (*fig.* 87.) is put into a hollow box, intended to represent his burrow, and is furnished with an opening above and at one end. The owner having placed the badger in the box, and the person who is to "mark time" being prepared with his watch, the master of the badger proclaims him open to any dog *to draw.* On which any one, wishing to make the attempt, enters his dog by sending him into the box. The dog is in most cases seized by the badger, which in its turn is as quickly seized by the dog, when both get locked, grinding and tearing each other with all their might. The dog is however quickly drawn out by the tail, usually fast locked with the badger, which is directly loosened and again turned into his box, the dog being allowed to follow him, and again to fasten on him, and once more to be dragged out with the badger. This scene is repeated according to the *bottom*, as it is called, of the dog; and as many times as he lays such firm hold of the badger as to allow of both being drawn out together *in a minute*, in such proportion does the dog show the requisite *bottom* or *game.*

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BADGER.

435. *Dog baitings and dog fights* appear to have been common in these days. Burton comments on them with just reprehension. Strutt, as we have before observed, notices the popularity of the bear gardens, where these fights occurred: and he further informs us, that the ladies were great admirers of such brutal sports, and frequenters of the gardens where these scenes were enacted. Cock throwing, as we are told, was one of the *polite* amusements of this era.

SUBSECT. 1. *Bull Baiting revived, and other cruelties pursued with shameful ardour in these times.*

436. *Bull baitings in the middle ages were pursued with much vigour,* and were attended by high and low with equal promptitude. It is said that the first bull bait took place in the reign of King John, A. D. 1209, at Stamford in Lincolnshire. If we may believe the accounts of historians, William, earl of Warren, standing on his castle walls in Stamford, saw two bulls fighting for a cow in a meadow underneath. A butcher, the owner of one of the bulls, set his mastiff upon one of the combatants, who, becoming furious, ran through the town to the dismay of the natives, but to the delight of the earl, who beheld the scene in safety, and was so pleased with the sight, that he gave the meadow, where the fight originated, for a common field for the butchers of the town after the first crop was mown, on condition of their exhibiting "a mad bull" on the day six weeks before Christmas-day, to perpetuate the sport for ever. An annual bull bait was likewise established at Tutbury in Staffordshire, about the year 1374; but it was here attended with some additional ceremonies. It was the custom of the manor for the prior to give his minstrels a bull annually, which, after having his ears cropped, his tail cut short, his horns sawn off, his body smeared with soap, and his nose blown full of beaten pepper, was to be turned down before them, and to be hunted by them alone, until some one of them had strength or dexterity enough to wrest or cut from his slippery hide a portion of hair, when the bull was immediately chained to a stake and baited. The Duke of Devonshire, in virtue of his office as steward of Tutbury, abolished this disgraceful custom in 1778. In 1661, the first of an annual exhibition of bull baiting took place at Workington in Berkshire, in conformity to the will of one Staverton, who left funds for that purpose; and in many other of the larger towns of England a similar custom prevailed, and was kept up until within a few years. King James himself appears to have been particularly attached to bull baiting, and seems to have visited several places purposely to be a spectator of this sport.

437. *Occasional recurrences of this cruel sport are even yet to be met with.* The Grand Duke Nicholas was present at a boxing match and a bull bait, got up purposely to afford him a specimen of English taste. The "mill" being over, Oliver's game bull was brought to the stake, and what is called a "let-go-match" took place, with some celebrated bull-dogs, for a silver collar. The attack on the animal by the dogs, and the determination and dexterity of their attempts to *pin* the bull, surprised and appeared to delight the duke. The breaking loose of the poor baited brute, and the confusion which followed, was a source of equal amusement; and thus ended this princely sport!!! To those with whom such a scene is not familiar, it may be stated that it is conducted thus: — "The animal is fastened to a stake driven into the ground for the purpose, and about seven or eight yards of rope left loose, so as to allow him sufficient liberty for the fight. In this situation a bull-dog is slipped at him, and endeavours to seize him by the nose; if the bull be well practised at the business, he will receive the dog on his horns, throw him off, and sometimes kill him; but, on the contrary, if the bull is not very dexterous, the dog will not only seize him by the

nose, but will cling to his hold till the bull stands still; and this is termed *pinning the bull* (*fig.* 88.). What are called good game bulls are very difficult to be pinned: being constantly on their guard, and placing their noses close to the ground, they receive their antagonist on their horns; and it is astonishing to what distance they will sometimes throw him. It is not deemed fair to slip or let loose more than one dog at one and the same time." When a bull is fairly *pinned*, should he break loose, such is the unconquerable determination of the dog, that he will rarely quit his hold, but will be seen, as in our illustration, to remain pendent from the muzzle of the running bull.

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BULL BAITING.

438. *Cock fighting was probably introduced among the British by their Roman masters*, who had received it from Greece. "Every year," says Fitzstephen, "on the morning of Shrove Tuesday, the schoolboys of the city of London bring game cocks to their masters, and the fore part of the day, till dinner time, they are permitted to amuse themselves with seeing them fight; the cock-pit being the school, and the master the comptroller and director of the pastime." The same custom, we are informed, was common in many schools in Scotland within the last century. Strutt is of opinion from this, that cock fighting was originally considered a childish amusement. Educating and training various winged tribes to fight was, however, early and generally practised, particularly in eastern countries; and that it was extensively followed by other than children, is evident from the check that was attempted to be given to it by a public proclamation of Edward the Third; but such was its popularity that it could not be wholly stopped. Henry the Eighth, as before observed, added a cock-pit to his palace at Whitehall. King James also, we are informed, was so great a lover of the sport, that it was performed before him twice a week; and it appears that it was more or less encouraged in the following reigns by all classes. The *Welsh main* was a refinement of modern times, and is stated by Mr. Pegge, in his *Memoirs on Cock Fighting*, "as a disgrace to us as Englishmen." The Welsh main, we hardly need state, is the matching a certain number of cocks — an individual against an individual — and again matching the conquerors, until one only remains unconquered. The game cock seems, in the very early history of the sport in Greece and Rome, to have been cut and trimmed as at present, but the addition of spurs remained for after times; for, among many old illuminated MSS. seen by Mr. Strutt, he never observed the smallest indication of spurs.

Subsect. 2. *Changes in the Character of Field Sports, in the last and present Centuries.*

439. *Commensurate with the general increase of knowledge and improvement in the arts*, an important change in the practice of field sports had been slowly but effectively going on. The character of the chase and its appurtenances had received various modifications. The age of chivalry had past away; the very shadow of the tournament was only to be seen at a coronation, or "my lord mayor's show." The bow and arrow had retreated into the hands of schoolboys, when the fowling-piece was perfected. Shooting, as it is termed, now took a wider range, and formed a distinct and all-fascinating branch of the chase; and the invention, which had rendered the aerial tribes so much more easily and less expensively obtainable, was equally fatal to the general practice of hawking. Fox hunting was now fast advancing on stag hunting in the public estimation; it likewise became fashionable to breed and train both horses and hounds to much greater speed in their paces. These attempts at improvement, though gradual, were sure in their effects; as we see in the present mode of conducting this celebrated sport, in which men, horses, and dogs, may be considered as rather coursing the fox than hunting him. The cavalry horse was also now bred, of a stamp very different from that of the former war charger; which previously, having to carry cumberous weapons and a rider clad in armour, was necessarily large, strong, and consequently inactive. Nor did the improvement stop here, but extended itself through every variety of this valuable animal, particularly since our efforts were successfully directed to the cultivation of what is known as the English thorough-bred race-horse, now deservedly the envy and the admiration of all other nations; and yearly imported by their opulent members. Our hounds, likewise, are now much sought after; and, although they may not be equally objects of export, they are nevertheless occasionally sent to almost every *extra* European country, and to most continental parts as well. Our sporting gear also, particularly our fowling-pieces, formerly supplied to us from Spain, &c., is now sought for by those who used to furnish them to us. It is not, however, our intention to pursue this sketch of the various objects of the British chase farther here, as we shall, ere long, have to enter on a more full inquiry into each distinct part thereof.

Chap. IV.

An Outline of the more popular athletic Exercises at present practised in Great Britain.

440. *Mens sana in corpore sano.* — When Juvenal tells us that the greatest gift of the gods is "a sound mind in a healthy body," we are led to inquire, first, how this blessing is to be obtained? and next, whether it be essential to the possession of the one that the other be present? We will not deny that vivid perceptions may accompany both an inert and a diseased state of body; but such perceptions will be somewhat erratic if not actually distorted. The mental faculties are seldom able fully to develop themselves unless the body, by necessary nutriment, wholesome air, and sufficient exercise, be in a healthy state. Our present business is to treat of such stimuli to take exercise, as will act upon those who are not forced thereto by necessity. The games we are preparing to notice are adapted to this purpose, and are equal to the states and the wants of all. The ball presents itself in a thousand forms. In the heyday of life it may be pursued in cricket and rackets; as we sober down, it wiles our hours on the bowling-green, or it flies over the billiard-table for our amusement. The athlete seeks the wrestler's fame, and the ice offers itself to the graceful evolutions of the figure skater. All which exercises, in these days, when intellect participates with the body in our amusements, may be pursued without in the smallest degree debasing our character, or furnishing one internal reproach.

Sect. I. *Games of the Ball.*

441. *To trace the origin of human diversion with the ball*, we must go back to those early times when man, in his rudest state, was wont to defend himself, and to attack others by the most simple missiles, as by stones thrown from the hand. Such masses were next projected by means of the sling, which simple improvement would lead to the invention of more complex machinery. To perfect himself in these would require much practice; and, when this took place among his fellows also, it would assume by emulation and rivalry the principles and character of a sport or game; as that which is begun in necessity is often continued afterwards by habit as an amusement. Of this the ball is an exemplification; for nothing has given rise to more diversified or more popular pastimes than this simple article. China is famous for its *ball playing;* and the famed ball, which was to exude a sanative virtue to the diseased potentate of the east, when beaten about with his hand, is at once an apt figure of the benefits to be derived from exercise, and the popularity of the temptation to engage in it by means of a favourite game.

442. *Hand-ball* (*fig.* 89.) is sung by Homer, because it was played by the maidens of Corcyra; and *hand-ball* with us has, without doubt, given rise to many pretty verses on the graceful attitudes displayed by the British damsels when engaged in passing it from one to the other during the Easter holidays, to earn the tansy cakes which were the reward of the victors. "Fuller," according to Strutt, "mentions the following proverbial sayings used by the citizens of Chester, 'When the daughter is stolen, shut Pepper gate;' which he thus explains, 'The mayor of the city had his daughter, as she was playing at ball with other maidens in Pepper-street, stolen away by a young man through the same gate, whereupon he caused it to be shut up.'" The illustration which heads this subject is also copied from Strutt, who considers it as intended to represent a species of pat-ball, but known then as balloon-ball, from the ball used being hollow within. The original appears to have been taken from a MS. of the fourteenth century. Strutt further observes that hand-ball was, from very early times, a favourite pastime among young persons of both sexes; and, in many parts of the kingdom, it was customary for them to play at this game during the Easter holidays for tansy cakes. There are few of us of either sex but have engaged in *base-ball* since our majority; and the gravity of middle age is pleasingly broken in upon by the feats of *pat-ball*, as we see it practised among our children. Hand-ball has also grown into *fives*, or *tennis;* and, when the hand called in foreign aid, *rackets* sprung up. Was it that the ball might never be unengaged, and that its Protean qualities might never terminate, that it became to be propelled as well by the feet as the hands, and then engaged attention as foot-ball?

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HAND-BALL.

443. *Bandy-ball*, under some term or other, is known all over the world; and has, in its various modifications, elicited some of the most popular games of every country. We recognise it in Persia as the *chugan;* in Languedoc as the *chicani;* and in Chili as *la chuca*. The golf club, exhibited on the Leith Links, is but an improved bandy-stick; and the cricket-bat, which excites admiration in Lord's Ground, has grown from the same root. Indeed we may add, that though the bandy-stick has often renewed itself in other shapes, it yet maintains its individual integrity in Wales; and the vale of Glamorgan boasts of a set of bandy-players who affect to defy all competition. We need not describe the game, as every one's recollection will call to his mind the chosen few, with each his bandy-stick, crooked and knobbed at its nether end. These being

opposed to an equal number of antagonists have a common object, *i. e.* which set shall succeed in forcing a ball along the ground to opposite holes.

444. *The game of bowls is unquestionably of considerable antiquity.* Strutt gives a plate from a MS. in the Royal Library, of the date of the twentieth year of the reign of Edward the Fourth, which represents bowling as early as the thirteenth century (*fig.* 90.). It was at one time a fashionable game; and, to this day, there are well frequented bowling greens in many principal towns, which command the attendance of the most respectable residents; and if the game be now less fashionable than formerly, it still remains extremely respectable. In the *Life of Mrs. Elizabeth Thomas*, a literary lady, known rather more than a century ago as Corinna, written by herself, mention is made of a house at Barking, called Barking Hall, which belonged to her great grandfather, Richard Shute, Esq., a Turkey merchant, and one of the members for the city of London. She describes it as situated at the end of a long avenue of elms, an antique building of a castellated form. Here, she tells us, Mr. Shute made one of the prettiest and most commodious bowling greens that had been seen; and that King Charles the First, who was partial to that amusement, having heard the fame of this new bowling green, told Mr. Shute, when he next came to court, that he would dine with him the following day at Barking, and try his skill. Mr. Shute made the best preparation that the shortness of the time would allow; and the king was so well pleased with his entertainment, that he would frequently lay aside his state, and resort thither with only two or three gentlemen as his attendants. They generally played high, says our authoress, and punctually paid the losings; and though Mr. Shute often won, yet the king would at one time bet higher than usual, and having lost several games, gave off. "And if it please your majesty," said Mr. Shute, "one thousand pounds, some rubbers more; perhaps luck may turn." "No, Shute," replied the king, laying his hand gently on his shoulder, "Thou hast won the day, and much good may it do thee; but I must remember I have a wife and children." Count Gramont informs us, also, that this game had a daily share in the diversions of the court of Charles the Second at Tunbridge.

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BOWLING.

SUBSECT. 1. *The Games of Rackets, Tennis, and Fives.*

445. *The game of rackets* is played by striking a ball against what is called a head-wall, and returned at the bound to the same wall, each player endeavouring so to strike it against the wall, that his adversary may not be able to return it: he who does not return it, either loses a point (or, as it is technically termed, "an ace") or has his "hand out," that is to say, forfeits the situation in which he would be able to add to his score of the game. People, in general, are not aware of the skill required to play the game well; and the fact is, the better it is played the more easy it appears. There are several open racket courts, independent of that in the Queen's Bench prison, where gentlemen seldom go voluntarily for the sake of playing, although they take it now and then "upon compulsion." There is a good open court at the Belvidere, Pentonville; another was laid out at the Eagle Tavern, in the City Road; and the proprietor of White Conduit House had a third; but the fault of such places is, that the company is not sufficiently select, and that a gentleman, who is fond of the game (and all are fond of it who can play at all), is there compelled to join a miscellany of very respectable persons no doubt, but not of the highest grade in society. As it is, the ardour of some individuals of rank and education in pursuit of the game, induces them to overlook the inconvenience to which we have alluded; and we must do the proprietors of the courts we have named the justice to say, that they do endeavour to keep persons of really questionable character at a distance. "The late Honourable T. Coventry, the late Captain Best, Major Campbell, and some others who sojourned by compulsion in St. George's-fields, were excellent racket players." (*Egan's Book of Sports*, p. 226.)

446. *Hand tennis is a game of great antiquity*, and was originally called *paume*. The renowned Sir Tristram, in the *Romance of the Death of Arthur*, we are told, excelled every one in runnyng, *playing at the paume*, shotyng, and casting of the barre. James the First likewise advises his son, among the games befitting his rank, to practise *playing at the caitch or tennise.*

447. *Tennis is also played with a racket,* but differs from the game of rackets, inasmuch as tennis consists "in dropping a ball over a central net, on each side of which the players stand." It is thus described in the *London Encyclopædia:* — "The size of a tennis court is generally about ninety-six or ninety-seven feet, by thirty-three or thirty-four. A line or net hangs exactly across the middle, over which the ball must be struck. Upon the entrance of a tennis court there is a long gallery which goes to the dedans, that is, a kind of front gallery, into which, whenever a ball is struck, it tells for a certain stroke. This long gallery is divided into different compartments or galleries, each of which has its particular name, as follows: — From the line towards the dedans are the first gallery door, second gallery, and the last gallery, which is called the service side. From the dedans to the last gallery are the figures 1, 2, 3, 4, 5, 6, at a yard distance each, by which the chaces are marked. On the one side of the line are also the first gallery door, second gallery, and last gallery; which is called the hazard side. Every man struck into the last gallery, on this side, reckons for a certain stroke the same as the dedans. Between the second and this last gallery are the figures 1, 2, to mark the chaces on the hazard side. Over this long gallery, or these compartments, is a covering, called the pent-house, on which they play the ball from the service side, in order to begin a set of tennis; from which it is called a service. When they miss putting the ball (so as to rebound from the pent-house) over a certain line on the service side, it is deemed a fault, two of which are reckoned for a stroke. If the ball rolls round the pent-house, on the opposite side of the court, so as to fall beyond a certain line described for that purpose, it is called passe, reckons for nothing on either side, and the player must serve again. On the right hand side of the court from the dedans is the tambour, a part of the wall which projects, and is so contrived in order to make a variety in the stroke, and render it more difficult to be returned by the adversary; for, when a ball strikes the tambour, it varies its direction, and requires some extraordinary judgment to return it over the line. The last thing on the right hand side is called the grill, wherein, if the ball is struck, it is also fifteen, or a certain stroke."

448. "*The game of tennis is played by what they call sets.* A set of tennis consists of six games; but if they play what is called an advantage set, two above five games must be won successively by one of the parties. When the player gives his service at the beginning of a set, his adversary is supposed to return the ball; and, whenever it falls after the first rebound untouched, the chace is called accordingly: for example, if the ball be at the figure 1, the chace is called at a yard, that is to say, at a yard from the dedans; this chace remains till a second service is given; and if the player on the service side lets the ball go after his adversary returns it, and if the ball falls on or between any of these figures or chaces, they must change sides, there being two chaces; and he who then will be on the hazard side, must play to win the first chace; which if he wins by striking the ball so as to fall, after its first rebound, nearer to the dedans than the figure 1, without his adversary's being able to return it from its first hop, he wins a stroke, and then proceeds in like manner to win the second chace, whenever it should happen to be. If a ball falls on the line with the first gallery door, second gallery, or last gallery, the chace is likewise called at such or such place, naming the gallery door, &c. When it is just put over the line, it is called a chace at the line. If the player on the service side returns a ball with such force as to strike the wall on the hazard side so as to rebound, after the first hop over the line, it is called a chace at the line. The chaces on the hazard side proceed from the ball being returned either too hard, or not quite hard enough; so that the ball, after its first rebound, falls on this side of the blue line, or line which describes the hazard side chaces; in which case it is a chace at 1, 2, &c., provided there is no chace depending. When they change sides, the player, in order to win this chace, must put the ball over the line any where, so that his adversary does not return it. When there is no chace on the hazard side, all balls put over the line from the service side, without being returned, reckon for a stroke. This game is marked in a singular manner. The first stroke is called fifteen, the second thirty, the third forty, and the fourth game, unless the players get four strokes each, in that case, instead of calling it forty all, it is called deuce; after which, as soon as any stroke is got, it is called advantage; and, in case the stroke becomes equal again, deuce again, till one or other gets two strokes following, which win the game. Although but one ball at a time is played with, a number of balls are made use of at this game to avoid trouble, and are handed to the players in baskets for that purpose; by which they can play as long as they please, without ever having occasion to look for a ball." (*London Encyclopædia*, art. Tennis.)

449. *Fives principally differs from rackets* in being played by means of the hand alone without the racket. There are several fives courts about London, and in the yard of the Queen's Bench prison the game is constantly going on.

Sect. II. *The Game of Cricket.*

450. *Of the games to which the ball has given rise,* few, if any, have become so popular among all ranks as cricket. Its exact origin is uncertain, but there is no doubt it was here and here only that it was reared and matured, which gives it an additional hold on our

esteem. That the date of its commencement should not have been ascertained in this age of research is remarkable. The game of cricket (*fig.* 91.) is thought to be derived from the *chugan* of the Persians, but is more nearly allied to the bandy-play of the Welsh, the hurling of the Irish, or the elegant golf of the Scotch. It may also be remarked, that the chugan was usually played on horseback. We consider cricket as having a particular claim to patronage, for it is in every sense a game of the people generally, from the highest to the lowest; it excites no envy by its exclusiveness, as it equally engages the attention of the prince and the peasant. We have several instances of royal cricketers. George the Fourth formed a cricket ground adjoining the Pavilion at Brighton, on which, if we mistake not, he has himself often figured both as batsman and fieldsman; and the Royal Clarence Cricket Club, at Hampton, was instituted by his late majesty William the Fourth. The late Duke of Richmond and the Duke of Hamilton were not only warm admirers of cricket, but also very excellent practitioners. The highly esteemed Duke of Bedford patronised it as an exercise particularly calculated to keep up the manly character of the people, and his opinion of it was worthy of his patriotism and his acumen. By associating together the active, the ardent, and the dexterous, of every grade, it encourages a friendly feeling between parties at other times widely separated, and that without destroying the respect and deference due to rank and wealth.

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CRICKET.

451. As to the origin of cricket, it is probable that a game nearly resembling single wicket has been played nearly as long as any game of ball known in England. A writer in the *Gentleman's Magazine* for 1802 cannot make out cricket to be more than "about a hundred years old," but adds, "trap-ball goes back as far as the 14th century." Now how does trap-ball differ from the simplest form of cricket? In trap-ball the ball is hit as it springs up from the trap; in cricket, as tossed from the hand of the adversary. The trap would appear to be the later invention of the two; as, indeed, even the ball is an improvement upon the *cat*, or bit of stick tapering at each end, with which a game similar to cricket has been played in every village, not only in the cricket counties of the south of England, but also in the northern latitudes of bandy and of golf. In Doctor *Jamieson's Dictionary* is the following account of a game played in Angus and Lothian, and called Cat and Dog; though, if we consider that the blockhole of which boys speak was once really a large hole between the stumps (then only two in number, and a foot apart), into which hole the ball was popped to make the runner out, instead of putting down a wicket, we shall readily accord to Cat and Dog the name of a ruder kind of double wicket game, before balls were sold at every chandler's shop. "Cat and Dog is a game at which three persons play, who are furnished with club sticks: they cut out two holes about a foot in diameter, and seven inches in depth: the distance between them is about twenty-six feet. One player stands at each hole with his club: these clubs are called dogs: a piece of wood about four inches long and one inch thick, called a cat, is thrown from one hole towards the other by the third player, who if he can succeed in getting it into the hole takes charge of the club and of the hole, while the other takes his turn with the cat. If the cat be struck the two club bearers change places, and as often as they can cross one is counted in the game, like club ball." This was written, and therefore a game like cricket was common in Scotland, in 1722. It is evident therefore, that the game of cricket, which we know has undergone considerable modifications even in the last fifty years, was played in some rude form as early as any game of ball, or even in many places before balls were made, with cats or bits of stick. The club, as is seen in old paintings of cricket, was, 100 years since, a more appropriate name than bat. But then a question arises how soon was any such game identified with the word cricket. Joseph Strutt, who published in 1801 *The Sports and Pastimes of the People of England*, could find no earlier mention of

cricket than that by D'Urfey in 1719; and "Bat," the author of an excellent little *Cricketer's Manual*, as also Old Nyren, could penetrate the mists of antiquity no further.

> "Hur was the prettiest fellow
> At foot-ball or at cricket;
> At hunting, chase, or nimble race,
> How featly hur could prick it."

Each of these authors overlooked the proof furnished by Soame Jenyns, that early in the last century cricket was very much of a "sporting" amusement: —

> "England, when once of peace and wealth possessed,
> Began to think frugality a jest;
> So grew polite, hence all her well-bred heirs,
> Gamesters and jockeys turned, and cricket players." Ep. I. B. 2. *init.*

Also, about the same date, we have in Pope: —

> "The Judge to dance his brother Serjeants call,
> The Senators at cricket urge the ball."

and thirdly, Duncombe's lines: —

> "An ill-timed cricket-match there did
> At Bishopsbourne befal."

But besides these authorities, of equal interest with D'Urfey, nearly fifty years earlier, in a work by Edward Phillips, Milton's nephew, called *The Mysteries of Love and Eloquence*, 1685, 8vo., we read: — "Will you not, when you have me, throw stools at my head and cry, 'Would my eyes had been beat out of my head with a *cricket-ball* the day before I saw thee.'" And this mention of the game of cricket by Phillips is, we believe, the first distinct mention of the word in its modern English form by any author in present use. Mr. "Bat" judiciously remarks: — "None of the early poets, who drew their images so largely from the pastimes and common occupations of men, make the slightest allusion to this now national game. Even Shakspeare, whose plays abound with similes drawn from the noblest as well as the meanest diversions, never hints at it: Massinger, Shirley, Marlowe, and the dramatists who followed, being equally silent." In confirmation of this we would observe that two learned friends, whose black-lettered researches have long been relieved by exercising their criticism at Lord's, both declare that, being possessed of the rarest collection of old dramas, all of which they have read with an eye to "cricket," they both feel competent to assert a negative as to the mention of that word by any English writer at all likely to mention it. *The Schedule of Sports*, drawn up by command of James I., sets forth with great minuteness and formality all the games then supposed to be in existence. Many of these, which to us would appear contemptible, are enlarged on to a ridiculous extent. If cricket had been known and practised, it would have proved a feature in an age and time in which a king was anxious to inure what he termed the meaner sort of people, "to the fatigues of war." Burton, in his learned work, the *Anatomy of Melancholy*, recapitulates the amusements of his time. Cricket, however, is not enumerated. For these two observations we duly thank Mr. "Bat," and would give him in return the following discovery; to the effect that cricket was one of the games played by Edward II. (the King so cruelly murdered in Berkeley Castle) with his tutor, one Mr. John Leek, in the month of April, in the year 1300: — "In the wardrobe account of the 28th year of King Edward I., A. D. 1300, published in 1787, by the Society of Antiquaries, among the entries of money issued for his son, Prince Edward, in playing at various games, is the following: — 'Domino Johanni de Leek, capellano Domini Edwardi fil' ad CREAG' et alios ludos per vices, per manus proprias. Apud Westm. 10 die Aprilis, 100 S.'" This remarkable passage is quoted from the *Gentleman's Magazine*, vol. 58., A. D. 1788; and to this authority we must refer the reader, who will find in the Preface, p. xliii., a remark that no glossary contains any word but cricket to which creag could refer; and also some authority for believing that creag is the same as CRICCE, the Saxon for a crooked stick, whence cricket might have derived its name, just as billiards is derived from *billart*, the Norman term for the stick or cue with which it is played, or from Ball-yard, according to Johnson.

452. *Kent, Sussex, Hampshire, Surrey, Essex, and Middlesex* were formerly the principal cricket counties. Matches were played in Nottingham also in the middle of the last century. The club on the Hambledon Downs in Hampshire, founded, said William Beldham, in 1750, is believed to have been the first regular club; though, with or without that formality, hardly-contested matches were played at least as early in Kent. "When I was a boy," says an amateur of seventy-five, "every cottage in Kent had a cricket-bat in the bacon-rack. My grandfather was a famous player in his day, certainly before the date of the Hambledon Club; and, within these last ten years, I could have shown you his name among that of a famous Kentish Eleven, preserved on a tablet over the chimney-piece of the inn at Sevenoaks." The costumes in several old paintings — one in the pavilion at Lord's, one in the possession of Mr. Caldecourt, and another in the cricket-house of the Teignbridge Club, South Devon — show that the game, with the men arranged nearly as at present, must have been played by an exceedingly old-fashioned set of people. From

these southern and south-eastern counties the game spread — not a little owing to the *propaganda* of the Metropolitan Clubs, which played first at the Artillery Ground, and Montpellier, White Conduit Fields, then at T. Lord's ground (on the site of Dorset Square, before St. John's Wood), latterly at the Oval, Kennington, and on all sides of London — through all the southern half of England; and during these last twenty years the northern counties, and even Edinburgh, have sent forth distinguished players. Railways, as might be expected, have tended wonderfully to the diffusion of cricket — giving rise to clubs depending on a circle of some thirty or forty miles, as also to that club in particular under the canonised John Zingari. The Zingari are a race of ubiquitous cricketers, exclusively gentlemen-players, for cricket affords to a race of professionals a merry and abundant, though rather a laborious livelihood, from the time that the May-fly is up to the time the first pheasant is down. Neither must we forget the All England Eleven, who, under the generalship of Mr. Clarke of Nottingham, play numbers varying from sixteen to twenty-two, in almost every county in England; and so proud are the clubs of the honour that, besides a subscription of some 70*l.*, and part or all of the money at the field-gate, being willingly accorded for their services, much hospitality is exercised wherever they go. This tends to a healthy circulation of the life's blood of cricket, vaccinating and inoculating every wondering rustic with the principles of the national game. Our soldiers, too, by an order of the Horse Guards, are provided with cricket-grounds adjoining their barracks; and all of her Majesty's ships have bats and balls to astonish the cockroaches at sea, and the crabs and turtles ashore. Hence it has come to pass that wherever her Majesty's servants have "carried their victorious arms" and legs, wind and weather permitting, cricket has been played. Still the game is essentially Anglo-Saxon. Foreigners have rarely, very rarely, imitated us. The English settlers and residents everywhere play; but of no single cricket club have we ever heard dieted either with frogs, sauer-kraut, or macaroni. Cricket has followed, in a remarkable manner, the course rather of ale than ardent spirits. Kent, the land of hops, and Farnham, surpassing in the quality and richness of its *pockets* also, were the *Cunabula Trojæ.* Add to these, Alton, the land of Alton ale and Thomas Beagley, and Hants, generally noted for the same beverage and the far-famed Hambledon players. Edinburgh has also added a fame for cricket to its fame for ale: the mists and highlands of Scotland, however, like the bogs of Ireland, which give a relish for whiskey beyond what is conceivable in the dryer southern latitudes of England, are found proportionably discouraging to cricket. Then, in marvellous support of this theory, comes Burton-upon-Trent; and who has not heard of the cricketing of the Midland Counties, fostered, as it has been no little, by that thorough English cricketer — good to make runs and to stop them, with counsel to direct and energy to execute — Mr. Abraham Bass, a gentleman who, not contented only with the annual matches with Liverpool and Birmingham, looks to the next generation, and not only, as Falstaff would say, "a cricketer himself, but the cause of cricket in other men" and *boys*, every season makes up and chronicles a juvenile match, so that the name of Bass for cricket may be as lasting as his kinsman's fame for bitter ale. Neither can we better enter on the various points of the game than in the words of Mr. Bass's address in 1849 to "the Rising Generation": — "The essentials of a true cricketer are, that he should 'bear and forbear;' he must often lose his wicket, but never his good humour; and if it should *slip* away for a moment it must be *recovered* as soon as possible. If he wishes to excel he must be bold, and active, and temperate in all things: in dealing with a ball, as with a neighbour, he should eschew all *crooked* ways and *cross* practices, and keep to the *up-right* and *straight-forward* course, never *over-reach*, and always *on the square.* He must remember *medio tutissimus*, and guard his middle stump — not too backward in coming forward — nor too forward in going back. He must 'hold his head up, yet fight low' — look well at his man, and keep his eyes open. If he play too uppishly, and exalt either himself or the ball to the skies, he will certainly be *caught in the act*, and laughed at for his folly; and should remember, that if he stops a straight ball, he may hit a crooked one, but if he misses it, all his pent-up energies and dormant capacities for action will go for nothing. When bowling, he must use his head as well as his hands, and, suiting himself to his company, find out first his man and then his wicket. He must try him high and low, on and off, far and near, fast and slow, and confuse his ideas both of time and space. The fieldsman must watch the batter, and work the equation, 'given the dodges of the bowler, and pitch of the ball, and style of the batsman, to find whereabouts the ball will come.' He must be the living and lively representation of amiability and good humour, remembering that cricket is a game of *play*, whereas sour, sulky, or passionate ebullitions are too much like *earnest.* He must leave his books in his study, and his ledger in his counting-house, and not go in for his innings with all the solemnity of a 'great-go' or insolvent's examination. The cricketer must obey the laws, and never question the judgment either of his captain or the umpire; a revolutionary spirit being not more subversive of kingdoms than of cricket-clubs."

453. *The practice of cricket* consists in attempts to dislodge *a bail* placed on the top of upright bearers, called *stumps*, of which formerly two only were employed, but to increase the

necessity of superior expertness in the batter, three are now required; and that the slightest touch of the ball should displace the bail, that also is now composed of two pieces. The curved bat with a flat face has likewise given place to one perfectly upright, with a convex face, which renders it necessary that it should be held more perpendicularly than formerly when in the hand of the batsman, as well as that the ball should be met directly in the centre of its surface, to prevent it from flying off in a diagonal line, and affording a ready opportunity of being caught out. "The regular and full game of cricket is composed of twenty-two players, eleven in each party. Each party also selects an umpire, to whom all disputes are referred; who decide whether a player be out or not, and from whose judgment there is no appeal. The wickets are pitched opposite to each other, upon the most level and advantageous ground, and twenty-two yards asunder. They must stand twenty-seven inches out of the ground, and the bails must be eight inches in length. In a line with the wickets a mark is cut in the turf, three feet in length, which is termed the bowling crease; and at right angles with this is a short line, called the return crease. The bowler, in delivering his ball, is compelled to have one foot before, and the other behind the crease; and if he fail, it is the duty of the umpire at his wicket to call out 'No ball!' in which case the batter may strike it, and obtain what advantage he can, and if he be bowled out, it is not reckoned." This brief account will be so easily intelligible with the assistance of the well-known laws of cricket, that more detail is unnecessary.

454. *The practice of bowling*, in order to diminish the advantages found decidedly in favour of the batsman, since about 1820, has been changed. Bowling previously was strictly bowling by a plain and even underhand swing of the arm. But when every kind of ingenuity had been tasked to give a bias to the ball, and thus increase the difficulties of the batsman, the innings were still too long, and the games frequently lasted longer even than a second day; and when the wickets had been raised in height, and the skill of the batsman increased more than in due proportion, the game, quite one-sided, demanded a change. The late Mr. William Ward maintained, with much good sense, that the change should be made, not in the bowling but the wicket — an inch or two more in height, and a fourth, or even a fifth stump, might be added. And one cannot but consider that then matches might be made, according to the proficiency of the players or the time at their disposal, to play a match with three stumps or with more; and even the odds of a stump might be given by the old players to the young, as in a match once played at Lord's, as a kind of handicap. Now, however little this might have been preferred where men bowl like Lillywhite, Cobbett, or Hillyer, country clubs of amateurs, who can practise bowling but once a fortnight, have much reason to regret that Mr. Ward's plan of shortening the game was not adopted; for then, instead of seeing the wide balls equalling the largest innings of a side, and many an over without even a hit, every ball must have been either some amusement for the field or the loss of a wicket. It would then have been a lively and merry game for lookers-on; but now, among amateurs, cricket looks too much like chess. But the law of bowling was the subject of the change: the term bowling was retained, but the practice, in all fair English, is more like whirling, slinging, or flinging, but bowling no more. The office of the umpire is far less easy, because the line separating fair modern bowling from throwing is hard to draw: also, the odds of chance against skill are greatly increased. On the other hand, a more brilliant system of batting has resulted; and I know not that, among good players, we could find one who would vote for the old game with underhand bowling. The overhand bowling would appear likely to admit of dangerous abuse; but dangerous it never has proved. The bowling found dangerous is the underhand jerk or fling — for though the arm does not touch the side, a jerk, which is then commonly allowed, may be given with a degree of speed which, with the best batsman on uneven ground, is anything but play; such bowlers have been Messrs. Osbaldeston, Browne, Kirwan, Marcon, Fellows. The present system of bowling is like the manner in which a woman throws, and one *Miss Wills* in Sussex, throwing to her brother in a barn, suggested the idea of that bowling which Wills was the first to introduce. Broadbridge, Lillywhite, Matthews, Cobbett, Redgate, Hillyer, and Wisden have been the best bowlers in their days respectively. The difficulty of playing the overhand bowling consists — 1st, that it is rarely overpitched, and if a little underpitched the quickness and height of the rebound covers the error; 2dly, that the being delivered at a greater height the rebound is higher; 3rdly, that it admits of more bias; 4thly, that the ball has more rotatory motion round its own axis, which gives greater quickness and variety of course after the ball pitches.

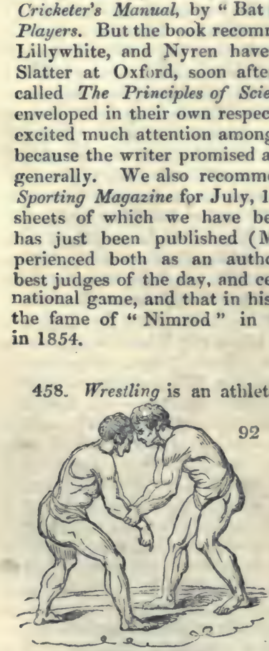
455. "*The striker or batsman* is confined by a line cut parallel with his wicket and four feet distant from it. This line is termed the popping crease. If he transgress this boundary while the ball is in play, the wicket keeper, or any other player holding the ball, is at liberty to put him out by striking down his wicket with the ball. This, however, must always be done by means of the ball itself, either by throwing it, or, if near enough, by keeping the ball in hand at the time of putting down the wicket."

456. "*The wicket keeper holds likewise an important station in the game.* He stands opposite to the bowler, and behind the wicket at which the striker is playing. The duties of the wicket keeper are too various to be here detailed. Besides the bowler and wicket keeper,

who are the two most serviceable men in the field, there are the slips or stops, short and long. The first short-slip, who stands near to the wicket keeper, consequently behind the wicket, is yet diagonally in front of the batter. The point directly faces the striker; his station is about seven yards from the popping crease. The middle-wicket stands on the off-side, and about twenty-three yards from the striker's wicket. The leg or hip has his appointment about sixteen yards from the popping crease, behind the batter. The long-stop is placed behind the wicket keeper, to save the balls he may miss as they come from the bowler; for the batters may take the advantage of running when a ball has been over-thrown or has not been stopped after the bowler has delivered it, although it may not have been struck. The long-slip stands in a line with the striker, and between the point and short-slip, but farther out in the field. A man to cover the middle-wicket and the point, stands on the off-side of the striker. It is his duty to save those balls that either of the above may have missed. The long-field, on the off-side, stands between the middle-wicket and the bowler, but at a considerable distance, to save the hard hits. The long-field, on the on side, is stationed at a great distance from the striker, and on the other side of the bowler from the man last mentioned. After every four balls have been bowled, the umpire calls 'Over!' when the whole party, who are seeking out (with the exception, of course, of the bowler and wicket keeper) change their positions to the opposite quarters of the field."

457. *Of authentic sources of information relative to the theory and practice of the game of cricket* we beg to add the following notices, premising that our own respect for, and our admiration of, this manly game, is such as to make us regret that our confined limits prevent our offering, on our own parts, more than a mere sketch, instead of a full picture of the subject. We will, however, endeavour to point out the sources from whence full information regarding it may be derived. The *Treatise on Cricket Playing*, by Lambert, is a good elementary work to commence with, and may with propriety be followed by Nyren's more systematic essay on the game, in which this veteran excelled as a practitioner. Of the lively and amusing kind is Pierce Egan's article on CRICKETING in the *Book of Sports*, which will well repay the reader's labour to peruse. *Bell's Life*, the sporting papers, and magazines devote much space to *Remarks on the Theory and Practice of Cricket*, and to regular accounts of all the great games which are played. Walker's very clever work on *Games and Sports* gives a condensed but a very instructive account of the practice of cricketing, well calculated to initiate the beginner. A revise of the *Laws of Cricket* has also been made by the Marylebone Club, a copy of which may be obtained at Lord's Cricket Ground; also, a copy of the *Laws of Cricket*, with useful notes, by J. W. Burden; Lillywhite's book *On Cricket*, and Felix on *The Bat; The Cricketer's Manual*, by "Bat;" Mr. Denison's *Cricketer's Companion*, and *Sketches of the Players*. But the book recommended as containing on the art of batting all that either Felix, Lillywhite, and Nyren have written, and much more besides, is a work published by Slatter at Oxford, soon after Nyren's book appeared, small in size, but large in merit, called *The Principles of Scientific Batting;* this is the kernel which later writers have enveloped in their own respective husks. In our first edition we remarked that it had then excited much attention among the cricketing public, which we said we were glad to hear, because the writer promised a larger work on the history and science of the game of cricket generally. We also recommended an able and impartial review of the same in the *New Sporting Magazine* for July, 1836. We are happy to say that the promised work, with sheets of which we have been kindly assisted in writing the chief part of this article, has just been published (May, 1851), as *The Cricket Field.* The writer, very experienced both as an author and a player, has had much assistance from some of the best judges of the day, and certainly has, for the first time, set forth such a work on our national game, and that in his own amusing strain, as to be likely to rival among cricketers the fame of "Nimrod" in his papers on the chase. A later edition was published in 1854.

SECT. III. *Of Wrestling.*



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ANCIENT WRESTLING.

458. *Wrestling* is an athletic sport unquestionably of very ancient date. Its origin is somewhat uncertain, but is attributed to Theseus. When it had become popular as a manly exercise, many ceremonies and preparations preceded the public practice of it. The victory was adjudged to him who gave his antagonist three falls. Thus Milo

> "Arose, and standing in the midst, thus cried,
> One single fall cannot the prize decide,
> And who is here can throw one th' other two?"

Our illustrative cut is borrowed from Mr. Walker's *Manly Exercises*, and is intended to represent, what he calls, "a beautiful *heave* practised by the ancients," effected by one wrestler seizing with his right hand the left wrist of the other; when, stooping forward with his left leg, he grasps the knee-joint of his antagonist from within, with his left hand, and then, by drawing both his hands forcibly towards him, he easily heaves his antagonist upon his shoulder; thus not only *heaving* him, but, as Mr. Walker expressively remarks, actually "*carrying* him off."

459. *The ancient practice of wrestling*, as given by Rolln from Pausanias, Herodotus, Pliny, Cicero, and other classical authorities, will, we presume, present an interesting contrast to that of the present day. "The combatants were rubbed with oils and ointments, to make their bodies more supple and vigorous, and which added to the strength and flexibility of their limbs. But as this unction, in making the skin too slippery, rendered it difficult for them to take good hold of each other, they remedied that inconvenience, sometimes by rolling themselves in the dust of the *palæstra*, sometimes by throwing a fine sand upon each other, kept for that purpose in the *xystæ*, or porticoes of the gymnasia. At first they made use of a belt, with an apron or scarf fastened to it, for their more decent appearance in the combats; but one of the combatants happening to lose the victory by his covering falling off, that accident was the occasion of sacrificing modesty to convenience, and retrenching the apron for the future. The persons who presided in the games, called *Agonothetæ*, *Athlothetæ*, and *Hellanodicæ*, registered the name and country of each champion; and, upon the opening of the games, a herald proclaimed the names of the combatants. They were made to take oath, that they would religiously observe the several laws prescribed in each kind of combat, and do nothing contrary to the established orders and regulations of the games. Thus prepared, they were matched two against two, and sometimes several couples contended at the same time. In this combat their whole aim was to throw their adversary upon the ground. They seized each other by the arms, drew forwards, pushed backwards, used many distortions and twistings of the body; locking their limbs into each other's, seizing by the neck, throttling, lifting from the ground, dashing their heads together like rams, and twisting one another's necks. The most considerable advantage in the wrestler's art was to make himself master of his adversary's legs, of which a fall was the immediate consequence. From whence Plautus says, in his *Pseudolus*, speaking of wine, 'He is a dangerous wrestler, he presently takes one by the heels.'"

460. *This manly game*, therefore, is one of long standing and wide diffusion. Indeed, we have divine authority both to convince us of its antiquity and to sanction its practice, as the thirty-second chapter of *Genesis* will testify, where Jacob is described as wrestling with an angel. From this time, however, history is silent with regard to it, until the Greeks, who cultivated athletic exercises among their youths, as the readiest method of strengthening the body and nerving the mind to martial achievements, encouraged its practice, by bestowing honours and rewards on the victors at the Olympic and Nemean games. Lycurgus, it is said, ordered the Spartan maids to wrestle in public in a state of nudity, purposely to deprive them of that delicacy, which we so justly prize in the female character. We, however, can little wonder that modesty and virtue should be a defect among people who encouraged pilfering, and only punished the delinquent for his want of dexterity in perpetrating a theft that could be detected. The classic reader will call to mind the wrestling between Telamon, Ajax, and Ulysses, at the funeral of Patroclus, as recorded by Homer; and he will probably agree with some *fancy* commentators on the subject, that the account given is not in unison with our notions of *high play*.

461. "*In the celebrated interview* between Henry the Eighth of England and the French king Francis, which exceeded in magnificence and splendour any spectacle of modern times, wrestling was deemed the most manly and entertaining amusement then exhibited in the presence of these two mighty monarchs and their courts. A grand national and scientific display of this athletic art took place between a number of champions selected from both nations, in which our countrymen were victorious. However, one mortified French historian pretends their king left better wrestlers at home than those who accompanied him; and, by way of redeeming the defeat of his countrymen, asserts that Francis himself was a most excellent wrestler; and, in a contest between the two rival monarchs, threw Henry with great violence. Antecedently to this period, wrestling was a favourite amusement, as well among the nobility as the yeomanry and inferior classes; the prize varying according to the rank of the combatants. At some particular times and places there appears to have been some acknowledged and customary prize; this was usually a ram and a ring." (*Egan's Book of Sports*, p. 29.) The writer just quoted, after his racy and amusing method of treating his sporting subjects, is somewhat severe on the description of wrestling to be met with in the fifth canto of the *Lady of the Lake*; nor is he better pleased with the notices of a wrestling match between Bothwell and Burley, which appears in the Scottish novels; and we perfectly agree with him, that it is tolerably clear that Sir Walter "travelled out of the record," when he undertook to describe a wrestling bout, great as his descriptive powers were. Mr. Hogg, better known as the Ettrick Shepherd, has certainly greatly the advantage over the great northern luminary in treating this subject; and, as well observed, his "account is by far the best illustration of the art either of ancient or modern date that has appeared.

462. *The modern practice of wrestling* may be learned by a reference to Walker's *Manly Exercises*, and is detailed also in Litt's *Wrestliana*. Our limits will only allow of such extracts, from these and other sources, as will convey to the uninformed a general notion of this species of combat. The "set to" may be made in various ways. *Throwing*, by lifting from the ground, and rapidly placing one of the knees between the thighs of the antagonist, is provincially called *hipeing*. This throw, however, is effected in different ways. "When, immediately on lifting," says Litt, "the knee and thigh are thrown in and forced upwards; so that, quickly wheeling the whole frame to the contrary side, the assailant is enabled, when turning his man with his arms, and delivering him from his breast, to pitch him with his hip (which will then be close against the lower part of his opponent's belly), in such a manner that, not being able to catch the ground with either foot, he is thrown upon his back — an operation which requires a close hold, and great rapidity in the execution of it; we conceive it may, with propriety, be called *hipeing*."

463. "*But when, on lifting*, the superior length of the assailant enables him to throw his leg so high that his opponent is turned by the action of the knee against the inside of his thigh, and the simultaneous effort of the arms and breast, we conceive the proper appellation to be, *inside striking*. That this is quite a different mode from what we have termed hipeing, is still more evident by some wrestlers lifting their man, and waiting some time for an opportunity. When this is the case, the fall is usually occasioned by the knee, aided by the dexterous management of the arms only, and does not require the men being so close to each other as by hipeing. This method is now become very common; and, if the term *striking* can be as properly, as it is commonly, applied to wrestling, we think it can admit of no definition but an inside *stroke*. It is an invariable maxim that, when a man is determined to make play, the sooner he does it, and the quicker he is in doing it, the greater will be his chance of succeeding. To guard against an inside stroke, or hipe, the defendant should, if possible, keep himself on the ground. To do this, he must either lift against his opponent, or, slackening his own hold, endeavour, by wrenching his body from his op-

ponent's grasp, to plant himself, as it were, to the ground, striving at the same time to keep his opponent off with his breast, and if possible to shrink it underneath his assailant's. If he succeed in this latter mode, he should be on the alert to secure such a hold, when his opponent attacks him (which he cannot do, without in some measure giving his body within the compass of his grasp), as will insure him victory. It is true, a skilful wrestler will be very careful, when he hazards an attack, to keep his right arm well up, to prevent his opponent getting a low hold of him; but still, if he does not succeed, one equally skilful will inevitably gain some advantage by it, such as catching his heel, mending his *hold*, or attacking him in turn before he can recover his balance. If the defendant cannot prevent his opponent from lifting him, he must endeavour, by shrinking his body, to give him the greatest weight upon his breast he possibly can, and instantaneously try to fix his knees and feet so as to prevent the assailant from getting his knee between his thighs, and, at the same time, so as fully to inform himself of every meditated movement the moment it is attempted. If he thus succeeds in checking the first assault, and be equal, or nearly so, to the assailant, he ought to win the fall. These observations, with some trifling deviations, apply to lifting in general." Our extract only goes to a very small part of the subject, which extends to such minutiæ in throwing, that none but a professed wrestler can appreciate.

464. *Cross buttock* is a term so common in the descriptions of prize fights, and yet so little understood by many persons who read these accounts, that we shall present what Mr. Litt further says on this wrestling manœuvre. "In buttocking, or cross buttocking, the breast and side are oftentimes, though not always, as much used as the hip, or, what is the most general appellation, the buttock. A man, skilled in this method of wrestling, generally strives for a loose hold, and it is the left side which is mostly used for effecting the desired object. By stepping partly in and crossways with the left foot, twining the body in, and throwing the buttock underneath the belly, the defendant is, by the assailant's arms being kept tight round his neck, or shoulders, hoisted on, and thrown off, or over, the side, or buttock. (Mr. Walker says, seize his right wrist with your left hand, and draw it as forcibly down to the left as possible, *fig.* 92.) As the latter is by the act of stepping thrown farthest in, it has acquired the name of buttocking; and, when the leg or foot gets quite across the defendant's body, of cross buttocking; though even then it is evident, unless the effort was seconded by the arms and higher part of the body, the act of throwing the legs across would be fatal to the aggressor." (See *Litts's Wrestliana and Walker's Manly Exercises.*) Great wrestling matches are now held at Newcastle-on-Tyne every Easter.

Sect. IV. *Skating.*

465. *As Providence tempers the storm* (*fig.* 93.) to the defective fleece, so the ingenuity of man turns accidental circumstances to his profit or amusement. Thus, a hard frost, which suspends the occupations of some, and curtails the pleasures of others, is hailed by the skater; and the belles and the beaux alike hasten to visit the icy scenes, and to mock the terrors of frost. If the Thames be frozen over, a fair is held on its glassy surface, which terminates only with its solidity. All then is revelry and mirth; trade is diverted into new channels, and the rigours of the climate are changed into an inspiring glow. Such was the case in 1814; but these scenes, here so rare, are annually met with in more northern climates. The ice castles of the Neva furnished and illuminated—the coursings and sledgings on the ice and snow, with the attendant train of male and female spectators who throng the busy scene, occasion a Russian winter, rigorous as it is, to be looked forward to with pleasure. In Friesland there are public courses with skates, in which the women often beat the men. Captain Clias, in his work on *Gymnastics*, observes:—"In this country thirty persons may be seen together, that is, fifteen young men with their mistresses, who, all holding each other by the hand, appear, as they move along, like a vessel driven before the wind. Others are seated on a sledge, fixed on two bars of wood, faced with iron, and pushed on by one of the skaters. There are also boats, ten or fifteen feet long, placed on large skates, and fitted up with masts and sails. The celerity with which these boats are driven forward exceeds imagination; and it may be said they equal the rapid flight of a bird. They go three miles in less than a quarter of an hour." The Frieslanders, we have already said, are excellent skaters. One has been known to go at the rate of fifteen miles an hour, and to continue it for a long time. We were ourselves told by a lady, that an officer of her acquaintance skated from Montreal to Quebec in one day; and when we consider the state of the ice, such as it is on very large rivers, the performance was surprising. It is related, that in 1808 two young women, in a prize skating race at Groningen, went thirty miles in two hours. A Lincolnshire man also, for a wager of a hundred guineas, is said to have skated a mile within two seconds of three minutes.

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SKATE.

466. *Skating is practised in England principally, but not wholly, as a pastime.* In the countries we have alluded to it forms, at particular times, the only means of transit from

place to place; and in the midland counties of England, as will be shown, it is occasionally so employed. Without skates trade must, in northern countries, be altogether suspended, and locomotion also nearly destroyed. In Holland, not only men and women skate, but even children, of five and six years old, are seen skimming over the icy plain. Provisions are carried on the ice with astonishing dispatch by skating; and surprising distances are passed over without fatigue by these habitual sliders. We were ourselves informed there, that the Amsterdam market was principally supplied with eggs, brought by female skaters in baskets on their heads, from remote towns and villages. (See *fig.* 93., where, in the distance, may be seen a female skater with a basket of eggs on her head.)

467. *Skating*, although unquestionably a much more early practice among us, is first noticed in the description of London by Fitzstephen, who relates that, "When the great fenne, or moor (which watereth the walles of the citie on the north side), is frozen, many young men play upon the yce." Again, "Some stryding as wide as they may, doe slide swiftly; asome tye bones to their feete, and under their heeles, and shoving themselves by a little picked staffe, doe slide as swiftly as a birde flyeth in the air, or an arrow out of a crosse-bow." Here, although the implements were rude, we have *skating*. It seems that one of their sports was, for two to start a great way off opposite to each other, and when they met, to lift their poles and strike each other, when one or both fell, and were carried to a distance from each other by the celerity of their motion. Of the present wooden skates shod with iron, there is no doubt we obtained a knowledge from Holland.

468. *The form of the skate, and the quality of the steel it is made of*, are very important matters to the safety and progress of the skater. Walker says, — "The wood part of the skate should be slightly hollowed, so as to adapt it to the ball of the foot; and, as the heel of the boot must be thick enough to admit the peg, it may be well to lower the wood of the skate corresponding to the heel, so as to permit the foot to regain that degree of horizontal position which it would otherwise lose by the height of the heel; for, the more of the foot that is in contact with the skate, the more firmly will the two be attached. As the tread of the skate should correspond as nearly as possible with that of the foot, the wood of the skate should be of the same length as the boot or shoe." Mr. Walker might have added also that, when the wood of the skate projects beyond the sole of the shoe, either before or behind, it retards the skater's progress by a feeling of insecurity, and by a want of that mechanical adaptation of the parts necessary to constitute one solid pillar; a defect in which is more important both to safety and to rapidity of progression than many may be aware of. Mr. Walker says, — "The iron should pass beyond the screw at the heel, nearly as far as the wood itself; but the bows of the iron should not project much beyond the wood. If the skate project much beyond the wood, the whole foot, and more especially its hind part, must be raised considerably from the ice when the front or bow of the skate is brought to bear upon it; and, as the skater depends upon this part for the power of his stroke, it is evident that such power must be much lessened by the general distance of the foot from the ice. In short, if the skate be too long, the stroke will be feeble, and the back of the leg painfully cramped; if it be too short, the footing will be proportionally unsteady and tottering. As the position of the person in the act of skating is never vertical, and is sometimes very much inclined, and as considerable exertion of the muscles of the leg is requisite to keep the ankle stiff, this can be relieved by less elevation in the skates. Seeing then, that the closer the foot is to the ice, the less is the strain on the ankle, it is clear that the foot ought to be brought as near to the ice as possible, without danger of bringing the sole of the shoe in contact with it, while traversing on the edge of the skate." (*Walker's Manly Exercises*, p. 30.) Captain Clias observes, that the skates which are used in the north are grooved, and have two edges. This form may be useful, because it hinders the foot from slipping, when it gives the impulse. However, those who are accustomed to skates, whose irons have a plain face, will go with as much security, and even faster, than those which have others. Mr. Walker, likewise, is not favourable to the grooved or fluted skates, and observes, "That such are only proper for boys, or very light persons, whose weight is not sufficient to catch the ice in a hard frost. The fluting," he says, "sometimes collects and consolidates, which raises the foot from the edge of the skate, and occasions falls." He also further adds, — "In the general inclination of the foot in skating, no edge can have greater power than that of the rectangular shape; the tendency of its action is downwards, cutting through, rather than sliding on the surface; and greater hold than this is unnecessary." The irons of skates he directs to be kept well and sharply ground, which should be done across a stone, "so as to give the bottom of the skate so slight a concavity as to be imperceptible (we presume he means to the eye and touch, but not to fact); which insures an edge, whose angle is not greater than a right." A skate, when placed on a level surface, should stand perpendicular, and every skate should be thus tried.

469. *The bottom of the skate iron* Mr. Walker recommends to be a litle curved; for, if perfectly straight, it will only describe a straight line, whereas the skater's progress must be circular; because, in order to bring the edge to bear, the body must be inclined, and inclination can be preserved only in circular motion. The curve of the iron should be part of a circle whose radius is about two feet. That shape enables the skater to turn his toe or heel

outwards or inwards with facility. It is of some consequence, also, that the hole, bored in the heel of the boot or shoe, should be only of sufficient size to admit the skate-peg tightly, otherwise its hold will not be firm, but liable to a partial displacement, which, for reasons already assigned, is unfavourable to good skating. The boot or shoe heel should not be higher than is necessary to receive the skate-peg; the high heels, worn by some of the fashionables of the present day, give a false ground to the placing of the foot, which must disturb some of the harmony of progression, and the propulsive force of the action.

470. *Skates are fastened on the feet by means of two straps* (*fig.* 93., p. 138.); the cross strap passes over the toe and the heel strap, as seen in the cut. Mr. Walker hints that, good as these strappings are, the method might probably be improved by passing one strap through the three bores, and so make it serve for both. He also observes that, "Before going on the ice, the young skater must learn to tie on the skates, and may also learn to walk with them easily in a room, balancing alternately on each foot," which we strongly recommend, as being personally aware how much it facilitates the initiation of the young skater.

471. "*The practice of skating*," Captain Clias remarks with much truth, "requires that those who wish to be proficients should begin at an early period of life, and endeavour to throw off the fear which always attends the commencement of an apparently hazardous amusement. The beginner, however, though fearless, must not be violent. He will probably, on his first essay, scramble about for a little while; during which he must not let his feet get apart, and must even more carefully keep his heels together. He must also keep the ankle of the foot on the ice quite firm; neither should he attempt to gain the edge of the skate by bending, as is too commonly done. The only right mode of getting to either edge, is by the inclination of the whole body in the direction required (*fig.* 94.). The leg which is on the ice should be kept perfectly straight; that which is off the ice should also be kept straight, though not stiff, the toe pointing downwards, and the heel about twelve inches from the other. Look at neither ice nor feet to see how they perform; keep the body and the face rather elevated. When once off, bring both feet up together, and strike again when steady; but do not, in these early practisings, allow both feet to be on the ice together. As the legs are raised, so must be the arms, but contrariwise, so that the arm and leg of the same side be not raised together." It is further observed, that "Young practitioners will soon acquire a facility of moving on the inside; and that, when they have done this, they must endeavour to acquire the movement on the outside of the skates; which is nothing more than throwing themselves upon the outer edge of the skate, and making the balance of their body tend towards that side, which will necessarily enable them to form a semicircle. In this much assistance may be derived from placing a bag of lead shot in the pocket next to the foot employed in making the outside stroke, which will produce an artificial poise of the body, which afterwards will become natural by practice. At the commencement of the outside stroke, the knee of the employed limb should be a little bended, and gradually brought to a rectilinear position when the stroke is completed. When the practitioner becomes expert in forming a semicircle with both feet, he is then to join them together, and proceed progressively and alternately with both feet, which will carry him forward with a graceful movement. Care should be taken to use very little muscular exertion, for the impelling motion should proceed from the mechanical impulse of the body, thrown into such a position as to regulate the impulse. At taking the outside stroke the body ought to be thrown forward easily, the unemployed limb kept in a direct line with the body, and the face and the eyes looking directly forward; the unemployed foot ought to be stretched towards the ice, with the toes in a direct line with the leg. In the time of making the curve, the body must be gradually and almost imperceptibly raised, and the unemployed limb brought in the same manner forward; so that, at finishing the curve, the body will bend a small degree backward, and the unemployed foot will be about two inches before the other, ready to embrace the ice and form a correspondent curve. The muscular movement of the whole body must correspond with the movement of the skate, and should be regulated so as to be almost imperceptible to the spectators. Particular attention should be paid in carrying round the head and eyes with a regular and imperceptible motion; for nothing so much diminishes the grace and elegance of skating as sudden jerks and exertions, which are too frequently used by the generality of skaters. The management of the arms likewise deserves attention. There is no mode of disposing of them more gracefully in skating outside, than folding the hands into each other, or using a muff. There are many feats of activity and manœuvres practised upon skates, but they are so various that we cannot detail them. Moving on the outside is the primary object for a skater to

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SKATING.

attain; and, when he becomes an adept in that, he will easily acquire a facility in executing other branches of the art." (*Clias's Gymnastics.*)

472. *Figure skating* is unquestionably a most elegant accomplishment; and, though the more temperate climate of Britain does not afford all the opportunities of practising it which some other countries offer, yet we have heard foreigners laud the performances of our skaters on the Serpentine in Hyde Park, as equal to any they had ever seen in Germany, &c., &c. We shall draw our superficial sketch of figure skating principally from Mr. Walker's *Manly Exercises*, strongly recommending the skater to refer to the original, which is copious, clear, and illustrative. The forward roll, or outside edge, is usually the first step in figure skating. (See *fig.* 94.) The object to be attained is, upon the ordinary impulse of the run, to get on the outside edge of the right foot; and, the moment that foot is in motion, the skater should advance the left shoulder, bringing in succession the left foot past the inside of the right, with a slight jerk, to produce an opposing balance of the body; now press the right foot first on the outside of the heel, then on the inside, or its toe; place the left foot before it; now pushing forcibly with the outside of the right toe, the skater passes from the right to the left, as he did before from the left to the right.

473. *The Dutch travelling roll* is operated on the outside edge forward in a similar manner, except that a small segment of a very large circle is to be described, by diverging from the straight line no more than is required to keep the skate on its edge.

474. *The cross roll, or figure* 8, is also operated on the outside edge forward, and is effected by crossing the legs, and striking from the outside instead of the inside edge. Here the skater, just at the finishing of the circular stroke made by his right leg, must pass the left across it, which forces him to press on the outside of the right skate, from which he must immediately strike, at the same time throwing back the left arm, and inclining his head over the left shoulder, to bring him well upon the outside of that skate. When both legs have traversed in this manner, the figure 8 will be formed. There are variations of the foregoing movements which form the figure 3, or inside edge backwards, and the outside edge backwards. By the back roll is understood the means of moving from one foot, as the back cross roll signifies, by changing the balance of the body to move from one foot to the other, in the same manner as for the backward roll. Thus, it may be said, in the words of Mr. Walker, that the foregoing "are the four movements of which alone the skate is capable; namely, the inside edge forward, the outside forward, the inside back, and the outside back; in which has been seen how the impulse for the first two is gained, and how the third flows from the second, and the fourth from the third. By the combination of these elements of skating, and by the variations with which they succeed each other, are formed all the evolutions in this art." (*Manly Exercises*, p. 41.)

475. *Skating, in a commercial point of view*, we have barely glanced at; but, ere we close our account of this locomotion, we must, in justice to its claims, observe, that it is not in Holland, Germany, Russia, and America only, that it is used as a grand agent, both of personal communication between distant localities, and of transmitting the necessaries of life from place to place. On the contrary, in the fenny districts of Lincoln, Huntingdon, and Cambridge shires, &c., when the vast floodings have become frozen, and left only a broad expanse of ice, far as the eye can reach, it is equally available, and almost as usefully employed as in northern climes. At such times, when not only all means of conveying the products of life from one locality to another, but also those of personal transit, are extremely difficult to command, then it is that the skate is called into requisition, and the wearers set off at railway speed from one town to another, either on business or for pleasure; and, ere they return, have probably accomplished fifty or sixty miles with little fatigue; and, when pressed for time, have done it in a very few hours. Some of them have been known to skate forty miles considerably within three hours. Nor is this all; on the contrary, being skate-mounted, the traders are able, and often are seen, to push before them small sledges, or boat-shaped lockers, laden with wares of every description, from town to town; such are the advantages of skating in England also. (See a very interesting account of the value and importance of this practice to the inhabitants of these localities, in the *New Sporting Magazine*, No. lxxxiii.)

Chap. V.

The Ancient and Modern Archery of Great Britain.

476. *The bow and arrow* (*fig.* 95.) has an especial call on our attention, whether we regard ourselves as philosophers or as sportsmen—whether as antiquarians or modern observers of the present day; for it occupies a prominent place in the page of ancient history, and abounds in supplies for eloquent declamation in the description of scenes of glowing interest in our own times. When we retrograde up the stream of time, each step we take presents new proofs of its former universality and importance; and our return exhibits it at the present moment as an elegant amusement, combining the energies and rivalry of both sexes. It is also subsidiary to the sportsman's amusement of the present day. It is used in rook shooting, and we have seen it sportively employed, both by young and mature archers, against swallows on chimney and house-tops. Bows with blunt-headed arrows are also often used by naturalists in the capture of small birds and beasts; particularly when they wish to avoid breaking the skin, or soiling the feathers, of the animal they wish to capture.

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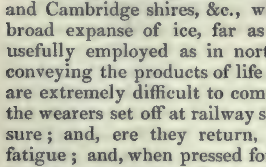

CROSS-BOW MAN.

Sect. I. *The History of Archery.*

477. *The discoverers of every new country have found the inhabitants in possession of the bow and arrow*, and that equally, whether they have been entirely rude, or somewhat ad-

vanced in the arts. Columbus found it in America, and Vasco de Gama in India. The Amazons opposed the landing of the Spaniards with their bows; and the discovery of the icy regions exhibited the savage as subsisting wholly by his skill in archery. In Britain, also, there was a time when we might say with Camden that, "amongst all the English artillery, archery challengeth the pre-eminency, as peculiar to our nation, as the *sarissa* was to the Macedonians, the *gesa* to the old Gauls, the *framea* to the Germans, the *machœra* to the Greeks; first showed to the English by the Danes, brought in by the Normans, and continued by their successors, to the great glory of England, in achieving victories."

478. *The earliest notice of archery*, derived from sacred writ, appears in the account of Hagar, who, in her distress, left her child Ishmael, "and went and sat down over against him a good way off, as it were a *bow-shot*, for she said, let me not see the death of the child." (*Gen.* xxi. 16.) Strutt has copied from a Saxon MS. (see *fig.* 3., p. 5.) Esau going to seek venison for his father; and of Ishmael, when residing in the desert, after his expulsion from the house of Abraham. It is somewhat remarkable, that several writers should state, that the contents of the 20th verse, where it is said that Ishmael "dwelt in the wilderness and became an archer," forms the *first* biblical notice of the use of a bow. Surely the mention of the term *bow-shot*, in the 16th verse, as a familiar measurement of distance, is sufficiently specific, and warrants the conclusion that the use of the bow was, at that time, by no means in its infancy, when its power was used as an ordinary computation of space. Notices of archery are of frequent occurrence throughout the Jewish history, more particularly in the histories of the wars of this people; and from other sources also, as from Josephus, we learn that the use of the bow throughout the Holy Land was very general, it being considered the most effective weapon then known. The archery of Jonathan is specially referred to in Holy Writ; and the bow and arrow were then, as indeed down to the time of the employment of gunpowder in warfare, used against an enemy by nations in all stages of civilisation. In our day the bow is banished from European warfare, and the cross-bow (*fig.* 95.) is little more than a toy, though the name *arbalestier*, or *arbaletrier*, signifying a cross-bow man, is still retained in some European armies.

479. *Soothsayers and astrologers were used to practise divination by means of the arrow flight;* and wherever superstition creeps in, the more active efforts of man are blunted by deceptive reliances. The Jews being too apt to believe in these fallacies, might therefore have neglected their manipulation. The ancients appear to have principally relied on their archers when they were interspersed among the other combatants; for, thus sheltered, they could take a deliberate aim against the enemy. This appears to have been particularly the practice with the Persians and Greeks, and with the Scythians also, who are said to have excelled all other nations in the use of the bow at one period; subsequently the archers formed the light-armed troops, which were rather skirmishers than effective bodies. The bowmen were nevertheless, on most occasions, powerful aids in battle; and the victories which the Athenians gained over the Lacedæmonians, particularly that in the vicinity of Pylos, were principally attributed to their skill; and in the Roman wars the archers were often placed in the front, which shows how much was expected of them as effective troops. Athens was wholly guarded by archers; and, in the age of Scipio Africanus, great dependence was placed on the bowmen in the Numantian contest. It is even affirmed by historians, that the successes of Tiberius over Ignominius and Arminius were principally occasioned by the able assistance of the equestrian and pedestrian archers. The Goths, Huns, and Vandals, were celebrated for their skill in archery; and, although the early British archery might have been improved after the Saxon conquest, there are circumstances that point to a knowledge of it prior to this epoch.

Subsect. I. *The Bows and Arrows of the Ancients.*

480. *The origin of the bow in profane history is disputed.* Mythological tradition has referred its invention to many different personages; for which, and other reasons, we may conclude that it cannot, in reality, be attributed to any particular individual, but that the natural wants and observation of man would suggest its formation and employment in different climes simultaneously. It appears certain that the Grecians first gained their knowledge of the bow from the Scythians, although they did not continue the manufacture of theirs after the original model; for it is observed of the Scythian bow, that it almost approached to a semicircle, whereas the Grecian bow (*fig.* 96.) made several inflections, and was shaped after their letter Σ. The Arabian bow was long, crooked, and flexible; the Indian was also long, but less flexible; and much straighter. It is recorded that the bow of the Lycians was made of the cornel tree; the Ethiopians made theirs of the palm tree; that of the Laplanders, who are still famed for their dexterity in the use of this instrument against beasts of the field, is said to be not usually formed of one, but of two pieces, which being glued together with a cement made from fish skins, but particularly from those of perch, gives it an extreme degree of tenacity. We believe that this method

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has been employed in the manufacture of English bows also; and we can suppose the strength gained to be very great by what we know of the powers of the *tree* of the saddle, which is framed of several distinct wooden pieces glued accurately together. The ancient Canadian bows, we are informed, were most of them made by the apposition of three pieces of either pine or larch. These pieces were applied to each other by bands made of the tendons of the reindeer, which, having been first wetted and relaxed, and again contracted, gave to the separate portions all the strength of a solid, with the elasticity of distinct parts. The bowstring (τριχωσις), among the ancients, was principally formed of thongs cut from the hides of beasts, and were called τοξα βοεια; others, made from horse hair, were named ουππεια. The uppermost part of the bow, which received the bowstring, was termed κορωνη. We may also observe that the Grecian bows were remarkable for their ornaments, but principally for their golden trappings.

481. *The arrows used in early times were even more varied in their composition than the bow.* Some were of reed, many were formed from different woods, others of cane, and a few were fashioned out of bone. The winging was mostly of feathers, which was sometimes carried spirally around the arrow, instead of longitudinally, which gave it a circular motion in its flight, and was supposed thereby to increase the certainty of the aim of the archer. Arrows were also blunt or pointed, according to their intention: thus, when small animals were hunted, as sable, &c., whose skins were very valuable, the blunt arrow preserved the hide from penetration, although it secured the animal. The heading was of bone, horn, or iron, and occasionally of stone, and it was usually sharpened at the extremity. We have, however, seen several with a mere knobbing of compact serpentaria.

482. *The ancient British bows were fashioned after the Saxon model* (*fig.* 97.), and were made, as we are told, of elm, hazel, or yew. The arrow was mostly of fir, which in its rudest manufacture was pointed, and then hardened with a tipping of bone, flint, iron, or steel; and, as the arts progressed, these arrows were seen barbed. They were usually winged with the pinion feathers of geese, which, in the middle ages, the sheriffs of counties were ordered to collect, to the number of six from every goose; and to this day no feathering is equal to that furnished by either the white or grey goose: at one time we ourselves used none but the grey.

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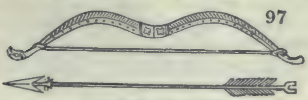

SAXON BOW AND ARROW.

483. *In the use of the bow and arrow*, the ancients of different nations employed different attitudes and methods of practice. David's archers, we are told, "could use both the right hand and the left in hurling stones and shooting arrows out of a bow." (1 *Chron.* xii. 2.) This ambi-dexterity must have given them a decided advantage over those who could use only one front. The ancients mostly drew their arrow towards the right breast, the Persians alone practising the method of drawing it to the right ear. Some of the Indians use the bow, while swimming, with great ease; and the Mamelukes mostly shoot their arrows on horseback. The Egyptians, as we may judge by their sculptures, drew their arrow behind them. The Parthians differed from other archers in their method of using the bow offensively, inasmuch as they always kept up a running fight, discharging their arrows in their retreat. Thus we say, "He fights flying, like a Parthian." Of the deadly feats of the bow, fabulous history offers numerous instances. Cephalus mistook his wife for a wild beast, and shot her. Hercules discharged his arrow with deadly aim against Nessus, for attempting to run away with his wife Dejanira. Achilles received his death-wound from an arrow shot by Paris, the son of old Priam.

484. *Of the use of the bow in the early field sports of different nations*, history offers innumerable notices. The Brazilians, when discovered by Cabral, must have used excellent bows, for their arrows, being merely pointed with fishbone, penetrated the thickest boards. Archery formed, as is well known, an appendage to the chase in Greece, and was equally esteemed among the Roman hunters. Commodus, as we are told, had a vast number of lions shut up in dens, which being all opened at one time, there issued out a hundred of these monsters, every one of which he killed with his arrows. Domitian, as we know, was an ardent sportsman; and, if the following account be true, he could have been no other than a most excellent marksman. At his seat at Alba, it is recorded that he had been seen to plant an arrow in the side of the head of some beast, when immediately discharging another, he has purposely fixed it on the opposite side of the head, so as to give the animal the appearance of being horned. Heliogabalus also must have been a marksman of no mean fame, for we are told that he could cut off the heads of ostriches as they ran past him, with arrows formed for the express purpose of cutting. The Indian savages are some of them so expert as to kill birds on the wing; but when this is done, it must in general be the effect of a chance shot; for, unless the arrow came directly from behind, it is more than probable that the bird would evade it, however true the aim. The Egyptian and Arabian archery has long been famed. At a display made before the Turkish ambassador, Baumgarten relates, that "There were sixty thousand Mamelukes assembled in a spacious plain, in which were three heaps of sand, fifty paces distant, and in each a spear was erected with a mark to

shoot at; and the like over opposite them, with space betwixt, sufficient for six horses to run abreast; here the youngest Mamelukes, upon their horses running at full speed, gave wonderful proof of their skill. Some shot arrows backward and forward; others, in the midst of their race, alighted three times, and, their horses still running, remounted again, and hit the mark nevertheless; others hit the same, standing on their horses thus swiftly running; others three times unbent their bows, and thrice again bent them, whilst their horses galloped, and did not miss the mark; neither did others, who, in the middle of their race, alighted down on either side, and again remounted; nor they which, in their swiftest course, leaped and turned themselves backwards on their horses, and then, their horses still running, turned themselves forward. There were some who, while their horses galloped, ungirt them thrice, at each time shooting, then again girting their saddles, and yet never missed the mark. Some sat in their saddles, leaped backwards out of them, and, turning over their heads, settled themselves again in their seats, and shot, as the former, three times; others laid themselves backward on their running horses, and taking their tails, put them in their mouths, and yet took an undeviating aim in shooting: some, after every shot, drew out their swords and flourished them about their heads, and again sheathed them; others sat betwixt three swords on their right, and as many on their left, thinly clothed, so that, without great care, every motion would wound them, yet before and behind them touched the mark. One stood upon two horses, running very swiftly, his feet loose, and shot also at once three arrows before, and again three behind him; another, sitting on a horse, neither bridled nor saddled, as he came at every mark, arose and stood upon his feet, and, on both hands hitting the mark, sat down again three times; a third, sitting on the bare horse, when he came to the mark, lay upon his back, and lifted up his leg, and yet missed not his shot."

485. *Poisoned arrows have long been used by some savage tribes*, but the nature of the composition employed is kept a profound secret; and, in such accounts as profess to give us information on the subject, we have reason to apprehend that conjecture supplies the place of fact. The antiquity and the universality of the practice are both however great. Justin, lib. xii. cap. 6., mentions such arrows as common in the time of Alexander. Virgil, in his ninth Æneid, celebrates Amicus for his expertness in this destructive art. From Pliny we learn that the Gauls also shot poisoned arrows in the hunting of stags; but, as we know that the poisonous ingredients of either the vegetables or minerals of Europe cannot be sufficiently concentrated to produce a quick mortality in this way, we may be allowed to be somewhat sceptical on the subject of any indigenous poison being used on these occasions. It is beyond all doubt that deadly vegetable juices have been so employed; and some of the inhabitants of America are well known to arm their darts and arrows with a powerful poison, prepared, as it is said, from a tree called *mancanilla.* Mr. Waterton, in his *Wanderings in South America*, has been, as he informs us, indefatigable in his attempts to discover the properties and composition of the deadly matter, known to the natives as the *wourali* poison. His account states, that it is obtained from an infusion of the wood of the *wourali* vine, mixed with the juice of a bitter root, the name and character of which he omits. To the strained liquor from the wood there is to be added the juice of two bulbous plants, and a few black and red ants of a venomous nature. When to these several matters a quantity of very powerful pepper is added, nothing more is required than the addition of the fangs of two of the most venomous snakes, the *labarri* and the *counachouhi.* Darts, smeared with this mixture, and blown through a hollow reed, or arrow points touched therewith, are able to kill either man or beast by the smallest puncture. It would have been more satisfactory had Mr. Waterton gained a more complete knowledge of the several ingredients which enter into this mystic composition.

Sect. II. *The Ancient Archery of Great Britain.*

486. *We have already stated our belief* that the bow was common in Britain long before the Saxon era. The Goths, Huns, and Vandals, had acquired much celebrity in archery, as we learn from our earliest records of those invaders, long before Gaul was overrun by them, or that Germany gave us our equally remote ancestors. From these sources, it is self-evident that the bow must have gained a firm and early footing in Britain many centuries before the Saxon invasion, although specific notices on the subject have not reached us. As weapons of the chase, both the long-bow and the cross-bow had their distinct partisans. For a dead aim at a beast, the long-bow seems to have been the most efficient, and to have the greatest range. The *Archaiologia* notices a tradition, that an attorney of Wigan shot his arrow a mile at three flights. It is probable, therefore, it was an arrow shot at a passing stag that killed William Rufus, and not a bolt from a cross-bow; which is the more likely, as some accounts hint that the arrow first struck a tree, and glancing from thence, killed the prince. The Saxons, we know, were expert archers, both in the sporting and the battle-field, and it would seem to have been the aim of William the Conqueror to bring the *arbalest*, or cross-bow, to compete with the British long-bow; although the historians of those times are somewhat silent on the subject of the English bow. The cross-bow also seems to be denied existence among us by Strutt, until the thirteenth century;

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LONG-BOW MAN KNEELING.

whereas, not only were cross-bows known as above, but they must have become familiar in England; for we learn that Rufus, who lived in the eleventh century, finding the string of his *cross-bow* broken, as he was hunting in the New Forest, took it to a *villain* to be mended, when he met with an old woman who told him "he would hereafter be a king," which prediction, we know, was verified; proving herself a better hand at a *guess* than the wisest transatlantic Jonathan. It would have been well for Rufus had the old dame ventured a second prediction, that, if he continued in his reign the spoliation which had been introduced by his father, he should die a violent death in the midst of that waste his tyranny had perpetuated. The English appear to have been so improved by the Danes in their archery, as to have become, perhaps, the most expert bowmen in the world. They beat the Scotch in every trial; and it was the superiority of the British bowmen which first conquered Ireland. An English archer has been known to shoot twelve arrows in a minute, into a circle not larger than a hat; and the cloth-yard shafts of the Cornish archers, at a distance of four hundred and eighty yards, would pierce any ordinary armour. Our limits prevent us following the martial history of archery farther. It declined after the death of Charles II., but revived as a sport with increased splendour throughout every part of England. as will appear by the number of societies that were instituted, many of which exist, and continue their yearly meetings, to this day.

Sect. III. *The Modern Archery of Great Britain.*

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ARCHERY MEETING.

487. *The formation of the Toxophilite Society in London* was the first ostensible proof of the revival of archery (*fig.* 99.). It has been said that Sir Ashton Lever was principally instrumental in organising this association. It is however well known, that it was first established in 1781, at Leicester House (then standing in Leicester-fields), at the time Sir Ashton Lever showed his *museum* there; and the society then, and for many years afterwards, held their meetings in Bloomsbury-fields, behind the spot where Gower-street now stands. About twenty-five years afterwards they removed their meetings, or "target days," to Highbury Barn, and from thence to Bayswater. Some years ago the Woodmen of Arden, the Toxophilites, and the Society of Archers, were incorporated into one body. Most counties now have their archery meetings, which come in in good aid, between the close of the hunting and the beginning of the shooting season.

488. *The Royal Artillery Company of London* owe their origin to the following circumstance: —"After the destruction of the Spanish Armada, fears being entertained lest the king of Spain should (out of revenge) send an emissary to attempt the life of Queen Elizabeth, a number of noblemen of the court formed themselves into a body-guard for the protection of her person; and, under the denomination of the 'Companie of Liege Bowmen of the Queene,' had many privileges conferred upon them. The famous Dudley, earl of Leicester, was captain of this company, which was distinguished by the splendour of its uniform and accoutrements. Upon the accession of James the First, the company was disbanded, although those who composed it retained the privileges which had been conferred upon them by Elizabeth. Upon the breaking out of the civil wars, Charles re-organised this body-guard, which attended him against the parliamentary forces, and afterwards emigrated with Charles the Second. At the Restoration this company was maintained, and, under the title of the 'Royal Company of Archers,' received a new charter; and from this originated the present 'Royal Artillery Company.'"

489. *The Royal Company of Archers of Scotland* are said to owe their origin to the commissioners who were originally appointed by James to superintend and regulate the exercise of archery throughout the kingdom. At present they form a most numerous and respectable body. "The uniform of the company is tartan, lined with white, and trimmed with green and white fringes; a white sash, with green tassels, and a blue bonnet, with St. Andrew's feather and cross. They have also two standards, on one of which is inscribed, *Nemo me impunè lacessit;* on the other, *Dulce pro patriâ periculum.*"

Subsect. 1. *The Mechanics of Archery.*

490. *The olden mechanism of the bow* embraces the long-bow (*fig.* 98.), and the cross-bow (*fig.* 95.). The arbalest, or ancient cross-bow (*fig.* 100.), was not only much shorter than the long-bow, but was fastened on a stock, and was discharged by means of a trigger. The cross-bow is said by some writers to be of Italian origin. Verstegan says it was introduced here by the Saxons, but was neglected until again brought into use by William the Conqueror, at the battle of Hastings. No mention is made of bowmen among the troops of Harold; but we read that the Norman army was fronted by "footmen clothed in light armour, worn over a gilted cassock, and bearing either long-bows or steel cross-bows." Harold himself had his eye struck by an arrow, notwithstanding which he continued to fight at the head of his army.

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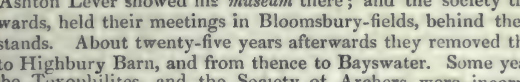

ARBALEST.

491. *Cross-bows* were afterwards prohibited by the second Lateran Council, A.D. 1139, as hateful to God, and unfit to be used among Christians; in consequence whereof they were laid aside till the reign of Richard the First, who again introduced them, and was himself killed by an arrow, or quarrel, discharged from a cross-bow, at the siege of the castle of Chalus. Cross-bows discharged darts, which were called *quarrels*, or *qarreaux*, or *quadrels*, and in English *bolts:* they were headed with solid square pyramids of iron, and sometimes trimmed with brass instead of feathers. According to Sir John Smith, a cross-bow would kill, point-blank, sixty yards; and, if elevated, above one hundred and sixty. In these instruments the impulse is not communicated to the arrow directly by the string, but by means of a moveable iron bridge placed behind the string. An entire figure of the arbalest with the distinct portions is appended. It may be added that the *cross-bow* was called a *steel-bow*, because the horns were usually made with steel; and others were called *stone-bows*, because they were modified to the purpose of discharging stones. The cross-bow makers used to exercise themselves in shooting at the popinjay, or artificial parrot, in a field called Tassal-close in London, from the number of thistles growing there, now called the Old Artillery Ground. On the cross-bow, or arbalest, we may remark, that its great merit consists in the exactness of its point-blank shooting, which is certainly greater than that with the long-bow: but it must be confessed that it cannot effect so many shots in a given space of time.

Subsect. 2. *The Modern Cross-bow.*

492. *The modern cross-bow (fig.* 101.) is sufficiently known to most sportsmen. It is now much simplified and improved, and is adapted to carry bullets, from which circumstance it is often called the bullet-bow. It can now be loaded and discharged with much ease and quickness, while the apparatus at present employed for new stringing, the requisite quantity of bullets, spare screws, &c., are both less weighty and less cumbrous than the musket and appendages. The cross-bow also, when regulated, will throw a ball with immense force and unerring certainty, provided the bow be truly set and the distance moderate. Mr. Braggs, of Holborn, we believe to be equally celebrated for his cross-bows as for his rifles.

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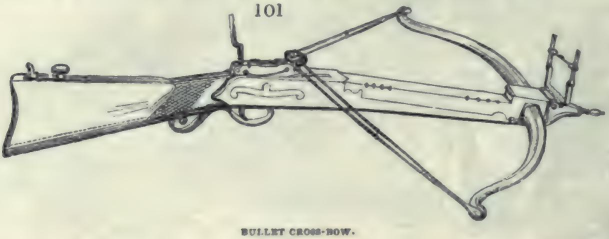

BULLET CROSS-BOW.

493. *Directions for the use of the cross-bow:* — "When shooting where the trees are lofty," says Mr. Daniel, "try the bow at fourteen yards upon a level, stopping all the holes in the sight but one; if it shoots too high, raise the bead higher on the fork; if too low, the contrary: should it carry to the right, turn the bead round to the right; if to the left, the contrary. When the ball does not come within the notches of the fork, open another hole in the sight; if it shoots too high, open one lower; if too low, the reverse. Should the spring within the lock happen to fail, take care to place the open part of the new one toward the butt end of the bow; if it be put in the wrong end forward, the bow will be useless. Never keep the bow long in full tension, rather shoot the ball waste. If the string frets or unravels, close up the defective places with bees' wax. Care is necessary to hold the bow steady in charging; if let slip whilst drawing up the string, it will assuredly break the stock, and probably the lath and string at the same time." In rook shooting, the cross-bow has some advantages over both the air-gun and the fowling-piece. The latter injures the ears of many persons, and after fourteen or fifteen shots is apt to recoil, and sometimes to hang fire. The former, if the air be greatly condensed, is not without danger, and the pumping apparatus, which it is commonly necessary to carry with it, renders it inconvenient in many cases. The cross-bow is not only known as the *bullet-bow*, in opposition to its primitive intention of discharging arrows and quarrels, but is by many known as the *pellet-bow*, from being charged not with iron or with leaden or iron bullets, but with *pellets* made of adhesive clay, which, being incorporated with a moderate proportion of oil, and dried very slowly, answer the purpose well.

Subsect. 3. *The Modern Long-bow and Arrow.*

494. "*The modern long-bow*" (see *Archery Scene*, p. 145.), says a clever writer in the *New Sporting Magazine*, "owns two varieties, self-bows and back-bows. Self-bows are composed of one entire piece of wood, and were the only kind used in England until the commencement of the seventeenth century. Previously our bows were made of foreign yew, imported into England from Venice, our own being found too knotty and less elastic, or *quick of cast*, than that grown in warmer climates. The relative value of the two sorts of yew may be ascertained from a statute of Elizabeth, which regulates the price of bows, and enacts that, when a bow of English yew is sold for two shillings, one of foreign yew may be sold for six shillings and eight pence." When the universal use of the gun had almost banished the

bow, the importation of foreign yew was in a great measure dropped, and our native yew was employed instead. The bows, however, so manufactured were by no means equal to those made of the yew of Italy. Acting on the experience, and on the artifice also, of less enlightened nations, our artists then invented the *backed-bows*, which are formed by two different woods, that which makes the principal portion being of a wood essentially elastic, having a slip of ash or some other tough wood glued to it.

495. *Bows are manufactured of various lengths*, and it is essential that the length should be adapted to the power to be applied in drawing them. Ladies' bows are in general about five feet long; but for men bows are made from five feet six inches to five feet ten, according to their strength. Edward the Fourth commanded every military archer to use a bow of his own height; and there was much judgment shown in such a regulation.

496. *The strength of a bow* is sometimes calculated on the principle that its spring (that is, the power whereby it regains its natural position) is always proportioned to the extent of the space it is removed from that position, which is in general cases a fair experiment; or, in other words, as an ingenious writer expresses it, "the number of pounds' weight it takes, when suspended to the bowstring, to draw the bow down to the length of the arrow, is usually marked immediately over the handle. Fifty pounds is the standard weight; and to draw a bow of sixty pounds requires more than an ordinary degree of strength: ladies' bows draw at a resistance of from two pounds to thirty." Another writer ascertains the strength of the bow after the following method:—"The bow being strung, is placed horizontally on a ledge; a scale is hooked on the string, in which weights are put, and that quantity, which bears the string down till it is the length of an arrow from the bow, is its weight. Thus a man, according to the bow he can pull, may judge of his own strength Fifty-four pounds is the standard weight of a bow; and he who can draw one of sixty, with ease, as his regular shooting bow, may reckon himself a strong man; though a great many archers can draw one of seventy and eighty pounds, and some ninety, but they are very few." The bow handle is usually garnished with velvet or worsted lace, from five to seven inches, to render the bow both soft and firm: but it will be observed that this handle is not exactly in the centre of the bow, but below it, so as to shorten the lower branch; the strain on which branch being consequently greater when strung than that on the upper, requires compensation to prevent fracture; this lower branch is therefore made somewhat stouter than the other in all well formed bows. The two extremities of the bow are furnished with notches in the horn tippings, to receive the eyes of the bowstring. The upper extremity is usually a little curved; but there is much fancy in the finish of bows, as well as in that of most fancy articles.

497. "*The bowstrings of the present day* are generally made of Italian hemp, very strongly twisted, and dressed afterwards with gum or Indian glue, to preserve them from wet. The distance of the string from the centre should not, in a bow five feet long, exceed five inches, and, in the longest bow, not more than six inches, nor less than five and a half."

498. "*An arrow, or shaft*," in the language of the bow-maker, "has three principal parts — the *stele*, the *head* or *pile*, and the *feather*. The stele is, in fact, the arrow itself, and the term is seldom used except in treatises where it is necessary to be precise and technical. Steles then, or arrows, are made of different sorts of wood, according to the distances and kinds of shooting in which they are to be used; for *roving* they are made much heavier, and for *flight-shooting* much lighter, than others. The woods chiefly used at present are deal and asp for light, and lime for heavy shafts. Much attention should be paid to the weight of arrows, which ought to vary with the distances at which they are to be used, those intended for the same distance being as nearly alike as possible. Arrows are sometimes weighed against silver (in coin) at the Mint standard, and are chosen for different distances according to their weight. The following is the scale given by Mr. Roberts: —

	s.	*d.*		*s.*	*d.*
For 30 yards' distance, from about	4	0	to	6	0
60 - - -	3	6	-	5	6
90 120 } - -	3	0	-	4	6

To this scale Mr. Waring (the best modern authority on the subject) does not appear to attach much faith. He states that "Arrows should always be selected according to the strength of the bow, upon which, and upon the quickness of its cast, the method of drawing and loosing, and various other causes, so much depend, that no positive scale or table can be laid down. Observation, he adds, and practice will avail more than any rule that can be offered. The length of the arrow is regulated by that of the bow. For bows of five feet, arrows of twenty-four inches are generally used; under five feet nine inches, those of about twenty-seven inches; and longer than five feet nine inches, arrows of twenty-eight, twenty-nine, and sometimes, but very rarely, of thirty inches. We read, indeed, of arrows of a *cloth yard*, and an ell in length; but these measures could not be such as are now in use, or our ancestors must have greatly supassed the men of these degenerate days, both in strength and length of arm. Arrows vary in form, more perhaps from whim and opinion, than from the advantages attending any particular shape; for, if they be well rounded, it matters little whether they are 'high chested,' or 'small breasted,' or 'tapered.' Some are made thickest directly under the feathers, and taper gradually to the pile; and these are best calculated for distant flights; for short distances, those that are thick at the pile, and slope towards the nock, answer equally well. The nock of the arrow was sometimes made of solid horn, but it is now merely inlaid; it should be as nearly as possible the size of the string, fitting closely, but without requiring force to fix it."

499. "*The feather is one of the most important parts of the arrow*, without which the flight could neither be distant nor steady. Of the three feathers with which every arrow is furnished, one, it will be observed, generally differs from the other two in colour; this is called the *cock feather*, and must always be uppermost on the string, or the others will (as Ascham expresses it), 'run on the bow,' and impede the flight of the shaft. As, however, all the feathers are sometimes of the same colour, the best rule for placing the arrow in the string is, that the feather which is on the horn of the nock, whatever be its colour, is to be considered the cock-feather, and be uppermost or opposite to the side which rests on the bow. Feathers, after they are put upon the arrow are generally covered lightly with gum-water, in order to give them a greater degree of stiffness. The *piles*, or heads of arrows, are made both blunt and sharp. Certain disadvantages, it is said, attend both these shapes, but the only practical one appears to be, that sharp piles penetrate further into the target, and are less easily extracted than blunt ones."

500. "*The bracer is a piece of stout polished leather*, buckled round the bow-arm, to prevent the string hurting it: in form it is generally oval, varying in size according to the method of holding the bow, and the size of the arm."

501. "*The shooting glove consists of three finger-stalls* fastened round the wrist by a button or string, and may be used with or without a glove. It should be made of stout pliable leather."

502. "*The belt and tassel need hardly be described;* the former buckles round the waist, and has the pouch for holding the arrows, intended for present use, fixed to it on the right side, and on the left the tassel for wiping the arrows' heads when drawn from the ground." (See *Waring's and Roberts's Treatises on Archery;* also a well written article on the subject in the *New Sporting Magazine*, No. ii., to which also we are indebted.) It remains to add, that Mr. Waring having ceased to deal in the various articles used in archery, Mr. Freeman, No. 120., Oxford-street, supplies his place; and the sketch (*fig.*102.) having been drawn from his stores, will enable the archer to judge how well he can furnish himself from this source.

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IMPLEMENTS OF ARCHERY.

503. *The modern practice of archery* is well detailed in the following account of that of the Royal Company of Archers of Scotland, who form the king's body-guard for that country. The writer prefaces his account by stating that this body realises most forcibly whatever legendary and classical impressions we possess concerning ancient *bowmen*, as well by their grotesque accoutrements and antique dress, as by the dexterity they exhibit in their achievements. "It is comparatively," he observes, "a very easy matter to hit a stationary mark with a shot from a musket; you level your piece with a firm hand, and take aim along the barrel, and if there be no tremulous motion of the arms or body, and the piece be true, you must generally hit: and yet, let any man take in his hand a rifle, and shoot with a single ball at marks of the dimensions I am about to specify, and he will find it very difficult to outdo the feats of the Scotch archers. The point-blank practice of the body-guard is one hundred feet, at a circle of four inches in diameter. Shooting three arrows, I have seen an archer place the whole in the mark in succession, and have been told that eight arrows out of ten have been shot into this space at that distance. An archer, fresh and in good practice, is generally within two inches of this mark with all his arrows. In the field, or at roving shooting, the distances are one hundred and eighty and two hundred yards, and the mark thirty inches square. The shooting at these distances being at an elevation, it is suprising how near to the mark the arrows fall. It is not deemed good shooting, if they are not placed within a bow length, or six feet, of the centre of the mark. A bow length is cut out by half a bow; half a bow by a foot, when the arrow hits the foot of the target; a foot by a thumb, when it lights between the legs of the target; a thumb by a clout, when the arrow sticks in, or passes through, the target, and clouts are preferable according to their nearness to the centre of the mark. A shaft in the clout, at two hundred yards, is here a very common occurrence, and certainly must be considered a beautiful display of skill."

504. "*There is another field distance*, corresponding to that generally used with us in England, but here employed only by beginners; it is one hundred yards, with a circular mark four feet in diameter. Here no arrow counts that is not in the target; but, at the roving distances, all within three bows are reckoned. These remarks may appear insignificant, if I do not bring to your recollection a few of the circumstances which render the practice of archery so much more difficult than rifle shooting. The field-bow is about sixty pounds' weight; that is, a force of sixty pounds is required to draw the arrow to the head; a resistance of sixty pounds is, therefore, to be overcome by each hand in the act of shooting:

all the muscles of the body are employed in overcoming this resistance; those of arms, shoulders, back, and chest, you will easily conceive to be in immediate requisition, and their greatest power to be exerted; but it may not occur that, if you do not stand very firmly on your legs, the act of drawing the bow from left to right will turn the body round and away from the mark — so necessary is muscular power in the legs, that one, 'who stands upon trifles,' may be drawn off his equilibrium and come to the ground. Archery, therefore, is an exercise of the whole body at the same time. The wind does not sensibly affect a musket shot; but it very much affects the flight of an arrow. The archer has to allow for the wind, and study the currents of air through which his arrow is to pass above his head. There is no looking along the arrow as along the barrel of a musket; the archer fixes his eye and his whole heart upon the mark, and his arrow is directed in the right line, much in the same way as a stone is directed upon an object from the hand; the person throwing a stone not looking to the stone while moving, or being propelled from his hand, but only upon the object to be hit. The pulling of a trigger is as different a thing as possible from the drawing of an arrow by a sharp cord, with a force of sixty pounds; and if you manage this resistance, so that the arrow is drawn a quarter of an inch on either side, it is sure to be a quarter of a furlong wide of the mark; or if, in drawing the arrow, you elevate or depress either hand, or the right elbow, in the moment of quitting, though ever so little, it is sure to be a bad shot; or if, in quitting, the string is not sharply loosened, and at the same time without a jerk, or jarring impulse, it is certain to be a bad shot. Knowing that all these niceties and difficulties must be attended to, you would be as much surprised and pleased, as I have often been, to see the accuracy of the Scottish archers." (*Sporting Annals*, No. xxxiii.)

505. *Of the old publications on archery* may be noted Ascham's *Toxophilus*, 4to. 1545, 1571, 1589; *Discourses concerning the Long Bow*, 4to. London, 1590, by Sir John Smythe, Knight; *A Brief Treatise to prove the Necessitie and Excellence of the Use of Archerie*, by Z. S., 4to. London, 1596; Nead's *Double-armed Man*, 4to. London, 1625; Markham's *Art of Archerie*, 8vo. London, 1634; Wood's *Bowman's Glory*, 8vo. 1682; *Ayme for Finsbury Archers*, 12mo. London, 1628; and *The Ayme for the Archers of St. George's Fields*, 8vo. 1664. Many interesting notices on the subject occur also in the *Archaiologia*. [In a brief Appendix to the present edition of this Encyclopædia, we have given a few hints to tourists and others on the method of preparing for Pedestrian Exercises. See p. 1232.)

PART II.

THE PHILOSOPHY OF FIELD SPORTS.

506. *If philosophy be the knowledge of the reason of things* in opposition to history, which is the bare knowledge of facts — or to mathematics, which is the knowledge of the quantity of things or their measures — then must field sporting be essentially philosophic in cause and effect. Because the beasts of the field being put under the especial control of man, it became as well his duty as his interest to make use of them; and in the exercise of this duty originated field sports, which, thus sanctioned, are moral in principle and philosophic in effect. The animals we follow, even to their destruction, become thereby objects of our attention. We examine their forms, we inquire into their habits; and an accumulation of useful knowledge is the consequence. "The more trivial our recreations," says Horatio Smith, "the more accurately will they often reveal the qualities of the mind, as the lightest feather we can toss up will best determine the direction of the wind. If this be true of an individual, it will be equally applicable to a nation, whose familiar and domestic character we may much better ascertain from their sports, pastimes, and amusements, than from those more prominent and important features to which historians have usually restricted themselves in their delineations. Although toil and sorrow have been entailed upon the bulk of mankind as a considerable portion of their inheritance, we read not of any canon that prohibits a temporary alleviation of these, by means of sports, pastimes, and amusements. These indeed may be said to form a necessary portion of our nature; the constitution both of the human mind and body unfitting them for incessant occupation, and imperatively dictating occasional diversion as an indispensable condition of their healthy exercise."

BOOK I.

THE MORAL CHARACTER OF FIELD SPORTS, AND THE BENEFITS DERIVED FROM THEM.

507. *In this enlightened age* it would appear almost scandalous to assert, that fanaticism still influences the minds of some persons to a conviction that there is even moral turpitude in the pursuit of field sports; and if the number of these be not very great, there are many more who at least think every hour thus spent to be an entire waste of time. Deeply rooted as these prejudices are, could we but insure a candid examination of the matter, we should not despair of convincing both parties that they are in error.

CHAP. I.

The Moral Character of Field Sports.

508. *The moral character of any pursuit* can be best judged by considering its consequences to ourselves, and to those around us. If the pursuit of it injure neither ourselves nor others, it is at least innocent; but if, on the contrary, it can be proved that it is productive of benefit to both, it must then be praiseworthy.

SECT. I. *Field Sports proved to be equally Innocent and Useful.*

509. *That the practice of field sporting is both innocent and useful* we presume may be made evident; and it is only when these rural amusements are followed so unceasingly as to rob us of that time, wealth, and energy, which were given us for other purposes, that the pursuit of them can be censured. It is a homely, but a very just saying, that "it is the abuse and not the use" which alone renders any thing hurtful. The severest moralist must allow that worldly wealth is a desirable possession; but when the miser brings upon himself premature decay, by the extent of his daily toils and nightly speculations to amass riches, which he neither uses himself nor permits others to enjoy, the impartial observer sees in his conduct a flagrant abuse of wealth. Warped by his cupidity, he is poor in the midst of his plenty, and remains fast locked in the embraces of want, that very fiend he supposes himself to be ever flying from. The fanatic, who binds himself to a slavish observance of hourly ceremonies and daily penances, neglectful of those ties which necessarily connect him with the world at large, insults that Being who gave him life that he might be useful to his fellows. It is such monomaniacs alone who will rail against field sports, which we contend are not only innocent but praiseworthy when pursued in moderation.

510. *It is also an abuse of the principles of humanity*, when the sensibilities of many are so morbidly directed as to blame all field sports, because they tend to the destruction of animal life. These mistaken philanthropists would spare the fox, although he nightly preyed on the innocent poultry of the industrious farmer. With such, the hare and the rabbit might ravage the crops, which were to satisfy the wants of the tiller and the demands of the landlord; and the winged game, according to these sentimentalists, ought to be wholly spared until their superabundance endangered him, and destroyed themselves. Neither is this an extreme case; for, strange to say, there are yet well-meaning persons who remain favourers of the Pythagorean doctrines, and advocate a total abstinence from all animal food whatever. In a tract, attributed to the late Soame Jennings, Esq., this absurd tenet is very gravely supported. In our day, the vegetarian *philosophers* (if such they can be deemed) have been organised into a sect, and support a journal advocating their views. Leaving out of the question any controversy on the difference between their theory and practice (for they admit into their diet eggs, milk, and such-like animal products), they may be defied to produce any thing like sound reasoning against the assertion that man is intended to be omnivorous, as is proved by his possessing teeth intended for the rending and mastication of flesh, as well as of vegetable products. And as all violation of nature's laws is attended with certain and corresponding results, we need only to mark the races of India, &c., who abstain from all but vegetable diet, to note a proportionate degradation and enfeeblement in the mental and bodily endowments of the "human form divine." The morbid apostrophes of these well-meaning, but, as we consider, mistaken, apostles of forbearance, scarcely deserve a serious reply; by following their injunctions, the original intentions of nature are attempted to be overturned at the call of a pseudo-humanity; and were their projects fully brought into practice, more cruelty would be committed between the vastly augmented numbers of animals towards each other in one month, than the united sportsmen of every country would occasion in a year. The studious are often loud in their invectives against field sports, as being beneath the dignity of intellectual men. It is very seldom, however, that one of these gentlemen will decline the invitation of the sportsman to his table, or fail to do ample justice to the game he finds there. Lazy sensualists have been heard to characterise the chase as incompatible with the character of a fine gentleman; while many such daily debase themselves to the level of swine by the quantity and quality of their gorgings, and mark each meal with the vices of Heliogabalus.

511. *The dignified characters*, who have proved themselves zealous patrons of rural amusements, sufficiently rebut this charge. Emperors, kings, and princes, from time immemorial, have followed the chase, in all its varieties, with ardour. Even distinguished females innumerable have engaged in them with an avidity hardly inferior to that of our sex. Amongst many others, we may instance Queen Elizabeth, who was daily occupied in them, even in her seventy-seventh year. Sir Robert Walpole, from his youth to his old age, was an ardent sportsman. Sir George Grey is one. Saunderson, the celebrated professor of mathematics, pursued the sports of the field on horseback after his sight had almost failed him. George the Third, than whom no one was more jealous of the dignity

of character, and the fit pursuits of a gentleman, was at the same time a keen sportsman; and certainly he never shone more conspicuously than in the field, where he could show great condescension and urbanity, without any disparagement to his kingly rank. These are but few of the instances which might be brought forward to rescue the pursuit we advocate from any detracting imputation, and we are willing to draw the character they merit from the liberal and candid persons who have well observed the practice of them, their tendencies, and the pretensions of those who follow them with discretion. Sanctioned, as the pursuit of field sports has been, by patriarchal examples innumerable in sacred writ; eulogised, as it is, throughout the pages of profane history, where ample testimony is found to prove that to attain a superior excellence in such practices, was one of the great objects sought by kings, nobles, and philosophers; we repeat that, under these considerations, it must be admitted that our advocacy of field sports is only in accordance with examples which we need not blush to imitate; and that we are fully warranted in considering the pursuit as dignified, intellectual, and virtuous.

512. *Field sports* have also been particularly objected to, as unfitting the mind for the study and practice of religion. But let the well-meaning, though mistaken, zealot, assure himself, that a moderate pursuit of rural amusements would damp none of the ardour of his reverence for his Maker, or his search after heaven. On the contrary, he might learn in the woods and fields to contemplate *God* in his *works* as effectively as he studies him at home in his *word*. Should he doubt this assertion, and yet yield to a belief that these exercises and a religious life are incompatible, we would strongly recommend Walton's *Angler* to his perusal, in which unfeigned piety, benevolence, and all the Christian virtues, shine conspicuous throughout. It is, moreover, particularly to our purpose, to be able to assert that the writings of Walton and the habits of his life were of the same stamp; and that the piety he paints, and the virtues he commends, he practised in an eminent degree. Of his enthusiastic fondness for the art he so ably illustrates, there remain abundant records. (See *Introduction to the Practice of Fishing*, infrà.) Were there any impiety in the practice of the recreations we advocate, our list of ardent sportsmen would not be graced with so many divines, not more eminent for their learning and talent, than for their zeal in the cause of religion and virtue. Bishops have recommended a moderate pursuit of the chase in their works, as useful to both mind and body; and many orthodox preachers of celebrity have licensed them in the pulpit, and furthered them by their example out of it. Even to this day, a *skall*, or general hunt, is announced from the pulpit of the Swedish churches, and the attendance of one male individual from every house is enjoined. The pious Bishop Latimer was especially friendly to field sports, and the rigid Calvin was not their enemy; while Archdeacon Paley, the known champion of Christianity, attributed the delay in the appearance of one of his treatises on the subject "to the fishing season not having yet closed."

Subsect. 1. *Field Sports not necessarily connected with Cruelty.*

513. *Field sports*, by some who do not engage in them, are said to beget a habit of cruelty, and tend to harden the mind against the sufferings of animals. But such a supposition can only be formed by superficial observers, and such as adopt popular opinions wholly on trust. We fearlessly assert that sportsmen are not in the habit of practising any wilful cruelty. To "take, kill, and eat," was a divine command and they do no more. And after a long life spent very much among them of field sports, it is the conscientious opinion of the author, that so far from becoming less humane in their natures and habits by their pursuits, the constant intercourse with animals, and the pleasures they derive from them, invariably tend to the direct contrary effect. The sportsman usually treats his horse and his dog with a fondness not common among other persons. How many there are who, like the late Duke of Cleveland, after the most fatiguing day's sport, will not refresh themselves until they have seen their horses and dogs attended to (*fig.* 103.) To watch the process of well drying the skin of their favourite hunter, and of diffusing equable warmth over his frame by friction; to tempt the delicate appetite with the well mashed malt; or to assist, himself, in horning down gruel, when fatigue has paralysed the digestive faculties; to practise these and other humanities, the sportsman is seen to steal from the festive board again and again after a hunting day. Such occurrences are very common; and, while they fully disprove the charge of cruelty, as connected with field sports, they allow us to remark,

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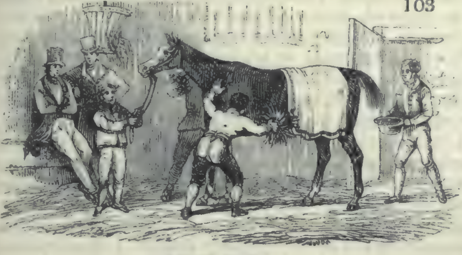

HUMANE SPORTSMAN.

on the general character of the chase, that here the sportsman, like the butcher and the judge, is a necessary and innocent party, although he be employed in the destruction of life. The well known Wharton, the talented historian of English poetry, and a literary zealot, yet advocates the sportsman's pursuits, as being equally free from barbarism and cruelty; on the contrary, he observes, that "The pleasures of the chase seem to have been implanted by nature; and under due regulation, if pursued as a matter of mere relaxation, and not of employment, are by no means incompatible with the modes of polished life."

514. *The pursuit of all noxious animals cannot be impugned;* on the contrary, it is imposed upon us by necessity, and is therefore neither wanton nor cruel. We may instance the fox as one which it is imperatively necessary to pursue to his destruction. His whole habits are marked with rapine, and a mischievous shedding of blood; he will kill any number of animals, when he can carry but one away. Is his destruction not necessary for the welfare of the country in which he marauds? The pursuer, however, does not aggravate the fate the plunderer merits by any wanton infliction of pain. He does not strew poison in his path, and thus heighten his sufferings by torture. He does not stifle him in his subterranean retreat, or entrap him in a gin, that, after the miseries of a night passed with a crushed limb, he may have his brains beaten out in the morning. He is first fairly sought for, and when found is afforded a reasonable chance of escape; should he be overtaken, his life pays the forfeit, but his death is instantaneous, and marked with much less suffering than the protracted miseries which age and decrepitude would inflict on him. The destruction of the hare is equally necessary to the welfare of the farmer, and her death is attended with no more cruelty than that of the fox. Timidity, it is true, drives both, but they contemplate not their fate; and in the efforts they make to avoid it, both in the pursuit and the final catastrophe, pain is greatly benumbed by bodily exertion. It is therefore erroneous to suppose that field sports cannot be pursued without cruelty, or be engaged in without being deaf to the voice of humanity, and callous when it cries for pity on God's creatures: on the contrary, they can be pursued without any offence to rational sympathies.

Chap. II.

The Benefits derived from Field Sports.

515. *The beneficial influences of field sports* may be conveniently divided into such as operate on the mind, and those principally connected with the body.

Sect. I. *The beneficial Effects of Field Sports on the Mind.*

516. *As the pursuit of animals is a divine command,* and the love of the chase is instinctively implanted in our breast, we cannot be injuriously or unworthily employed when we cherish the one, and engage in the other. Latham quaintly but forcibly combats the sinfulness of field sports, and their tendency to debase the mind, maintaining that they may "be lawfully and conscientiously used, with moderation, by a magistrate, or minister, or lawyer, or student, or any other seriously employed, which in any function heat their brains, waste their bodies, weaken their strength, weary their spirits; that, as a means (and blessing from God), by it their decayed strength may be restored, their vital and animal spirits quickened, refreshed, and revived, their health preserved, and they better enabled (as a bow unbended for shooting) to the discharging of such weighty charges as are imposed upon them." The translator of Arrian thus eloquently advocates the innocuous properties of field sports on the mind. The inference in regard to the chases of the field sports generally is surely just, "that man, by co-operating with such animals, employs both his and their faculties on the purposes for which they were partially designed; tending thereby to complete the bounteous scheme of Providence, the happiness and well-being of all its creatures." The difference of opinion on the subject of the chase has arisen entirely from the different lights in which it has been viewed; the one exhibiting its rational use, the other its abuse. "Elle a trouvé autant de censeurs outrés que d'apologistes enthousiastes, parmi les anciens et les modernes, parce qu'elle a été envisagée sous le double rapport de son utilité et de ses abus." (*Encyclopédie Méthodique*, art. Chasses.) Amongst the ancient eulogists of field sports in the Greek language will be found Aristotle, Plato, Xenophon, Polybius, and Julius Pollux; in the Latin, Cicero, Horace, Virgil, Seneca, Pliny, Justin, Symmachus, and others: to which numerous phalanx of classic worthies there is no opponent of authority, save that of Sallust; and of more recent days, Petrarch and Cornelius Agrippa.

Subsect. 1. *Field Sports inimical to Idleness.*

517. *The pursuit of rural amusements* is both a preventive and a cure of idleness, that worst disease which the mind owns; and, in dooming our first parents to obtain food by the sweat of their brow, a great blessing was mingled with the curse. Burton says truly of idleness, that "It is the nurse of naughtiness, step-mother of discipline, the chief author of all mischief, one of the seven deadly sins, and a sole cause of this (melancholy) and many other maladies:" and, as admirably expressed by a sporting writer, "that *strenua inertia,*

that laborious idleness, which is the lot of the man who has nothing to do, soon renders him fit for nothing." The surest corrector of this degraded state, and the most sovereign remedy for this mental paralysis, is to engage the mind in some pursuit congenial with its nature, though it may be foreign to its habits. Mere exercise may employ the body and improve the health, but it will seldom engage the mind: the idle man is not often a naturalist; and in riding or walking, unless the beauties of nature engage his attention, he will not continue either exercise sufficiently to banish idleness. But once engage him in a soul-inspiring run with the hounds, or but once let his own hand bring down a bird, which his own dog has found and stood to; or contrive but to let his own arm, his own rod, line and bait, detach a fish from the waters, and his mental and bodily energies are irrevocably engaged; the pupil is fairly entered; and it is more than probable that he will for ever bid adieu to what may be called the *vis inertiæ* of the soul. Who is there that has not met with a victim of *ennui* in some mercantile or trading character, who, having retired from the fatigues, the cares, and anxieties, of business to the country, fondly hoping that, in escaping from the noise, filth, and stench of a crowded neighbourhood, to a tranquil spot with clear air, that he had shut out every avenue by which vexation could enter? Has he succeeded? On the contrary, it is most probable that he has found himself so miserably disappointed by the satiety of rest, which the absence of the accustomed occupations is sure to bring on, that eventually he buries himself again in those scenes he fled from, and gladly resumes those very cares and anxieties he so lately abandoned. But, in these cases, had the pursuit of rural sports been once entered on, it is more than probable the sad necessity of a return to business would have been prevented. In every season some occupation of this kind might have been found to banish tedium; no hiatus need ever to have presented itself. When a vertical sun compelled a retreat from the fields, or the tempestuous skies debarred any attempt to go forth, the arrangement and repair of the sporting implements might have occupied the attention; and, in the ecstasy of his newly acquired prowess, he could have flourished his rod, or pointed his gun, before his wondering family, to show how waters were ransacked, and how fields had been devastated!!

Subsect. 2. *The social Character of Man advanced by Field Sports.*

518. *The highest authority known has said, "It is not good for man to live alone,"* and we have a full proof of this in the deterioration which the mind suffers by a total seclusion from society. The history of all ages has uniformly presented man as a social being, though to be so, it has been wittily observed, it is not necessary that he should be wholly gregarious. The very welfare of society, from the earliest times, has hinged on the union of the mental and bodily efforts of society in compact. Such we know to be essential to the interest of man individually and collectively. Field sports eminently encourage the social qualities; and even in such of them as can be engaged in singly, as shooting and fishing, it rarely happens that they are not pursued in company; convenience and other circumstances may force the sportsman out alone, but we would fain hope it is seldom by choice. Man was never intended to be a Carthusian; the *otio superstitioso seclusi* of Bale is a mental morbidity; and the tenets of constant silence, total abstinence, and other privations of the blessings of Providence, are only advocated by either knaves or madmen. Now field sports, of all other pursuits, are the most calculated to elicit the social virtues, and encourage the greatest community of interest. Who is it that the sportsman usually toils with such ardour for? Is it not in most cases for others, and has he not sometimes even more pleasure in giving away the produce of his labours, than in the acquirement of it? The laden trains bear testimony to the liberality of the sportsman, and prove, by the quantity of game they convey, that he is no niggard. Some of the most lasting friendships are formed by pursuing these sports in company; the community of momentary interests — the variety of parts which each takes in the scene — begets intimacies that are pleasing, lasting, and often very beneficial. A gentleman of very amiable qualities, but very retiring habits, was bequeathed a manor-farm, which the tenant, by a good understanding with his former landlord, had always kept well stocked with game, being also allowed the privilege of sporting over it. The new landlord, who was very little of a sportsman, wrote to the tenant confirming his rights, and assuring him of his best wishes; but stated that the peculiarities of his habits prevented him from specifying any intention of visiting his newly acquired property, or even laying claim to any of the game. The worthy farmer, impressed with gratitude for these kind demonstrations, journeyed to town to thank his new landlord, whose retiring nature was such that he would gladly have excused the visit. The manners of the farmer, however, were characterised by an honest openness, equally foreign to impertinence and servility; and his manifestations of a grateful sense of his superior's conduct towards him, though unobtrusive, were yet so fervent and sincere, as to interest and please his landlord; and so completely was his natural shyness overcome, that he yielded to the request of his tenant to visit his property during the approaching shooting season, and to make the manor-farmhouse his domicile. He fulfilled his promise, and the farmer showed his landlord plenty of game, taught him how to follow and kill it; and, what was more, it opened to him a new source of amusement which engaged his attention and improved his health. A league of amity was thus formed and kept up by a yearly visit of some weeks' continuance; and the hospitalities of the farmer were repaid by the liberal landlord in many ways, but in none more valuable, than in that of providing by his interest for three of his sons in succession. Such instances might be greatly multiplied; but of the generous sympathies awakened by rural sports, and of the lasting friendships of which *they have* laid the foundation, we need only challenge the reader's own recollection to prove their number and value. We even picture to ourselves the warm glow mantling on his cheek as he retraces some of them. Let us, therefore, hear no more of the debasing properties of *field sports*. To "take, kill, and eat," is a divine command, and the liberal sportsman only acts in conformity thereto.

Subsect. 3. *The martial Character of Man originated in Field Sports, and is greatly sustained by their Agency.*

519. *An early benefit conferred by the pursuit of wild animals* was the courage, address, and skill in combat, which it produced. For the capture of such as were formidable by their size and ferocity, man learned to devise weapons suited to place him on an equality with them; and having so done, his courage would be increased by his additional prospect of success, and his endeavours would be multiplied to insure it. The same means of offence, which he used against predatory beasts, he would also naturally employ offensively in extending his conquests into the territories of his fellow-men, or defensively in guarding his own; and the club, the lance, and the bow, which had slain the lion, tiger, and bear, would prove equally effective against the human aggressor. The connection between sporting and martial enterprise was therefore early and intimate, and so it has continued.

520. *Field sports have always proved the best corrector of that effeminacy* which refined luxury is apt to introduce; and we assert, without fear of contradiction, that when military ardour has been damped in any country by a long continued state of profound peace, it is only by the regular pursuit of hunting, and other athletic exercises, that we can hope to keep up that spirit of enterprise, that determination of purpose, and contempt of danger, which are the ground-work of a martial character. It was from the war which man necessarily, and in his own defence, made on animals, that he learned the art of offence; and it is to this practice he must look for the means of keeping up a similar character, by which alone he can make the inhabitants of every country at once respect and fear him. The records of history afford ample proof that, wherever luxury had introduced effeminacy into the habits and pursuits of its youth, the ruin of that country was at hand; of the truth of which observation the Persians afford an instance. Originally they were hardy, great adepts in the chase, expert in all manly exercises; and so long as they retained these characters, they were a terror to their enemies: but the extension of their dominions having broken the martial spirit of the people by introducing luxurious habits and debauchery, the Persian empire, hitherto invulnerable, easily fell before the victorious Alexander. The warlike character of the Grecians, as history informs us, was long carefully fostered and preserved in times of peace by the practice of field sports, and by athletic exercises of all kinds. Xenophon the Great, as we have already noted, was both naturally and politically an ardent sportsman, well knowing that nothing would so animate the Grecians to deeds of daring in the battle-field, as to habituate them to the hunting of wild beasts. By degrees, however, idleness and a mistaken refinement enervated the character of even this renowned people: their gymnastic contests gave place to feasting and revellings; their races were superseded by gaudy spectacles; and, for the actual pursuit of wild beasts, was substituted the baiting of tame ones in the arena. The hardy Alexander also, hitherto the foremost in danger—the first to endure privation and fatigue—now became a professed voluptuary: the conqueror of the world was himself vanquished by his excesses, and the sun of Greece was setting. Did our limits permit, we could tell how Rome also owed her glory and her conquests to the number and hardihood of her citizen sportsmen, and to the emulation which pervaded the whole of them to excel in such sporting exercises, as made the arts of offence and defence familiar, as gave strength and agility to the frame, and produced a total contempt of danger in the mind. Their most noble youths then vied with each other in deeds of daring in the chase, or in single-handed combat with wild beasts in the amphitheatre (*fig.* 104.); and the fame of the Olympic games will survive as long as history itself. But this mighty mistress of the destinies of many empires was herself subdued by the insidious attacks of sloth, luxury, and effeminacy; and only a very few years ago Rome was under the necessity of being protected by a handful of French soldiers.

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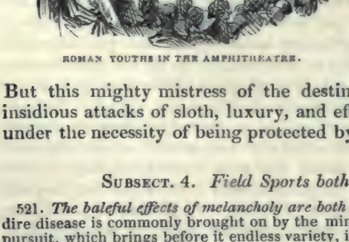

ROMAN YOUTHS IN THE AMPHITHEATRE.

Subsect. 4. *Field Sports both a Preventive and Curative of Melancholy.*

521. *The baleful effects of melancholy are both prevented and cured by the practice of field sports.* As this dire disease is commonly brought on by the mind resting intently on one object, it must be evident that any pursuit, which brings before it endless variety, is peculiarly calculated to prevent the approach of the malady, or to work its cure. Neither exercise, nor even the usual avocations of life, will prevent the intensity of thought: something must be devised, to peremptorily engage the attention by a constant succession of changing scene and diversity of object. Now, what can be so likely to do this as the pursuit of rural sports? These, being congenial to most natures, seldom fail to occupy the mind fully whilst they are followed, as well as to leave pleasing recollections afterwards; and we do really find that the sportsman is seldom the victim of this dire mental affection; while the same reasons which render the pursuit a preventive of melancholy, operate for its removal also. Burton, in his synopsis of the cure of mental disease, recommends "exercise of body and mind, by hawking, hunting, shooting, bowling, fishing, tennis, &c., &c.:" and, as a

rapid succession of living objects under new points of view almost invariably attracts the attention and engages the feelings, when other means have failed; so, in these cases, the best effects may be derived from the pursuit of field sports under a judicious mentor, who will vary them until he touches the cord which responds most in unison with the feelings, and most delights the imagination, of the *ennuyée*.

Sect. II. *The beneficial Effects of Field Sports on the Body.*

522. *We have before hinted that mercy was mixed with the curse which doomed man to subsist by the sweat of his brow.* Without an imperative stimulus to exertion he would have become diseased in body, imbecile in mind, and altogether degraded below the beasts around him.

Subsect. 1. *Health usually attends the Followers of Field Sports.*

523. *The pursuit of field sports is eminently calculated to insure robust health,* for it unites exercise with entertainment. In the early ages of antiquity, when man had few domestic amusements, his principal solace was in the chase; the exertions which this called forth sweetened his mossy couch, and by these his limbs were each morning nerved for fresh enterprise. Field sports beget a habit of early rising, a practice which is imperatively commanded by the Hygeian goddess; and we presume it is from having so much divinity about it, that sensations, both of body and mind, are felt at an early hour in the morning, which are unknown to any but early risers. All nature seems to gladden at the return of a new day; the air is fresh, and is yet untainted with the exhalations of moving multitudes, and other animal effluvia; neither is it rendered enervating by a vertical sun. Unfortunately, early rising is not so universal among sportsmen now as it was formerly; ten and eleven o'clock is a more fashionable time for fox hunters to meet at the covert side, than six or seven. In hare hunting the case is the same; and instead of puss being traced by the morning dew to her form, as in times past, to enhance the value of the after-prize, she is now bought at the hands of a hired finder at mid-day; and the sportsman is content to rob himself of half his pleasure and glory, in exchange for two hours' restless tossing to and fro in a hot enervating bed. Late rising is very often accompanied with a leaning to general inactivity during the day; and it is not until the well-spread mahogany awakens their energies, that some modern sportsmen are fully called into spirit and action. In such case a motley but fatal pack of diseases are in full cry after him, and will, beyond all doubt, be soon in at his death, unless, like the sturdy stag, he take to soil, and keep them at bay by new habits, or compounding with his old ones, by adding to them a double portion of vigorous and daily exercise.

524. *Health is also often restored by the pursuit of the sports of the field;* and it is truly surprising how these pursuits have renovated many broken constitutions, and how they have kept off death to a late period in some whose habits continued intemperate. There is in the toils of the sportsman a continual change of posture, which is calculated to remove all hurtful deposits, particularly congestions of the liver and spleen, which are so commonly the parent of hepatic and splenetic affections. The ligamentary and aponeurotic deposits, which torture many free livers, and torment the sedentary with acute and chronic rheumatism, are removed by hunting and shooting. A friend of our own was, from inactivity, a valetudinarian of this class; and, in addition to his rheumatic affections, had constant nephritic pains, which prevented him from riding. We succeeded in forcing him to active exertion, by persuading him to try his hand at fly-fishing. We fairly entered him one mild April day; he caught two trout, was delighted with his success, and almost daily continued the practice. By the succeeding autumn he was so much strengthened as to be able to mount his gun, and follow his game over hill and dale, which he continues to do to the present time; and, from the improvement in his health and spirits, he has reason to bless the day that dawned on his shooting career, and roused him into activity. Bodily exercise, as before observed, is never so beneficial as when it is taken under an exciting impulse and in cheerful society, in which an honourable emulation spurs on to energy and enterprise. Under such circumstances, the exhilarating effects of the cry of the hounds, or the tones of the spaniel questing on the scent of the pheasant or woodcock, are at once medicines both to the body and mind.

Subsect. 2. *Field Sports favourable to Longevity.*

525. *Longevity very generally attaches to the follower of rural sports;* and if the periodical county bills of mortality were framed in such fashion, that the defunct were classed according to their pursuits, we have little doubt that the rate of age would preponderate greatly in favour of the sporting characters. In the obituaries of the monthly sporting journals, enough may be seen to establish the healthy nature of the pursuits we advocate; while the avidity with which these exercises have been followed, to the latest periods, attests that pleasures excited thereby never satiate. How many veterans of eighty years have spent sixty of them in field sportings. Mr. Daniel notices a Shropshire gentleman, who died in 1804 at the age of ninety-seven, and who, within a fortnight of his death, was enjoying the chase with his usual zest. In the same year died Owen Carrol, the celebrated Irish huntsman, being ninety-six years old, sixty of which he had passed in the family of Cæsar Colclough, Esq., of Duffy Hall. At one time, the united ages of himself and horse amounted to one hundred and six years; and yet, we are told, neither could be beaten by the youngest in the field. The late Mr. Meynell died at an advanced age, we believe; and how attached he was to hunting needs not be stated. Ralph Lambton, Esq., will long live in the memory of the fox hunter. This gentleman hunted his own dogs for nearly half a century; and the Duke of Cleveland, who erewhile seceded from the same sport

from the infirmities of age, was also principal huntsman to his own pack for the same period. Having already had so many occasions of proving that the chase has been essential to the safety and nurture of the early races of man, we shall not offer any additional notices on the subject here, although both considerations are very important, and equally apt to our general argument.

Subsect. 3. *Field Sports important in a Commercial Point of View.*

526. *The early races of man varied their pursuits*, and while some hunted the beasts from their habitations, others cultivated the newly acquired territory. These different pursuits tended however to the common good by a system of barter, which must have been practised as soon as man began to multiply. The sons of the chase thus exchanged the flesh, the skins, the bones, horns, feathers, and scales, of the birds, beasts, and fishes, which they had taken, for fruits, grain, &c., and the custom has extended. Millions still live solely by the capture of wild animals for the sake of their flesh as food, or of products which they yield as articles of traffic. The elephant is hunted for his ivory tusks, and a multitude of savages subsist on the profits of the pursuit. In our country alone, in 1840 and 1841, according to Mr. M'Culloch, the annual import of ivory was estimated at 10,372 tusks, of about 60 lbs. each, making a total weight of about 622,300 lbs. In France, also, the importation of it must be great, since there are no less than eleven flourishing manufactories of ivory articles in Dieppe alone. The living animal is likewise an article of commerce in Asia and Africa, where great numbers are captured and kept for various purposes. Occasionally one or more are sent to England, where, having arrived, the cost is not less than a thousand pounds for each. Of the fur trade, it is not easy to form any conception of the extent; the American hunters every year take many hundred thousand skins of various fur-bearing animals, and the horns of their wild oxen and deer are exported in large quantities for various purposes. The bones of animals are used for manuring land, and their hairs are manufactured into brushes, which paint some of the most splendid specimens of the British artists, while others are used to whiten the teeth of the ladies, or to polish the boots of the beaux. The hides of the buffalo of Africa, of the wild horses of South America, and the wild asses of Asia, are sent in vast quantities to England.

527. *The trade in living animals is also very great*, by which means not only commerce is benefited, but natural history is advanced. Comparative anatomy derives some of its greatest aids from these sources; and in the search for the objects themselves, by intrepid adventurers from our own country, a knowledge of the habits and manners of these animals is gained, and a beneficial intercourse with the people of the country is established. The ostrich lends its eggs to adorn our cabinets, and its plumes to bedeck our belles. Some of our most elegant ornaments are made of feathers taken in tropical countries; and it is to the exertions of the natives in the chase, that so many splendid living specimens in ornithology are seen in our menageries. The epicure owes his reindeer tongues, his bear and his boar hams, to the sportsmen of the north of Europe; his caviare to the sturgeon fishers of Russia, and his sardinias, anchovies, &c., to those of the Mediterranean. Look we to the north, not even the rigours which here hold almost perpetual sovereignty, nor the dangers and impediments which long continued snows, and an intensity of frost, such as is only known here, can prevent the enterprising naturalist, and the mercantile adventurer, from exploring these hyperborean regions. The former views, with wonder and delight, the sportings of the monstrous whale; and, with equal awe and admiration, he regards the vast masses of ice which successive years have heaped together into glaciers so tall and so vast as to be known as the ice islands (*fig.* 105.) These transparent mountains rear their heads some hundred feet above the surface of the water; and although, when illuminated by a vertical sun, they reflect the most beautiful tints, yet they cannot but inspire dread, lest the hapless ship should, by coming in contact therewith, be instantly crushed to atoms. The commercialist, notwithstanding, feels greatly interested in the vast fishings for the whale, which yield the oil and baleen, or whale-bone, both of which are most important articles in the arts and manufactures We hope that this rapid glance will show that the capture of animals, which is only *rural sporting* in its most enlarged sense, is not more worthy our consideration as a luxury and amusement, than important as it ministers to the real wants of mankind. We might amplify on this subject; but as the individual offerings of each class of animals for the benefit of man will be noticed with the natural history of each, we shall not enlarge further on them here.

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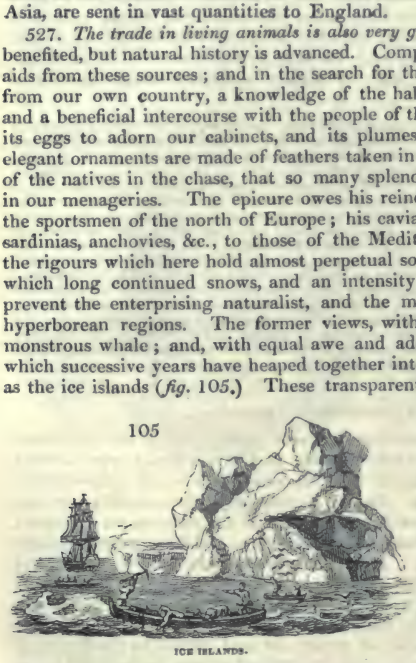

ICE ISLANDS.

BOOK II.

THE NATURAL HISTORY OF THE LIVING OBJECTS OF FIELD SPORTS.

528. *As there are but few animals which have not been vigorously pursued by man at some period or other,* we shall best compass our object by first offering a general outline of the animal kingdom, only filling up such individual portraits as by their intimate connection with sporting practices may be considered as particularly interesting. The prosecution of the subject will be attempted under these several heads: — First, A systematic division of animals, or their systematic history. Secondly, A concise treatise on their internal structure and the functions of their various organs, or their anatomy and physiology. Thirdly, A display of their exterior forms, characters, habits, &c.; which we shall call the popular history of animals.

Chap. I.

The general Importance of the Study of Zoology, and its intimate Connection with Field Sports.

529. *The sportsman of by-gone days and he of the present time differ considerably;* the former was content if his game was plentiful, and his pursuit of it successful. Wholly absorbed in the work of annihilation, and the poor gratification of exhibiting proofs that his *organ of destructiveness* was fully developed, he was little careful whether he even left enough to replenish the waste he had made. It is not so with the sportsman on whom a modern education has shed its lights, and set before him the delights of an acquaintance with natural history: such an one, though alive to the pleasures of the chase, pursues it liberally, and avoids all wanton destruction. Looking to cause and effect, he not only balances the supply and the waste, but also derives pleasure and information from the instinctive manifestations made by the objects of his search to elude his vigilance. Their artifices interest him, their forms delight him, and, living or dead, they yield him food for contemplation.

Sect. I. *The general Importance of the Study of Zoology.*

530. *Zoology may be considered as one of the most useful branches of knowledge,* inasmuch as it makes us more intimately acquainted with those humble partners of our mortal pilgrimage, whose claims on us are great, not only for the essential service they render, but because the mighty mechanist who formed them thought fit to operate in their case on the same principles as those he employed in our construction, and to breathe into them the same breath of life by which we are animated. To disdain them, therefore, is to insult their maker and our own; and to neglect to examine into their structure, dependencies, and attributes, is to neglect to study their author in these his works: while to encourage any ill feeling towards them is to run counter to the purposes of that Being who, by subjecting them to our control, placed them also immediately under our protection, and gave us the use, but not the abuse, of them. It has been said that "The proper study of mankind is man;" and, as regards his relationship with his fellows, it certainly is so; but has man no other important relationships? Are the remaining portions of the vast world of animated nature, objects unworthy of his especial regard and consideration? What would be thought of the steward of a great landed estate, were he found to be wholly ignorant of the nature of the different soils which predominated in its several parts, and of the characters of the tenants who occupied them? And shall man, as the steward of the Almighty, who has especially placed him over the kingdom of nature, remain ignorant of the objects of his stewardship? Or is his acquaintance with animals to be confined to their mutilated carcasses when dead; or his knowledge of their habits to extend only to the arts practised by them to escape from his meditated destruction? On the contrary, the reflecting sportsman will take a higher ground; he will consider that, while the capture of animals is a legitimate portion of his stewardship, their connection with him in the vast field of nature should not be lost sight of; and that a more intimate observance of their forms, habits, and manners, instead of curtailing his amusements, will greatly extend and diversify them. His interest will be carried greatly beyond the bagging of his game, the excellent dish his cook makes of it, or the zest which the savoury treat gives to the viands that follow it. As it has been our professed aim, from the outset, to make rural sports an intellectual, as well as an amusing pursuit, we shall beg leave to offer a few more considerations in proof that the arts of the chase and the study of philosophy, so far from being incompatible with each other, are, on the contrary, intimately connected, and mutually aid each other.

Subsect. 1. *The particular Importance of the Study of Zoology to the Followers of Field Sports.*

531. *The importance of an acquaintance with zoology is seldom sufficiently appreciated by sportsmen;* and yet no persons have such opportunities for a successful study of that science, and to none can it prove more interesting or more useful. Indeed, it is so intimately connected with every portion of their practice, that it only excites our wonder that so many are to be found ignorant of it. The classical sportsman would be ashamed to be thought uninformed on the transformations celebrated by Ovid; and yet many such an one is unable to trace them to the apposite facts in natural history from which they are derived. From how many errors and mortifications would only a moderate knowledge of the natural history of animals save the follower of rural sports. One kills an animal he supposes altogether a *lusus naturæ;* he exults in his prize, and probably sends it to London to be preserved, and gets laughed at by his more discerning neighbour, who recognises in the wonder some well known object under a disguise incident to either sex, age, locality, or time of the year. Many a stoat, in his white winter fur, has been stuffed, and thus served to perpetuate the ignorance of its owner; and we have more than once been shown "a wonder of a pheasant!" "half cock and half hen!" nor was it easy to persuade the possessor that it is very common for the female pheasant, when she becomes too old for incubation, to assume much of the external characters of the male.

532. *We have also of late met with some grave discussions on the food of the snipe;* the prevailing opinion being that it is supported by suction only, whereas observant sportsmen must have witnessed the dying bird disgorge the last worm he had swallowed (*fig.* 106.). The detection of these instances of ignorance gives pain to the individual found so "wanting;" whereas, only a slight acquaintance with zoology would wholly prevent such palpable errors. We opine, however, that they are becoming more and more rare every day. Zoology is now a part of the study of most persons; and should any one find it too dry to pursue in his closet, let him become an *out-door naturalist*, and his predilections towards nature's works will increase every day. He will then be fairly enlisted, nor will he ever have reason to repent the pursuits he has chosen, but will be led each day to increase his intimacy with the living forms around, and to study in them beauty and harmony of design, leading him from nature up to nature's God.

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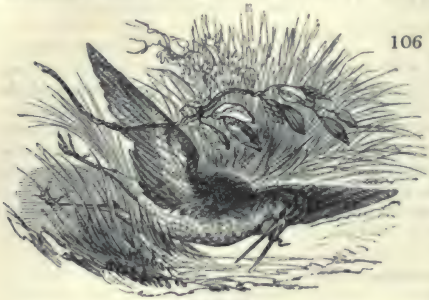


DYING SNIPE.

533. *An ignorance of natural history deprives the sportsman of half his pleasure.* To pursue merely to destroy, is to represent man in his savage state, who takes no other interest in the various living forms around him than as they may glut his predacity, or yield him profit. The zoologist, on the contrary, while he pursues the game with ardour, and is neither neglectful of the pleasure derived from the chase of it, nor insensible of its value as an edible afterwards, extends his views to the conditions of the existence of each variety he meets, whether he regards the solitary individual or the congregated group. Whether he examines their form, or observes their habits, he is delighted with the ample illustrations of that adaptation by which every living object is peculiarly fitted for the circumstances under which it is placed.

534. *If the sportsman be an agriculturist, an acquaintance with zoology proves doubly useful;* indeed, to such an one it may be said to be indispensably requisite. Mr. Loudon has aptly illustrated its importance to this class of persons in his *Encyclopædia of Agriculture*, p. 283., by the following anecdote:—"In 1788, great alarm was excited in the country by the probability of importing in wheat, from North America, the insect called the Hessian-fly, whose dreadful ravages had spread desolation and almost famine over that country during the two preceding years. The privy council sat day after day, anxiously debating what measures should be adopted to ward off a danger, more to be dreaded, as they well knew, than the plague or pestilence. Expresses were sent off in all directions to the officers of the customs at the different out-ports respecting the examination of cargoes. Dispatches were sent to the ambassadors in France, Austria, Prussia, and America, to gain that information which only a scientific knowledge of the insect would supply; and so important was the business deemed, that, according to Mr. Young, the minutes of council, and the documents collected, fill upwards of two hundred octavo pages. Fortunately, England contained one illustrious naturalist, whose attention had long been directed to all subjects which connect natural history with agriculture, and to whom the privy council had the wisdom to apply. It was by Sir Joseph Banks's entomological knowledge, and through his suggestions, that they were at length enabled to form some kind of judgment on the subject. This judgment was after all, however, very imperfect. Sir Joseph Banks had never seen the Hessian-fly, nor was it described in any entomological system. He called for facts respecting its nature, propagation, and economy, which could be had only in America. These were obtained as speedily as possible, and consisted of numerous letters from individuals, essays from magazines, the reports of the British minister there, &c. One would have supposed that, from these statements, many of them drawn up by farmers who had lost entire crops by the insect, which they professed to have examined in every stage, the requisite information might have been obtained. So far, however, was this from being the case, that many of the writers seemed ignorant, whether the insect was a moth, a fly, or what they termed a bug! And though, from the concurrent testimony of several, its being a two-winged fly seemed pretty accurately ascertained, no intelligent description was given from which any naturalist could infer to what genus it belonged, or whether it was a known species or not. With regard to the history of its propagation and economy, the statements were so various and contradictory that, though he had such a mass of materials before him, Sir Joseph Banks was unable to form any satisfactory conclusion." Neither is it irrelevant to the cause we plead to add, with Dr. Turton, that "Had natural history been more generally known, Milton would not have described the whale as a scaly animal, nor the snake as having a hairy mane; nor would the arms of many of our nobility have been supported by the representations of compound animals, existing only in the imagination of fanciful dreamers."

535. *The sporting naturalist is never in danger of meeting with a blank day,* which may be considered as a very valuable distinction in his favour above his fellows. When the hound can inhale little scent, and both fox and hare mock the hunter's toil; when the birds will not lie, or when wary fish refuse the daintiest baits, the philosophic sportsman can derive instruction and pleasure from the consideration of that instinct which diversifies the habits of these animals so much as to render them at one time an easy prey, and at another totally unattainable. The sportsman who adds to the love of the chase the study of nature generally, can never be wholly disappointed: for him some new fact in zoology will still present itself to delight and instruct, or some nondescript, or at least rare, variety among the living wonders around may reward his search and increase his *Fauna.* When the unpropitious skies absolutely drive the sportsman out of the field, and force him to seek shelter in the first friendly barn or village inn, what happens to him who, in addition to his fondness of the chase, is an ardent admirer and attentive observer of nature generally? And, under similar circumstances, what is the situation of him who, uninterested and uninformed with regard to every thing but the animal gratification of pursuing game, is thus frustrated? Having no other resource, he becomes a prey to unmitigated chagrin, and feels all the tedium of absolute vacancy, and the regrets of total disappointment. Let us suppose such a person driven by the unexpected storm to his temporary domicile, a small village inn, where, shut up without a companion, we may picture him as sighing at his ill-luck, ever and anon uttering bitter execrations at the weather, which has blasted his hopes and left him without a resource. It is in vain he visits the door, or looks out of the window; the stormy winds continue to mock his woes, and the pouring shower drowns his hopes. The ancient and massive oak table, which juts out in pride from the side of his apartment, serving to support a respectable pile of some three or four equally massive tomes, attracts his attention, and in hopes of something to amuse, he breaks the connection between these constant companions, and, *lamentabile dictu* (to him whose readings are probably unfrequent, and then only of the lightest kind), he discovers two folios of *Fox's Martyrs,* the *Whole Duty of Man,* and certain other serious works, doubtless of a very edifying character, but the contents of which are so little calculated to inspire the wretched prisoner with more lively ideas, that he turns to examine three smaller volumes piled on the window-ledge, and which he finds to be *Carpenter's Spelling-book,* the *Ready Reckoner,* and an *Almanack* several years old. Can we do other than pity our unfortunate when thus situated? for how little likely are these to suit his taste. What would he not now give for an odd volume of *Life in London?* Even the oldest edition of *Joe Miller* would be acceptable. His cigars are without flavour; his brandy and water is not mixed to his taste; and misery has now taken possession of his mind, because it was before unfurnished.

536. *But how fares it, under similar circumstances, with the observant naturalist?* Familiar with nature in every shape, it may even be expected of him that his prescience may save him the mortification of choosing an unpropitious day. For, at early dawn he can usually foretell the coming storm, by watching the promises held out of favourable or unfavourable weather in the various objects around him. It may be expected that, on his rising, he will first cast his eyes upwards, where, should he discover horizontal stripings of the *cirro-stratus,* to which the *nimbus* from below is reaching up with envious emulation, he begins to doubt; but if he further observes, that although the sun has appeared, yet the flowers of the convolvulus, of the anemone, and those of the anagallis also, remain closed; and further, if he find the awn of the wild oat and sweet-scented spring-grass extended "most provokingly straight," his acquaintance with these signs of the approaching storm will retain him at home, and prevent those mortifications which the less informed and less observant fall into by going abroad. Let us, however, suppose our naturalist not to have met with these premonitory signs, but to be at once deprived of his intended sport by a sudden change in the weather, or by any one of those unexpected reverses which are apt to deprive all of us of the particular entertainment we meditate. Is he thereby cut off from all enjoyment? Are his pleasures all marred, even though he be doomed to remain some hours in his room alone? No! For him the page of nature is open, of which "a new edition with additions" is published every morning, by which he is furnished with endless variety in his researches, and constant increase to his stores. With this great book ever before him, he can make every situation agreeable. He can turn even the storm to his advantage, by watching the modifications which the clouds continue to assume. The momentary doubtful presages of fine weather he augurs will be destroyed, from the rapid increase of the *cumulus* and its floccular appendages; but the pencilled threadings of *cirrus,* as they stretch across the firmament, he hails with delight. Or, he can watch the effects which the warring elements have on animals from the window of his apartment, and feel a pleasing interest in the employ. Impelled by their instincts to avoid the deluge, he observes the butterfly as it hastens to secrete itself under the surface of some polished and ample leaf, or he watches the humble bee seeking momentary shelter by creeping to the bottom of some umbelliferous flower which winds around the casement. The duck, on the contrary, supplied as it is with an oleaginous reservoir to render its feathered dress waterproof,

enjoys the shower which beats down insects for its repast, or enables it in security to search for minute *helices* below, or to strain them between the horny processes of the mandibles from the aquatic plants which float on the surface. From these, and innumerable other instincts, which are always present to view, a zoologist can derive pleasure, and he can feel admiration at that wonderful system of adaptation which has ordained "that sufficient for the day is the evil thereof."

SECT. II. *The Systematic Division of Animals.*

537. *A systematic inquiry into the animal kingdom might be made to commence with man, as the head of the whole.* Our notice of him, however, for obvious reasons, will be confined to this acknowledgment of his pre-eminence. Into any minute classification of animals, such as may be found in the works of Linnæus, Ray, Cuvier, and their successors, the nature and limits of this work forbid us to enter. But, as it is our desire to enhance the sportsman's pleasure, instead of curtailing it; and as we are certain that a scientific knowledge of the objects of his pursuit will double his zest in the chase after them, we would bespeak his attention while we treat of the station, the external characters, and the anatomical and physiological facts, which belong to the animals he pursues. In so doing, it will be our particular study to avoid any dry detail; and we hope so to mingle zoological information with the ordinary occurrences of the sportsman's career, that his hound and his horn, his dog and his gun, his fly-line and his trolling-rod, shall be dearer to him than ever, from the instructive and interesting associations which our discourse will raise in his mind in his future sportings.

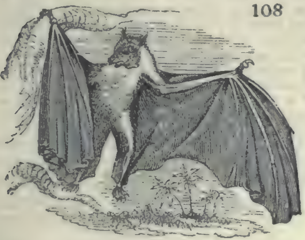
538. *Zoological detail*, it is natural to suppose, when offered to an indiscriminate body of sportsmen, will be more likely to prove acceptable when divided into departments; for the piscatory amateur will feel most interested in the natural history of fishes, as the zealot of the trigger will prize an ornithological sketch before one which treated on quadrupeds only; which latter is more likely to be prized by the fox hunter before any other. As *Mammalia*, or, as we mean here, quadrupeds, take the lead in all treatises on natural history, so our first outlines will be sketched from them. The natural history of birds will precede the treatises on hawking and shooting, as that of fishes and insects will be attached to our angling department. This division of the subject, though burdensome to the composer, we are inclined to think will prove most acceptable to our sporting readers generally, as more immediately connecting each variety of field sports with the natural history of the animals which are the objects of pursuit in them.

SUBSECT. 1. *The Advantages of Systematic Classification.*

539. *The several portions of the chain of existence exhibit few discordances;* they unite with each other in such a way as to excite our admiration at the pleasing variety exhibited in their appearance, as well as at the intrinsic uniformity of the whole. Nay, the distinction between what is called dead and living matter is so difficult to define, as to make the immediate connection of these seemingly discordant principles more than suspected by some, and, as observed by an ingenious writer, "The matter of which organic bodies consist is precisely the same as that which is found in the inorganic: it is not a difference in the nature of their component particles, but a difference in their arrangement, that constitutes the essential distinction between those two great classes. The very name of organic bodies points to this fact; for they are denominated organic, because the matter of which they consist is invariably arranged in a peculiar manner, termed organisation. Dead, or inorganic matter, arranged in this peculiar manner, and modified according to certain unknown laws, becomes organic: what the modification is by which inorganic is converted into organic matter we are wholly ignorant." In proceeding from the simplest inorganic body to such as exhibit the complexity of crystallisation, an uniting link seems apparent between the mineral and the vegetable kingdoms; while this latter exhibits even stronger traits of continuity with animal life. Thus the lichen, which incrusts the stone, is perceptibly little higher in the scale of being than the stone itself. The mimosa evinces a greater degree of irritability than the mussel and many other *Mollusca*. The gyrations of the sunflower, marigold, and other compound radiated flowers; the extensive journeyings of the potato plant, entombed within a cellar, towards the smallest crevice which presents itself for its exit; the approaches of the tendrils of many tender plants, which are directed with unerring certainty towards the neighbouring objects for support, are indications of an organic sense of their own weakness; while the predatory acts of the *Dionœa Muscipula*, and the care of the tamarind tree to wrap its leaves around the tender fruit, are automatic manifestations of perception which curiously approximate the vegetative to the animal sphere of existence. The natures of these vegetables, when compared with those of *Polypi* and *Medusæ*, with powers of locomotion so confined, give the palm of superiority to them. Irritability, which was long considered as the distinctive and peculiar attribute of animal life, is also more evident in the sensitive, and some other plants, than it is in corals, sponges, &c., which may be cut and hacked without the smallest manifestation of sensation. If we seek for lines of strict demarcation between the beast and the bird, where shall we find

them? They certainly do not exist in the popular criterion, that the one walks, and the other flies; for the bat, as we have elsewhere shown, is as entirely quadrupedal as the horse, and as mammiferous as the cow. Furnished with an extensive membrane, which stretches from one extremity to the other, he, it is true, flaps his way in the air after the manner of birds, for his habits of life, and the food he subsists on, require these peculiar organs of adaptation. The *ornithorhynchus* (*fig.* 107.), a quadruped of New South Wales, not well defined in some other members, has its head terminated by an exact resemblance to the bill of a duck, forming an additional approximation of the classes of birds and beasts. The apteryx has but the rudiment of a wing. Beasts and fishes also approach in external semblance. The whale and porpoise tribes, one and all, belong to *Mammalia*, while reptiles are also united by close affinities, as we know, with both these classes. Mr. Lawrence, on this interesting subject, observes: — "The pursuits of zootomy (comparative anatomy), in unfolding the internal mechanism and its movements, display the most evident transitions and gradations of organisation and economy. We see classes and orders; as, for example, birds, and the *Testudines* (the turtle and tortoise kinds), which, by their external configuration, are quite insulated in the creation, connected in the most natural manner with others of quite a different form, and united to them by the principle of internal resemblance. The four component parts of the upper extremity, viz., the shoulder, arm, fore-arm, and hand, can clearly be shown to exist in the anterior extremities of all *Mammalia*, however dissimilar they may appear on a superficial inspection, and however widely they may seem to deviate from the human structure. The wings of the bat, osteologically considered, are hands; the bony stretchers of the cutaneous membrane being the digital phalanges or fingers, extremely elongated (see *fig.* 108.); where, from the extremity, may be seen one digit or finger of each wing tipped with a small nail. The dolphin, porpoise, and all other whales, have a fin on each side, just behind the head, consisting apparently of a single piece. But we find, under the integuments of this fin-like member, all the bones of an anterior extremity. The bones of the wing of birds also have a great and unexpected resemblance to those of the fore-feet of the *Mammalia;* and the fin-like wing of the penguin, although employed in swimming only, contains within the integuments the same bones as the wings of other birds, which execute the very different office of flight." These illustrations will be more fully borne out, and the facts stated will become more apparent, by comparing the skeletons of each class as presented in the *General Anatomy of Animals*, which is soon to follow.

ORNITHORHYNCHUS.



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THE BAT.

540. *In the grand classes of nature*, the arbitrary divisions into genera and species are, therefore, only nominally restrictive, and may in fact be seen to slide into each other, in many instances, by almost imperceptible gradations. The hyæna exhibits the several characters of the *Caninæ*, the *Viverræ*, and the *Suricates*. The lama may be claimed by both the camel and deer; the zebra appears as the intermediate of the ox and camel, as the nylgau seems to connect the ox with the antelope. A common model unites the sexes even, as we see in the males of the marsupial animals, which exhibit the type of the abdominal pouch, or false belly of the females, and in the nipples of ourselves and our dogs. The horns of the giraffe, the canine teeth of the horse, and the additamentary toes of some dogs, are also organs which appear to have been given less for use than for a disposition to adhere to a certain model, and to establish a harmonious connection throughout the animal chain. Man himself, who boasts of his pre-eminence in his erect attitude, is intrenched on by some apes, who also naturally assume the same position; and who, in stature, in the absence of a tail, as well as in cunning and address, are little behind the human inhabitants of some countries.

541. *An admirable connection is also kept up between the several kingdoms of nature*, by each being necessary to the existence of the other. The destruction of animal and vegetable matter supplies the waste of inorganic matter, while the *detritus* of the latter furnishes the *pabulum vitæ* of plants; which in their turn afford food and shelter to animals. It is thus that nothing is lost. "Total destruction" is a term that ought to be blotted from the vocabulary of the philosopher; for the decay of one portion of nature furnishes matter for erecting a new superstructure.

542. *The progress of systematic classification was slow*, and, in tracing it, Aristotle may be considered as the first systematic zoologist. His divisions of animals were, however, prin-

cipally founded on their external forms; their food, their dwellings, and habits. His penetrating mind, nevertheless, discovered that much was yet wanting; and he left a recommendation, that future naturalists should, in addition to these particulars, minutely examine the internal structure of animal bodies, and likewise inform themselves of the functions of their several organs; by which means a classification, at once systematic and natural, might be formed. It was not, however, until the times of Gesner, Aldrovandi, Ray, Johnstone, Charlaton, Klein, and Aretedi, when comparative anatomy began truly to engage attention, that successful attempts were made to class and group animals, according to the distinctive characters which nature had impressed on them. At this period, therefore, what is now termed the "natural method" of zoological classification put forth its effective buds, which were, without doubt, pushed into blossom by Linnæus, but did not fully expand until our own times. It is somewhat ungrateful to the memory of so great a naturalist as Linnæus to state, as it is now fashionable to do, that the progress of the natural method of classification was principally retarded by his great efforts in the cause. It is true that his compendious and artificial divisions of the world of nature so fascinated his readers at large, that the natural system of division was somewhat mystified: it was, however, never entirely lost sight of, but continued to advance under the protection of the very system now too much decried. What, though we cannot deny that such system was fettered with technicalities, and obscured by artificial distinctions, not altogether acknowledged by nature, and often injurious to a proper acquaintance with her works; it is nevertheless true, that his *classes* were mainly framed on the structure of the organs of the body and their functional phenomena. His *orders* also were almost wholly derived from the number and peculiarities of the teeth, although the remaining data were mostly equivocal; for, unfortunately for science, he was neither a profound anatomist nor a physiologist. It is probably owing to this want being but little felt by Linnæus in framing his *Sexual System of Plants*, that this portion of his labours is so pre-eminently great.

543. *The present extension of the "natural method of classification"* was to be expected, therefore, as these defects in the *systema naturæ* became more and more apparent; but more particularly so when comparative anatomy and physiology began to engage almost universal attention. It was then that zoology rapidly advanced; and as new varieties presented themselves from our more extensive foreign and domestic intercourses, the opportunities for its improvement multiplied. It may however be considered, that the "*artificial system*," as that of Linnæus is called, happily paved the way to a classification founded on a critical examination of the various systems of organs, both internal and external, of one animal group, as compared with those of other groups. In this field the names of Carus, Blumenbach, Lamarck, Latreille, Cuvier, Oken, Geoffroy de Saint-Hilaire, Spix, and de Blainville stand conspicuous among foreigners, as those of Home, Hunter, Grant, Owen, &c. shine at home. With these aids, but particularly from the indefatigable researches of Baron Cuvier, we may hope eventually to possess a system of zoology, so compendious, accurate, and well defined, that the tyro in natural history may be enabled by it readily to discover the name, character, and properties, of any living subject he may meet with in his own or any other country. We would recommend the reader, interested in this subject, to refer to the treatise on *Systematic Zoology* by Mr. Swainson, where he will find it treated with that acumen which marks all the writings of that eminent naturalist.

544. *The zoological classification of Cuvier is at present the most popular*, and is that most generally used by naturalists. It derives its superiority over that of Linnæus by framing, as already observed, the principal divisions of animals more from the nervous and sensorial, than from the circulatory and respiratory, systems. This very important improvement was the result of a profound acquaintance with anatomy and physiology, which the great professor of Upsal had never acquired; probably, however, less owing to any defect in the vast powers of his mind, or any insensibility to the value of comparison, than to the nature of the time he lived in, and to circumstances over which he had little control. It remained, therefore, for after times to offer the means, and to perfect the habit, of pursuing the study of natural history. All sciences must be expected to progress with time.

545. *The mixed and the quinary methods of classification, also,* engage the attention of some eminent naturalists of the present day. The *mixed method* is compounded of the natural one of Cuvier, and the artificial one of Linnæus. Dr. Fleming's highly prized work, *The History of British Animals*, is written after this method; "in which," to use his own words, "the characters employed are derived from all the systems of organs, and the subordinate parts of these; assigning, as the test of their importance, the extent of their occurrences and of their influence." The binary or dichotomous systems are evidently the ground-plan of the learned doctor's fabric.

546. *The quinary system of zoological classification has lately occupied the attention of some of our most eminent naturalists.* It appears to have been first proposed by Mr. MacLeay in his *Horæ Entomologicæ*, and, among others, it was warmly espoused and adopted, first by Mr. Vigors, and subsequently by Mr. Swainson, Mr. Bennett, and several other eminent zoologists. It may be thus stated: — Every natural group of animals is supposed to be capable of a demonstrable division into five members: these five members also admit of a binary distribution of two normal, or typical, and three aberrant; or, in other words, as we understand it, every group may be considered as characterised by its affinities, which are arranged in a circular series of five members, two of which closely correspond with the type, and are hence *normal*, as the remaining three, which do not correspond so intimately with the type, are *aberrant*. Mr. Swainson, we believe, continues to advocate this system, which he exemplifies by the

following propositions: — " First; That every natural series of beings, in its progress from a given point, either actually returns, or evinces a tendency to return again, to that point, thereby forming a circle. Second; The primary circular divisions of every group are three actually, or five apparently. Third; The contents of such a circular group are symbolically, or analogically, represented by the contents of all other circles in the animal kingdom. Fourth; That these primary divisions of every group are characterised by definite peculiarities of form, structure, and economy, which, under diversified modifications, are uniform throughout the animal kingdom, and are therefore to be regarded as the primary types of nature. Fifth; That the different ranks, or degrees, of circular groups, exhibited in the animal kingdom, are nine in number, each being involved within the other." (*Geography and Classification of Animals*, p. 225.)

Sect. III. *The Natural Method of Classification of Cuvier and his Followers.*

547. *The natural system of classification*, when stripped of its embellishments, is the arrangement into groups, according to the aggregate of fixed resemblances, not only of those which are external, but also of those which are internal. Consequently, it is somewhat erroneous to state of the *natural method*, " that it is nothing more than a return to the manner of looking at objects, and classing them; adopted instinctively by every human being." Would mere instinct have taught us to draw our inferences from anatomy?

548. *The primary divisions of Baron Cuvier are derived from considering all animals as either vertebrated or invertebrated*, and may be thus stated: — 1st. vertebrated animals; 2d. moluscous animals; 3d. articulated animals; 4th, radiated animals.

549. *Vertebrated animals possess a spine which incases the important nervous rope, called spinal marrow.* To the spine is added a protecting thoracic bony case-work of ribs. The *Vertebrata* have all red blood, a muscular heart, a mouth opening transversely, and jaws moving in the same plane; they have distinct organs of vision, smell, hearing, and taste; and they have never more than four limbs. Mammalia, birds, reptiles, and fishes, are all of them vertebrated animals. In fishes, indeed, the elements of more than four limbs are traceable.

550. *Invertebrated animals include the remaining grand divisions*, or, in other words, all such animals as are destitute of a bony spinal column and an articulated osseous skeleton. In most of these divisions, also, the blood is white. They are called *moluscous*, when the muscles are attached to the skin, whether such animals be with or without a shell, as snails and slugs; *articulated*, when the body is divided into rings, or segments, to the interior of which the muscles are attached (insects in general, and worms are of this kind); and *radiated*, when the organs of motion or sensation radiate from a common centre, as in the star-fish, &c. To these *Cuvierian general characters* it may be added, that animals with vertebræ are again divided into such as are warm-blooded, and such as are cold-blooded. Each of these are again subdivided, the warm-blooded into beasts and birds; and the cold-blooded into reptiles and fishes.

Chap. II.

A comprehensive View of the component Parts of the Body of Animals, their Connections and Uses.

551. *We must premise that we contemplated, and indeed had prepared, both by figures and descriptions*, a much more extended anatomical and physiological detail of the various parts of quadrupeds than we now offer. To fulfil these intentions we however found would so intrench on our actual sporting detail, that, to circumscribe our work within reasonable limits, it became necessary we should curtail something. Now, as our work professes to be especially intended to present the *principal features of field sports universally, from the earliest to the latest periods*, it is evident that, to redeem our pledge, we could not effect our curtailment here, but must do it on the anatomical and physiological matter, although such had been already prepared. We have done this with regret, but yet with less than we should have felt were we not able to point out sources from whence the deficiency can be supplied. The works of the eminent men named in paragraph 543. are calculated to do this, and of living authors we would particularly recommend for the purpose Dr. Fleming's *British Animals*, and his inestimable work, *The Philosophy of Zoology*. The subject indeed is now so popular, that it exhibits itself to the reader's notice in many other publications of the present day. Should life and health be spared us, we may yet attempt to fill up the outline fully. The field is a rich one, and the more labourers there may be in it, the more plentiful will be the harvest; in the meantime, we will proceed with our outline.

552. *The habits and manners of animals are not all that can be studied with pleasure;* nor is the classification of them by their external characters all that is required of even the junior classes in the school of natural history. Who can read Archdeacon Paley's *Natural Theology*, or Perceval B. Lord's *Popular Physiology*, without being stirred up to enter on a study of the structure and functions of animals with man as their head, and to seek the manifestations of the Deity in the design and composition of the various living

creatures around him. But we will close our own appeal, and call in the aid of an ingenious writer in the *Library of Useful Knowledge*, who, on the subject of *Animal Mechanics*, thus observes: — "Suppose a man, ignorant of anatomy, to pick up a bone in an unexplored country, he learns nothing, except that some animal has lived and died there; but the anatomist can, by that single bone, estimate, not merely the size of the animal, as well as if he saw the print of its foot, but the form and joints of the skeleton, the structure of its jaws and teeth, the nature of its food, and its internal economy. This, to one ignorant of the subject, must appear wonderful, but it is after this manner that the anatomist proceeds. Let us suppose that he has taken up that portion of bone in the limb of the quadruped which corresponds to the human wrist; and that he finds that the form of the bones does not admit of free motion in various directions, like the paw of the carnivorous creature; it is obvious, by the structure of the part, that the limb must have been merely for supporting the animal, and for progression, and not for seizing prey. This leads him to the fact that there were no bones resembling those of the hand and fingers, or those of the claws of the tiger; for the motions which that conformation of bones permits in the paw, would be useless without the rotation of the wrist: he concludes that these bones were formed in one mass, like the canon bone, pastern bone, and coffin bones, of the horse. The motion limited to flection and extension of the foot of a hoofed animal implies the absence of a collar bone and a restrained motion in the shoulder joint; and thus the naturalist, from the specimen in his hand, has got a perfect notion of all the bones of the anterior extremity! The motions of the extremities imply a condition of the spine which unites them. Each bone of the spine will have that form which permits the bounding of the stag, or the galloping of the horse; but it will not have that form of joining which admits the turning or writhing of the spine, as in the leopard or the tiger. And now he comes to the head: the teeth of a carnivorous animal, he says, would be useless to rend prey, unless there were claws to hold it, and a mobility of the extremities, like the hand, to grasp it. He considers, therefore, that the teeth must have been for bruising herbs, and the back teeth for grinding. The socketing of these teeth in the jaw gives a peculiar form to these bones, and the muscles which move them are also peculiar; in short, he forms a conception of the shape of the skull. From this point he may set out anew, for, by the form of the teeth, he ascertains the nature of the stomach, the length of the intestines, and all the peculiarities which mark a vegetable feeder." (*Animal Mechanics*, p. 15.)

Sect. I. *The External Parts of the Body of Animals considered.*

553. ***All animals are found to possess an exterior covering, or skin***, which appears to be given to modify their surface, regulate their form, and protect them from the action of surrounding elements. In the more perfect animals this organ consists of the following parts: the cuticle, the corpus mucosum, the corium, the panniculus, carnosus, and the cellular web.

554. ***The cuticle, or epidermis, is common to all animals.*** It is destitute of blood-vessels and fibres, is porous, of different degrees of tenacity, and varies greatly in substance, being extremely thick in parts exposed to pressure, as the balls of the feet of the *Digitigrada*, and on the backs of our beasts of burden. It is porous, to enable it to allow both of the exit and absorption of various gases and liquids, by which many important animal processes are carried on. It exfoliates in the form of scurf, and is the dandriff, which is seen to fly off the horse when curried or brushed by the groom, and the white powder, which smears the hand when passed against the body of fowls in a direction contrary to the natural inclination of the feathers. In quadrupeds and birds, and indeed in most animals, the cuticle is somewhat unctuous to the touch, and in fishes is frequently covered with mucus. It is capable of many important modifications, by which it assumes the character of nails, claws, hoofs, plates, and scales. It also exhibits some extraordinary but valuable alterations and accretions; such are seen in the callosities of the camel, lama, and cameleopardus, and in the cervical plates of the crocodile and alligator.

555. ***The mucous web is a finely organised tissue***, interposed between the epidermis, or hard insensible skin, and the *cutis vera*, or sensible skin, from which latter it is probably secreted. It is this substance which gives colour to the exterior of the body: thus the human inhabitants of Africa are almost black, because the mucous web is as singularly dark in them as it is light in the Europeans. Some spotted quadrupeds owe their variety of markings less to their hair than to this web; indeed, we have reason to believe that the white hair, or feathers, or skin, of either the brute or human *albino* is greatly influenced by some peculiarity in this mucous expansion; and also that the periodical changes of colour in the coverings of the body, which occur in tropical animals, originate in corresponding changes in this same tissue. "The peculiar whiteness of the hair, or feathers, to which albinos are subject, and which are seen, not only in quadrupeds and birds, but in the human race, is occasioned by a defect in the colouring matter of these coverings of the skin, and is always connected with a corresponding defect in vision also, arising from the deficiency in what is called the mucous pigment. Blumenbach thinks that this deficiency is hereditary in some of the *Mammalia*, so as to form permanent white breeds of animals, of which the rabbit, mouse, and ferret, afford familiar instances. The subject of albinos is intimately connected with some curious facts which have been recently investigated, and go to prove the intimate connection between, or rather the identity of, that substance which gives colour to the skin and hair with that which regulates the ability of the animal to endure a greater or less degree of light." This mucous tissue being the same substance with the pigment at the bottom of the eye, it follows, when the colour of the skin and hair change, the colour of the eyes does the same. (See ***Vision in Quadrupeds and Birds***, p. 185. 613.)

556. ***The corium (cutis vera), or true skin, lies immediately underneath the cuticle or mucous web.*** It is more obviously organised than the two membranes by which it is covered, and hence its papillary portion, which is probably a tissue of nervous fibres, is the immediate organ of touch; and although it extends over the whole body, yet it does so in different degrees; and we can understand from this, why some parts are more sensible than others. It is also from peculiar modifications of these nervous, or villous, papillæ, that some animal parts, both of ourselves and brutes, are more ticklish than others. Among human persons all are more or less thus sensible in the palms of the hands and soles of the feet; such is also the case with certain parts of quadrupeds, &c., dependent on those parts being furnished with nerves in greater plenty than most others. We may take this occasion to remark that, as the sensation called tickling is nothing more than friction applied to the surfaces of these cuticular papillæ, which we possess in common with quadrupeds, and as we know how difficult it is to bear to be tickled ourselves, we should feel more pity than anger for the poor horse, who winces and stamps when whisped or curried; in which cases it is unquestionably done less from vice, than from that unconquerable aversion to this species of irritation, which some of these valuable creatures feel more than others (as some of ourselves are very ticklish, and others little so). If only a finger, held near our own necks, will make the stoutest of us flinch, what may not a whisp of straw, with its countless points, inflict on the sensitive skin of the horse, particularly when in high condition. Spare him therefore, tender reader, from correction at these times, and direct your grooms to do the

same! Anatomy has failed to detect the villous surface in fishes, and some inferior animals; but, as they also are gifted with acute sensation, there is little doubt that it does exist in them: the poacher knows how to tickle the trout to its caption. In birds and reptiles the presence of this sensitive expansion is averred, although it is not apparent, except in the soles of the feet.

557. "*From experiments made to ascertain the composition of the corium, it appears to consist chiefly of gelatine,* and it is that substance which is employed in the manufacture of glue. In the thin, soft, flexible hides, the gelatine does not possess the same degree of viscidity as in those of more rigid texture; and the glue obtained from such is proportionally weak. It has already been stated that gelatine unites with tannin, forming a substance which is insoluble in water. It is to this combination that *leather* owes its peculiar properties. The skin is prepared for being converted into leather by maceration in plain water or in lime water, in order to remove the cuticle and hairs. The tannin is obtained from oak bark by infusion in water. The cleansed skin, now consisting chiefly of gelatine, upon being placed in this infusion, unites with the tannin. The strength of the leather depends on the strength of the hides; the more rigid these are, the more tough and durable is the leather which they furnish." (*Fleming's Zoology*, vol. i. p. 85.)

558. *The muscular web* (*panniculus carnosus*) varies greatly in its appearance, according to the motions which the skin and its appendices are destined to perform. It consists of a layer of minute muscular fasciculi, the extremities of whose fibres are inserted into the corium externally, and adhere to the body internally in various directions. This layer is very obvious in the hedgehog and in the porcupine (*fig.* 109.), where it assists in rolling up the body and erecting the spines, and in birds, in the erection of their feathers. It is wanting in the pig, while in the frog it is found only under the throat; on the contrary, to the armadillo, manis, porcupine, hedgehog, and all such animals as roll themselves up, it is of extraordinary strength. In the horse also, and indeed in most quadrupeds, it is a most important organ. It is a guard against the insidious attacks of insects, &c., and it likewise enables them so to corrugate the skin, as to dislodge such as have already settled. It also operates on the general form and character of animals. It is by this agent that the wild boar erects his bristles, the dog upraises his shaggy coat, and the enraged turkey reverses the entire order of his feathers.

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PORCUPINE.

559. *The cellular web forms the innermost layer of the common integuments, and rests immediately on the flesh of the body.* It consists of plates crossing one another in different directions, and forming a cellular membrane varying in its thickness, tenacity, and contents, according to the requirements of the species. The cells of this membrane are filled with various substances, according to the nature of the animal: in general, they contain fat, as in quadrupeds and birds; and, when the quantity is considerable, it occasions that plumpness and rotundity of the body and limbs, which appears in such as are fat. In the batrachian tribes, as the frog, toad, lacerta, and some other cold-blooded reptiles, it is not present; and hence they never fatten, but always look alike, wrinkled and shrunken. In birds, the cellular membrane exists in two forms, one of which receives air, and the other fat. Were these portions not distinct, we might fatten a bird until it could not fly, which is never the case.

560. *An important use of this web, when extensively filled with adipose matter, or fat,* is to weaken the sensibility of the skin to impressions of cold. Thus it is that the plump infant is often found alive in the arms of the frozen mother, and that our pups are so plump whatever the bitch may be. Thus also the whale, which has to bear the northern cold, exhibits a layer of many inches of blubber over its whole body, so that no part may suffer an abstraction of its temperature.

561. *The cellular tissue, as a reservoir of the fat of the body,* when filled performs another very important office in the system; for it becomes a store against accidental or periodical want, such as most animals are subject to at some seasons and under some circumstances, more than others. The bear appears more than usually ravenous before his hybernation; for he is then laying in a supply of nutriment, that he may retire to his den loaded with fat; and, by the gradual absorption of this substance, may exist during his long sleep; and thus, when his torpidity leaves him, this animal oil being exhausted, he is found lean and emaciated. The cellular web is therefore intended as a storehouse to lay by supplies for accidental want and extraordinary waste. Sickness and old age beget emaciation, because the supply in these cases never equals the daily wants of the animal.

562. *The appendices of the skin are hairs, feathers, horns, scales, shells, and crusts;* and the modifications of these substances may be considered as appendicular also.

563. *Hair is an important appendage to the skin of animals,* and the several *hairs* differ remarkably in their structure. In most cases they are tubular, and appear to spring by a bulbous extremity from the cellular web. In others they seem to be simple elongations of the cuticle, as is proved by their being cast with the skin, as we see in caterpillars and in

some shells. "Each hair," says Dr. Fleming, "consists of an external horny covering, and a central vascular part, termed *medulla*, or *pith*. This horny covering is composed of numerous filaments placed laterally, to which different kinds of hair owe their striated appearance. These filaments appear of unequal lengths, those nearest the centre being longest; and, consequently, the hair assumes the form of an elongated cone, with its base seated in the skin. This form gives to the hair that peculiar property on which the operation of *felting* depends." In consequence of this structure of the surface, if a hair is seized at the middle between two fingers, and rubbed by them, the root will gradually recede, while the point of the hair will approach the fingers; in other words, the hair will exhibit a progressive motion in the direction of the root, the imbricated surface preventing all motion in the opposite direction. "It is owing," says the same authority, "to this state of the surface of hairs, that woollen cloth, however soft and pliable, excites a disagreeable sensation of the skin in those not accustomed to wear it. It likewise irritates sores by these asperities, and excites inflammation. The surface of linen cloth, on the other hand, feels smooth, because the fibres of which it consists possess none of those inequalities of surface by which hairs are characterised."

564. *If a quantity of wool be spread upon a table*, covered with a woollen cloth, and pressed down in different directions, it will be seen that each hair will begin to move in the direction of its root, as if it had been rubbed between the fingers. "The different hairs, thus moving in every direction, become interwoven with each other, and unite in a continuous mass: this is the felt with which hats are made. Curled hairs entwine themselves with one another more closely than those which are straight, though flexible, as they do not, like these, recede from the point of pressure in a straight line; and hence hatters employ various methods to produce curl in the short fur of rabbits, hares, and moles, which they use. This is accomplished chiefly by applying the solution of certain metallic salts to the fur by a brush; so that, when the hairs are dry, the surface which was moistened contracts more than the other, and produces the requisite curve." (*Fleming's Zoology*, vol. i. p. 88.)

565. *The modifications of hair are various:* some are thickest in the middle, and in some animals they are seen flat. In the whiskers of the seal their margins are waved; in the porcupine and hedgehog they become spines; in swine bristles; and, when crisped, they form wool: but in all, hair forms one of the most permanent animal substances with which we are acquainted, resisting putrefaction very long. Hair and horn have a very strong affinity; and, as we shall hereafter show, there is much reason to suppose that horns are only agglutinised hairs in the ox, antelope, and other hollow-horned animals.

566. *The colour of the hair* seems partly to depend on its own component parts, and partly on those of the mucous web. That its own component parts may change, independently of the mucous web, we conclude from the sudden alterations which take place in the colour of the hair, and also from the diseases which affect it, as *plica polonica*, &c., which act without disturbing the hue of the mucous web. The blanching quality of old age also, while it operates on the hair, leaves the web unaltered in colour. We have, however, sufficient proofs of an intimate connection between the colouring matter of the mucous web and the tint of the hair. In piebald horses, and in spotted beasts of every kind, these analogies, as before observed, are certainly established. The colour of hair depending on internal structural arrangement, is supposed to indicate constitutional peculiarities also, a supposition which facts seem to bear out. In the human subject dark hair betokens strength of body, as hair of light hue often indicates weakness and irritability. Old animals become grey; and the hair which is reproduced after a wound is commonly white, because the part is yet in a state of debility. The skins of white animals are also more subject to disease than those of darker hues, and thus the white heels of horses are peculiarly liable to cracks and grease, and the skin of white dogs to mange. Although, within certain limits, both the colour and consistence of hair are fixed by nature, yet both are liable to become altered by domestication, by food, intermixture, &c., of which we have numberless proofs. Wild swine vary little in colour, and not very greatly in figure, wherever found; but, as domesticated animals, they are of every hue, and their varieties of markings are endless: removed from their native soil, the texture of their hair varies also in its length, volume, &c.

567. *The inclined position of the hair admirably adapts it for protecting the body.* It does so, to a certain degree, from external injury, and, to a great degree, from the access of cold. The hair crisps, waves, and even assumes something of the texture of wool in the arctic regions; and, when animals in such situations are found with the hair long and straight, there is always an under or an interposed layer of a fine woolly fabric added to it. The inclined position of the hair is also well qualified to carry off the superfluous heat of the body in arid climes. The natural direction of the hair however is liable to be disturbed by derangement in the skin itself, the corrugation of which reverses the order of the hair, as we see in our domestic animals, particularly in horses and oxen. The skin, sympathising with the internal organs, and more especially with the alimentary canal, in particular derangements of both the stomach and bowels, the hair is seen to lose its inclined situation, and to produce what is called a "staring coat." In such cases the unctuous secretions supplied

by the vascular bulb becoming defective, the hair is not only altered in position, but becomes dry, and feels harsh to the touch. In the cold fit of fever, the hair assumes the erect position, from the action of the fleshy pannicle which corrugates it. On parts subject to much pressure, or such as are liable to be disturbed by continued motion, the hair is inclined to become curled, by which it offers a more effectual resistance to either pressure or friction. It is thus that we apply the crisped and tortuous fleece of the sheep in the undressed skin under our saddles, collars, and cruppers, to prevent galling.

568. *The hair is naturally deciduous in most animals;* many accidental circumstances also take it away and renew it; but its alternate increase and diminution is regular in all. In horses the winter covering falls off in the spring, and the short coat of the summer gives place to one longer and coarser in the autumn. Hair, though so useful to quadrupeds, is not essential to their existence; thus, there is a variety of Barbary dog, and of African horse, wholly without it. It is also very sparingly supplied to some others of the *Pachydermata*, or hard-skinned animals.

569. *Wool differs from hair in having its filaments rough on the surface.* In hair, on the contrary, it is smooth. Hair is nearly uniform in thickness throughout, except tapering a little at the point; wool is unequal in size, and rather larger towards its end. Wool detaches itself in mass; hairs fall off separately.

570. *Feathers are nearly allied to hairs, and consist of the quill, shaft, and web.* The quill, like the hair, takes its rise in the cellular membrane; the central portion of the shaft has a texture like cork; and the web, which usually occupies both sides of it, is composed of what are called barbes, and the sides with barbules. The colour of feathers exhibits great difference; in some birds it varies with the seasons, in others with food, and in others with the extinction of life. Like hairs, feathers are not only renewed periodically, but they are readily re-produced if accidentally destroyed. (See *Natural History of Birds*, p. 603.)

571. *Horns are regarded by some as hairs agglutinated, and forming a hollow cone.* The fibrous structure of horn may be perceived in many animals at the base, where it unites with the skin. At this part it receives the additions to its growth, the apex of the cone being pushed out in proportion as the increase takes place at the root, and on the inner surface: but horns differ remarkably from hair, in having their central cavity filled by a projection of bone, or other solid substance, from the body beneath.

572. *Of beaks, Dr. Fleming observes,* "The substance which covers the external surface of the maxillary bones of birds, is composed of horn. It varies greatly in texture and markings, according to the species. It differs from the horns of quadrupeds chiefly in this circumstance, that the colouring matter is not so completely fixed, but is probably preserved in vessels which are still in communication with the body. At least it is well known, that the colour of the bill varies with the season, and experiences considerable changes after death. This, however, is most remarkable in those birds, the horny covering of whose bills is thin, so that the colour may depend on the fluids below. Horny beaks are found on birds and many reptiles; and, in the inferior classes, in all those whose jaws are destined to cut hard substances."

573. "*Hoofs are horny envelopments secreted from an expansion of the cutis,* and much resemble horns in the manner of their growth, and by encircling an osseous extremity. They grow from the inner surface and base, and are thus fitted to supply the place of those parts which are worn away by being exposed to friction against hard bodies. Hoofs are peculiar to certain herbivorous quadrupeds.

574. "*Claws, nails, and spurs.* Claws resemble hoofs in structure and situation, deriving their origin from the skin, having a bony centre, and occurring at the extremities of the fingers and toes. The mechanism by means of which the claws are pushed out and retracted in the cat genus deserves particular notice. The phalanx to which the claw is attached is curved almost like an S, and has a sheath or groove into which the claw fits. An elastic ligament extends from the joint of the first and second phalanges to the upper edge of the third, keeping it so much bent backwards as to bring it nearly in contact with the second. The claw is consequently turned upwards and concealed, so as not to be blunted in walking. On the other hand, the tendon of the flexor muscle is inserted into the lower edge of the same phalanx, and, by bending it, protrudes the claw.

575. "*Nails differ from horns and claws in the circumstance of not being tubular*, but consisting of a plate, generally convex on the outer surface, and concave beneath. Spurs occur chiefly on what is termed the leg (*tarsus*) of gallinaceous birds. They are found likewise on the ornithorynchus. Like horns, they are supported in the centre by bone.

576. "*Horns, hoofs, and similar parts*, bear a close resemblance to one another in chemical composition. When heated they soften, and may be easily bent or squeezed into particular shapes. They consist of coagulated albumen, with a little gelatine; and, when incinerated, yield a little phosphate of lime."

577. "*Scales*," observes the same authority, "vary remarkably in their form, structure, mode of adhesion, and situation, in different animals. In general they are flat plates, variously marked. In some cases each scale consists of several plates, the lowest of which are largest, so that the upper surface becomes somewhat imbricated.

Some scales adhere by the whole of their central surface, while others resemble the human nail, in having the distal extremity free. The composition of scales is similar to that of the cuticle, with the addition of some earthy salts. They appear to be inserted in that layer of the skin, and to resemble it in many of their properties. When rubbed off, they are easily renewed, and frequently experience the same periodical renovations as the cuticle. In some cases the cuticle may be observed extended over them, as in the armadillo; in general, however, it only surrounds the base. They derive their colour from the mucous web on which they are placed. In quadrupeds scales occur, covering the whole body like a coat of mail (in the armadillo); or on certain parts only, as the tail of the beaver and rat. In birds, the scales are found only on the feet. In reptiles, they occur on every part of the body, and are placed laterally in some, while, in others, they are imbricated like the slates of a house. In fishes, the scales are usually imbricated, having their distal edge free, and the epidermis enveloping their base." (*Philosophy of Zoology*, vol. i. p. 99.) Insects are also furnished with scales which are infinitely varied in form; the dusty matter on the wings of butterflies are but so many scales also, as the microscope will testify.

578. *Shells and crusts.* Shells consist of layers of an earthy salt with interposed animal substance; they grow by additions of new matter within and without, and are mended when injured, by a similar process, at the will of the animal. Crusts are more brittle than shells, and occur in insects, the *Crustacea*, the *Echinodeamata*, or sea-urchins, and in star-fish.

Sect. II. *The Composition and Station of the Bones of Animals.*

579. *Bones sustain the animal machine;* they also prevent pressure on the soft parts, and afford levers for the performance of locomotion. In the composition of bones, there enter periosteum, a cartilaginous basis, earthy matter, and fat or marrow. The articulated skeleton of an animal does not include all its bones; the os hyoides, which supports the tongue, the bone which enters the penis of some *Felinæ*, the clavicular bones of others, and the bony ring in the sclerotica of birds, are instances to the contrary. Neither are bones invariably white; all warm-blooded animals may have their bones tinted red by feeding them on madder. The bones of some fowls are almost black; and in some fishes, as the garpike, they are naturally green.

580. *The periosteum is a very strong investing membrane to bones,* fibrous in texture, and though demonstrably vascular, and very sensible, it is but little disposed to reproduction. The cartilaginous basis of bones consists of gelatine and coagulated albumen; and, so compounded, it affords a convenient receptacle for the earthy matter, which is to form the solidifying principle of the perfect bone: thus, when the earthy matter, which is principally phosphate of lime, is removed by chemical solution, the form of the bone remains unaltered. The oil, fat, or marrow, of bones, is deposited in cavities called *cancelli*, which are most considerable towards the centre of the bone. The marrow is of different consistencies in different animals; in the whale it is perfectly fluid, whereas in the ox it is nearly solid. There is little of it in birds, the cavities in their bones being principally occupied by air, to render them light and buoyant, except in the heavy aquatic birds.

581. *Bones do not solidify in a uniform degree in different animals, nor even in the same animal.* In most quadrupeds they are very compact; in birds, eminently so; in reptiles, spongy and porous; while in some fish, as the shark and skate, they are cartilaginous. In quadrupeds their density appears proportioned to the several natures of the animals they belong to. In such as were evidently designed for great exertions, or for very rapid progression, they are singularly hard and solid: those of the racer, for instance, will be found more dense than those of the cart-horse; greater compactness of structure being necessary in the race-horse, to enable his bones to resist the powerful action of his muscles upon them. It was also important in this case that they should be of moderate bulk only, in order to decrease the resistance which an extended superficies would offer to the action of exterior resistances. In the cart-horse, on the contrary, where cultivation and geographical adaptation have so greatly extended his dimensions, the bones, though very large, are proportionally less dense than those of the race-horse, by which a more extensive surface for the attachment of muscles, ligaments, and tendons, is afforded, while the increase of dimension is not here inconvenient. In like manner the bones of the lion and tiger are extremely compact, in unison with the immense power of their muscles, and their extraordinary occasional exertions. It may also be observed that, in the greyhound, the bones will be found more dense than those of the mastiff, as the necessary rapidity of the former required vast power in the smallest possible bulk. To combine strength with a necessary surface of attachment and support of soft parts, the centres of all long bones are very dense, while the extremities are cancellated; and it is another wise provision, that these cancelli should be formed of fibrous matter, for the osseous fibres in all cases take that direction which is best adapted to support the pressure on it. The head of the thigh bone, as we know, stands obliquely off from the shaft, by which the weight imposed must bear somewhere about the inner trochanter. Now, if the former be sawn through very carefully with a very fine saw, it will be seen that the bony fibres converge to the line of gravity, as may be seen by referring to the skeleton of the horse. (See *fig.* 111. p. 172.)

582. *The stages of consolidation of the bones of the body are not the same in each bone,* neither are they uniform in the different classes of animals; but, in all, those individual bones are soonest ossified whose use can be the least dispensed with. It will be found that the bones

of the indigent tribes, as kittens, puppies, the young of rabbits, &c., are much less consolidated at the birth than they are in the foal, calf, lamb, or other young animals, which are intended to accompany their parents in search of food from their birth. The consolidation of bones appears to be hastened by any thing that permanently quickens the circulation of the blood: thus the animals of hot climates do not attain to the size of those of more temperate regions; the adult age of horses even in India takes place somewhat sooner than in England. It is thus also that the early exertions of two and three year old colts, in our own country, check their growth by hurrying on the circulation of the blood, and likewise by exciting a sympathetic effect in the constitution to a more early solidification of the bones to meet the exertions so unnaturally required of them. The crowded manufactories in which children are immured, by hastening the consolidation of their bones, checks their growth by the heat and excitement generated. In France it is common to apply this principle to produce a diminutive breed of dogs; for which purpose daily doses of brandy are administered, which, keeping up increased arterial action, occasions an early deposit of the ossific matter of their bones, and by that a stop is put to any further development of the general bulk of the body.

583. *Bones increase in size*, but their accretion is not effected as in shells, scales, or horns, by the addition of layers to the internal surface, but by the expansion of the cartilaginous basis, which becoming completely filled with this earthy deposit, the further increase of the bone is arrested. It is a deficiency in this earthy base that produces the disease in the children of crowded neighbourhoods called rickets. Though less common, the same complaint may be seen in dogs, and other quadrupeds of the lower orders, when badly fed, or when huddled together in masses, and thereby made to breathe a contaminated atmosphere. It was by a continued breeding from parents of this stamp that we gained a race of *wry-legged* terriers, so useful, in rabbit hunting, to the gun. In the wretched *kens* of the bull baiters and dog fighters of Tothill-fields, and other equally low neighbourhoods, it was not uncommon to observe their best breeds of bull-dogs thus formed. The writer has seen a rickety tendency in the young foals of both horses and asses, which had been bred under somewhat similar circumstances. The *ancon*, or bow-kneed sheep, probably owes its deformity to this source; nor is it uncommon in rabbits. Bone is capable of reproduction, which is a beneficent provision of nature, otherwise every fracture must produce a cripple. A broken bone is thus consolidated: from the broken ends, there issues a cartilaginous effusion, into the cells of which earthy matter is deposited, and eventually the junction is completed.

584. *Cartilage*, which is an important appendage to bone, is smooth on its surfaces, fibrous in its structure, and elastic in its properties. It covers those parts of bones which are exposed to friction, as the joints, and is thickest where the pressure is greatest. Its polished surface facilitates motion in the moveable joints, and where elasticity is required, without considerable motion, it becomes also a bond of union. It is thus that the sternum or breast bone is united to the ribs.

585. *The articulations of bones may be divided into those of true joints and motionless joints*, or, in the language of anatomists, into diarthrosis and symphysis. In *true joints* the articular surfaces are encircled with cartilage, and the synovial membrane inserted between the ends of the bones, and forming the joint into a close bag, into which, when perfect, nothing from without can enter, and from which nothing can escape. Into this bag the lubricating liquor, termed synovia, is conveyed. This "joint oil," as it is vulgarly, but expressively, called, is secreted by the membrane in the interior; which, as it in some cases appears folded like little bags, has given rise to the term *bursæ mucosæ*, or mucous capsules of the joints. Any wound into the interior of a joint, which not only evacuates the synovia but admits the air within, is always followed by a very high degree of inflammation; and unless the wound be quickly closed, and the escape of the further secretion be stopped, an anchylosed joint is the least that can be expected; death is very common in such cases: hence so many lives are lost among horses by broken knees. In the motionless junctions of bones the connecting surfaces of the opposed ends come into close and permanent contact, as the edges of the skull bones, the bones of the pubis, and the two branches of the jaw, in quadrupeds. *Ligaments* are also an appendage to bones, and serve to strengthen their union with each other by their dense and tenacious structure, at the same time that their elasticity and flexibility lessens concussion and prevents a jarring sensation in the motions. "Ligaments have their insertion in the periosteum and bone, with which they are intimately united. The motions which the joints of this kind are capable of performing, may be reduced to three kinds — flexion, twisting, and sliding. In flexion, the free extremity of the bone which is moved, approaches the bone which is fixed, describing the segment of a circle, whose centre is in the joint. In twisting, the bone which is moved turns round its own axis, passing through the articulation. In sliding, the free extremity of the bone moved approaches the bone which is fixed in a straight line."

SUBSECT. 1. *A comparative View of the Skeleton of Animals.*

586. *The whole assemblage of bony parts is called a skeleton*, and widely as the exterior figures of mammiferous animals, as man and all that give suck, birds, reptiles, and fishes, differ in appearance from each other, a comparison between their several skeletons will show that they are all formed after one model, as will be evident by referring to *fig.* 110. p. 170., which offers a skeleton of each class; as *a*, that of a man; *b*, of a bird; *c*, of a frog; *d*, of a fish. We may first remark on these as a whole, that a vertebral chain is common to all; the bones of the arms and hands of man find close similitudes in the anterior extremities of *Mammalia;* the wings of birds; the forefeet of *Amphibia*, as the frog; and equally so in the pectoral fins of fishes; in mammals most resembling fishes, the *Cetacea*, are distinctly recognisable a scapula or shoulder-blade, humerus or arm bone, radius and ulna or fore-arm, carpal or wrist bones, and metacarpus or hand bones, as well as digital bones or fingers.

The bones which compose the wing of the bat are modelled after the human hand, and form an organ also prehensile. In the lower extremities of man, and the hinder extremities of these various classes, the bony fabric is also fashioned after one common type.

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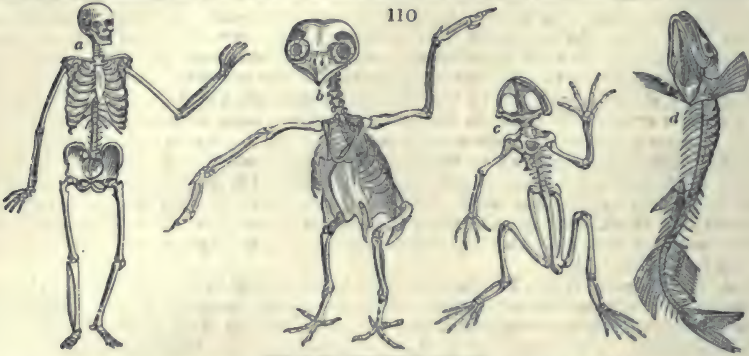

VIEW OF THE SKELETON OF ANIMALS.

587. *The skeletons of Mammalia,* however, we must observe, exhibit many important peculiarities, not only as compared with the skeleton of the human subject, but with each other. This class has great varieties in the modes of locomotion, and consequently in the organs by which these are effected; nevertheless, in all the deviations in the mechanism of the skeleton, the quadrumanous tribe seems to be the model. But it may be easily observed, that the parts which constitute the arm and hand, or are necessary to make a prehensile member, are found in those that employ the extremities for walking, flying, or swimming, in a greater or less degree, changed or concealed; although such members have so different a form externally. The long tail also of some *Mammalia* has a representative in the short coccyx of man, and some apparently tailless quadrupeds. Vertebrated animals form the most important division of the animal kingdom, and the admirable mechanism exhibited in their bony fabric cannot but excite our wonder as well as admiration at the contrivance displayed for executing the most intricate operations by the simplest means.

Chap. III.

Of Quadrupeds, their Station and Conformation.

588. *The zoological station of quadrupeds,* in consequence of their importance, has placed them in immediate succession to man, the head link of the great chain of animated nature. Quadrupeds are commonly ranked under the term *Mammalia,* or animals which suckle their young; but from a certain apparent determination in nature, that all our systematic arrangements shall be liable to some discrepancy, an objection may be made to the critical correctness of each of these common terms. To quadrupeds it may be objected, that as some insects have four legs only, they are strictly quadrupedal also. Of *Mammalia* it may with equal justice be observed, that some mammals have neither members for walking, nor are they terrestrial animals, although they suckle their young after the manner of beasts. To the term mammiferous quadrupeds, however, there can be no objection on the score of critical accuracy, and some naturalists use it on that account.

Sect. I. *The Modern Division, or Station, of Quadrupeds.*

589. *Quadrupeds admit of a natural division into two tribes:* 1. "Those whose extremities are divided into fingers or toes, scientifically called *Unguiculata,* from the Latin word *unguis,* a nail; 2. Those whose extremities are hoofed, scientifically called *Ungulata,* from the Latin *ungula,* a hoof."

590. *The extremities of the first tribe having unguiculated fingers, or toes,* enable the animals greatly to vary their power of action, and give them a capability of grasping objects, of climbing, of burrowing, and of rending to pieces their food, or tearing their enemies. The members of this tribe present great variations in their modes of procuring sustenance; which variations are marked by some structural peculiarities in the extremities, usually accompanied by certain other singularities in the form of the cheek teeth. It cannot escape the

observant eye that some extremities are evidently formed for grasping, being provided with a thumb which acts in opposition to the fingers. It is owing to this that monkeys are such expert climbers, the thumb in them being equally effective on both the upper and lower extremities. With man, on the contrary, this advantage is confined to the upper extremities; and he alone is furnished with what can be strictly called a hand, for it is his thumb only which forms a complete antagonist to his fingers. Monkeys and bats, having the quality of prehensility in all their extremities, are called *Quadrumana*, or four-handed, as man, herein defective, is called *Bimana*, or two-handed. The remaining orders of the *Unguiculata*, or first tribe, having no thumb capable of free motion, are distinguished by the form of their molares, or cheek-teeth.

591. *The Quadrumana, and the Carnivora, or flesh-eating quadrupeds*, are furnished with molar, or grinding, or cheek teeth, with canine and cutting teeth. The *Plantigrada*, which feed partly or wholly on flesh, are furnished with cheek teeth, also formed for cutting that substance. Their jaws likewise are so articulated as to move in the manner of a pair of scissors, and are confined in action to opening and closing again in a vertical direction. Some *Carnivora* and *Quadrumana* walk on the soles of the feet, as bears; such are called *Plantigrada*. Others progress more on the extremities of the feet, as cats, and are called *Digitigrada*. The feet of some are webbed, as seals, and are thence called *Palmata*. The remaining animals of the first, or fingered tribe, want the canine teeth, and have two large cutting teeth above and below in the front of the mouth, as rats and rabbits. They are called *Rodentia* by Cuvier, which signifies gnawing, and *Glires* by Linnæus. It is the chisel-shaping of these teeth that makes their bite so painful and so deep. These teeth, being essential to the life of the animal, are able to repair their waste by an extraordinary growth, commensurate with their extraordinary abrasion. Cuvier makes another division, called *Edentata*, some of which are defective in the incisive teeth, as the sloths, and some want the canine teeth, as the dasypus or armadillo; and some are even destitute of teeth altogether, as the anteaters. Amongst the *Unguiculata*, or fingered quadrupeds, there are very few which are used by man as food. Many of them are noxious, or ferocious, but some are very interesting to the sportsman, as the stag, the fox, hare, rabbit, &c. The dog also deserves a separate niche: the faithfulest of the faithful, his intelligence, his vast powers of speed and duration, are willingly exerted in the service of man; and we have only to picture to ourselves a man cast away on a desert island with a dog, and another so circumstanced without one, to be at once struck with the value of this four-footed type of fidelity and sagacity.

592. *The extremities of the Ungulata* (hoofed tribe) are exclusively employed to support and move the body. They are all herbivorous, feeding on vegetable matter. If on grass, they are called granivorous; if on grain, graminivorous: but these latter are rather arbitrary distinctions, for the *Herbivora* can most of them subsist on grain, and the *Granivora* will support themselves on gramineous matter. The teeth of most *Herbivora* are fitted for the mastication of grain or roots, by having a flattish round upper surface; and their jaws possess the capacity of moving in the same plane. Their teeth are also of unequal hardness, so that they have the power of crushing, like the unequal surfaces of a millstone. (See *Teeth of the Elephant and Horse*, p. 176.) Cuvier divides the *Solidungula*, or hoofed animals, into 1. *Pachydermata*, or thick skinned, amongst which are the horse and the elephant; and 2. *Ruminantia*, or those which ruminate, or chew the cud, as the ox family, the deer tribe, the camel, the giraffe, together with sheep and goats in all their varieties. And if out of this list the British sportsman finds deer hunting alone offered to his especial notice, let him turn an eye to his brother sportsmen in *extra* European countries, and let the tales we have yet to tell of the chasings of the bison, the racings of the camel, and the pursuit of the vast variety of wild deer under the names of antelope, springbok, &c., &c., excite his admiration for the *Ruminantia*, independent of the regard he may have to his beef-steak or his mutton-chop.

SUBSECT. 1. *The Bony Fabric of Quadrupeds, exemplified by the Skeleton of the Horse.*

593. *In the skeleton of the horse* (*fig.* 111., p. 172.) *a*, the atlas, or first neck vertebra, between which and *b* we observe the occipital, the largest of the skull bones; *b*, the parietal or bony walls of the skull; *c*, the frontal or nasal bones of the face; *d*, inferior or anterior maxillary bones, which receive the nipping teeth, (united in man with the next); *e*, the superior maxillary, are the largest bones of the face, and hold all the grinders of the upper jaw; *f*, the posterior maxillary or great jaw bones, which receive the lower grinders, the tushes, and nippers; *a h*, between these letters the cervical vertebræ are seen; and between *y z*, the dorsal, lumbar, and sacral vertebræ also; as the figure 1 marks the coccygeal or tail vertebræ, *x x* mark the ribs, and *z z* show the pelvis.

594. *The anterior extremities:* — *k*, *i*, *l*, the scapula; *m*, the humerus, or arm bone; *n*, the ulna; *o*, the radius, corresponding with the human fore-arm bones; *p*, the carpal, or knee bones, which correspond with the wrist bones of man; *q*, the large metacarpal bone; *r*, the small metacarpal, or splint bone; *s*, the sessamoid bone; *t*, the larger and lesser pastern bones; *v*, the coffin bone.

595. *The posterior extremities:* —3, 4, the femur or thigh bones; 5, the patella, corresponding to the knee-pan; 6, 8, the tibia, or leg bone of the human, but which in the horse is usually called the thigh; 7, the fibula, or small bone of the leg; 9, 10, the hock bones, which form the heel, ancle, and instep of man.

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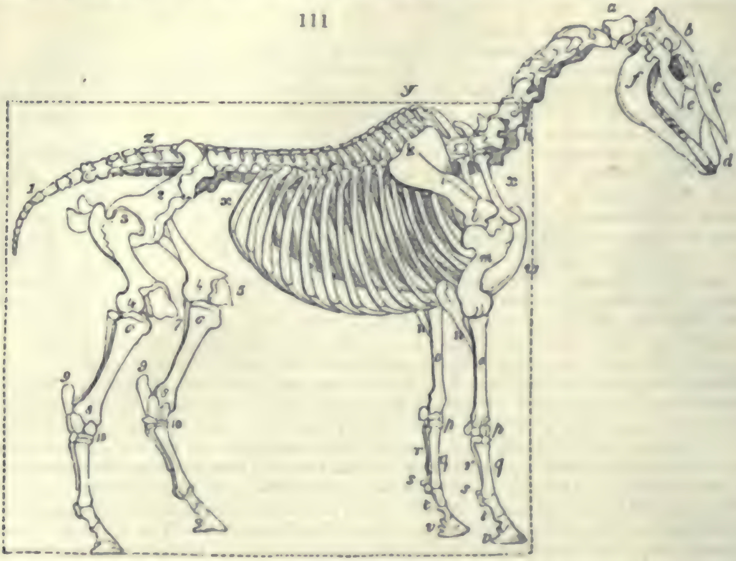

SKELETON OF THE HORSE.

596. *The cranial, or skull, bones of the horse* must by no means be considered as offering a general model of the figure of the head of most quadrupeds; for the extent of the maxillary or jaw bones in him, and indeed in all grazing tribes, lengthens the face extremely; thereby enabling them to reach their food with facility, and by the extent of surface, and advantageous placing of the teeth, to masticate it more effectually. In some brutes, as the monkey, the jaws are very short; they are in fact but little longer than in man, but the facial angle is much more inclined. In some dogs, as pugs, and bull-dogs, the jaws are also much contracted, which brings their masticatory action very near the centre of motion. In the greyhound, on the contrary, the jaws are greatly elongated, but no extraordinary diminution of strength is felt, for the principal molar or grinding teeth are still in them, not greatly removed from the same line of action found in the bull-dog or mastiff; while the pugnacious power of the canine teeth are greatly increased by the shortened jaw of the fighting breeds.

597. *Horns are appendages to the bones of the skull.* The frontal bones originate them in many horned *Mammalia*, as the ox, goat, antelope, &c.; and the cavities in many horns are continuations of the frontal sinuses. True horns are not appendages of any other bones; the thin smooth coverings in the ox, antelope, &c., are a modification of hair, and the same are the horns of the rhinoceros, which rest on tubercular prominences of the frontal and nasal bones.

598. *The frontal sinuses, or nasal cavities, in herbivorous quadrupeds,* are extensive, and their membranous lining is very vascular, and liable to inflammation, which gives all such as are domesticated, particularly horses, a tendency to catarrh, or influenza, which, if violent or long continued, is apt to terminate in glanders. In sheep and deer these cavities offer ingress to the larvæ of some dipterous insects, which, finding their way up the nostrils, torment these animals, particularly the reindeer, almost to madness. In the dog, likewise, although there is little vaulting of these bones, the frontal sinuses are sufficiently extensive to afford a large surface for the expansion of the nasal membrane, by which the sense of smelling is augmented. In distempered dogs these cavities are often filled with purulent matter; and the membrane which lines them, indeed, seems the principal seat of the disease in its early stages. The wolf and the fox own extensive frontal sinuses also, but the elephant, even in proportion to his size, has the largest of any known animal. In him, and in other animals with large heads, this cellular structure is by no means uncommon. It is seen in the ostrich and the owl, as well as in some others. By this admirable contrivance,

a considerable extent of surface is gained and also increased strength, by its offering favourable attachments to muscles and ligaments, and by removing these attachments farther from the centre of motion their forces are greatly multiplied.

Subsect. 2. *The Anatomy of the Horns of Quadrupeds.*

599. *Horn is said to partake of the nature of the gelatine of the body*, but charged with less water and more earth; and there appears to be reason in this conclusion; for if horn be placed in Papin's digestor it may be converted into jelly. A more familiar proof, but an equally cogent one (for nature seldom errs) occurs in the avidity with which dogs eat the parings of horn, as well as those cut from the feet of horses, which are of a true horny nature. The analogy of hair to horn has been already noticed, and some structural differences pointed out between them. It may also be premised that horns are of two kinds, deciduous or *false*, and permanent or *true*. The true horns are marked by transverse ridges formed by the horny accretion of each succeeding year; such at least occur in many, of which the ox family is a prominent instance. Thus, in the purchase of these, every agriculturist allows three years for the base of the horn, and an additional year for every ring above it. Horns, properly so called, do not undergo those periodical alterations or renovations which take place with hair and feathers. The deciduous antlers of deer, it may be remarked, are not true horns, but bone. (See *Anatomy of the Bones and Natural History of the Stag*, p. 519.)

600. *The horns of the rhinoceros exhibit also an instance of departure from the usual structure of this animal appendage.* "The horns of this genus (as observed by Mr. Griffith) present a singular character: they do not envelop a bony axis, like the horns of the ruminating animals, nor do they partake of the osseous nature of the horns of stags, but they appear to be formed of horny fibres, like thick hairs closely agglutinated together. "The horn of the rhinoceros," says Mr. Burchell also, "differing in structure from that of every other animal, and placed in a situation, of which it is the only example, had long appeared to me to be an anomaly very deserving of examination; and, therefore, on the present occasion" (*the first in which he had inspected one recently killed*, Editor), it was the first object of my curiosity and attention. The view which I now began to take of its structure and nature was afterwards, in the course of my journey, further confirmed by the following mode of reasoning, which, to render it less complicated, I shall confine to the class of *Mammalia*, or, as it is more commonly called, quadrupeds. Dispersed over the skin of all animals are pores, which I have supposed to secrete a peculiar fluid, which may be designated by the name of corneous matter. This secretion, or fluid, is designed by nature for the forming of various most useful and important *additamenta*, all of which continue growing during the whole life, have an insertion not deeper than the thickness of the skin, and are further distinguished by the absence of all sensibility and vascular organisation, being purely exuvial parts, like the perfected feathers of birds. In all these parts, the growth takes place by the addition of new matter at their base. When these pores are separate, they produce hairs; when they are confluent and in a line, they produce the nails, the claws, and the hoofs, the fibrous appearance of which naturally leads to the supposition of their being confluent hairs; and the same may be said of the scales of the manis. The quills of the porcupine, hedgehog, and other animals, may be regarded as hairs of extraordinary size. When the pores are confluent and in a ring, they furnish the corneous case of the horns of animals of the ruminating class; and, when confluent on a circular area, they supply matter for the formation of a solid horn, such as we see on the rhinoceros." The term horn is usually restricted to the coverings of the projections of the frontal bones of oxen, sheep, and similar quadrupeds; but various appendages of the skin, composed of the same materials, and equally permanent, although seated on other parts of the body, may with propriety be included under the same appellation; among these may be enumerated beaks, hoofs, claws, nails, and spurs."

601. *The horns of quadrupeds* are thus ably described in Mr. Gore's translation of *Carus's Introduction to Comparative Anatomy*, p. 199.: — "The frontal bones of some *Mammalia* present these remarkable excrescences, of which kind are those of sheep, goats, and oxen, covered with a layer of horn, the little horns of the cameleopard beset with hair, the posterior of the two horns composed solely of horny texture in the two-horned rhinoceros, and the antlers of deer. Of these various growths, the latter (antlers) are supported merely by a short, solid, bony process of the frontal bone, on which they are yearly reproduced, growing with great rapidity. The substance of the antler is distinguished from bone by its containing a considerable proportion of horny matter; the mode of its formation is nearly as follows: As soon as the testes begin to swell in May, the branches of the external carotid, running towards the root of the antler, increase in size; the vascularity of its surface is increased; and a process resembling inflammation succeeds, by means of which the antler is thrown off like a dead part. A soft and very vascular swelling takes its place, from which the new antler gradually sprouts forth. It is at first soft, and covered by a vascular hairy membrane, which subsequently peels off. It continues to grow, gradually becoming hard by the deposition of earthy matter, so as to attain its full perfection nearly about the same time

that their testes reach their utmost size. If the animal be castrated when the horns are entire, they are never lost; and, on the other hand, castrating the fawn wholly prevents their appearance. (*Grant.*) If castration be performed during the time of their growth, they fall off, and are again reproduced of a smaller size, remaining permanently, though without ever attaining their proper degree of hardness. The sympathy of these organs with the sexual parts establishes an analogy between them and the hair of the beard and pudenda, which in man present peculiarities in some degree similar.

602. " *True horns are however differently circumstanced;* they consist of a large bony projection from the surface of the frontal sinuses, and covered externally with a stratum of horn: they are permanent. The little horns of the giraffe, with their permanent hairy coverings, evidently form the connecting link between antlers and proper horns. The true relations of horns and antlers present much uncertainty. May we not find the real cause of their production in an analogy between them and the horny or bony antennæ of insects and *Crustacea?* Is it not remarkable that antennæ being, in many instances, olfactory organs, horns should also contain within them elongations of the olfactory cavities? and are not the former antennæ also attached to the horny or bony cranium?" (For some further account of the growth of horn generally, and that of the rhinoceros particularly, by Mr. Burchell, see paragraph 600.)

603. *The horns of quadrupeds are subject, like other parts, to many anomalies*, one of which is, that they are occasionally found in the females of quadrupeds, where they are naturally confined to the male; thus a horned doe has been seen Horns have also been found, it is said, on animals usually known as hornless. Blumenbach has collected about twenty accounts of *reputed* horned hares, with small branches, like those of the roebuck; but he seems himself sceptical on the subject. Query, may they not have been the horns of the small antelope? Horns are however to be found in our museums of different sizes and figures, which are known to have been taken from animals of the hornless breeds. The polled breeds of cattle form another curious anomaly. The nasal horn of the rhinoceros is also well worthy of notice.

604. " *The annual reproduction of horns*," says Blumenbach, " constitutes, in many points of view, one of the most remarkable phenomena of animal physiology. It affords a most striking proof, first, Of the power of the nutritive process, and the rapid growth which results from this process in warm-blooded animals; for the horn of a stag, which may weigh a quarter of a hundred-weight, is completely formed in ten weeks. Secondly, Of the remarkable power of absorption, by which, towards the time of shedding the old horn, a complete separation is effected of the substance, which was before so firmly united with the frontal bone. Thirdly, Of a limited duration of life in a part of an animal, entirely independent on the life of the whole animal, which in the stag extends to about thirty years. Fourthly, Of change of caliber in particular vessels; for the branches of the external carotid, which supply the horn, are surprisingly dilated during its growth, and recover their former dimensions when that process has ceased. Fifthly, Of a peculiar sympathy, which is manifested between the growth of the horns and the generative functions; for castration, or any essential injury of the organs of generation, impedes the growth, alters the form, or interrupts the renewal of the horns."

605. *Of the bones of the skull of the horse* it may be further remarked, that the temporals are divided into a squamous and petrous portion, within the latter of which is situated the internal ear; and to the former the posterior or lower jaw articulates. The sphenoid and ethmoid bones are hollow and irregular, serving to intersect and attach the others; and also to assist, by their cavities, in extending the surface of the pituitary or smelling membrane.

606. *The bones of the face are ten pairs and two single bones.* The nasal pair (*c*, *fig.* 111. p.172.), within their union, hold the septum narium, or long cartilaginous plate which separates one nostril from the other. These bones also greatly assist to extend the surface of the olfactory organ. In the old heavy breeds it was very common to see these bones arched outwards; but in the improved breeds, particularly in those approaching full blood, it is not uncommon to find them slightly curved inward. The fossæ within these bones are the principal seat of glanders. The two angulars form a considerable portion of the orbits of the eyes. The two malar, jugal, or cheek bones, occupy also a portion of the orbits. The superior maxillary bones (*e*) are the largest of the face bones, and contain all the upper molar teeth. The superior palatines, the inferior palatines, the pterygoids, the two anterior, and the two posterior turbinated bones, with the vomer or ploughshare, make up the remaining facial bones, with the exception of the posterior maxillary or lower jaw bone (*f*), which, on its anterior edge, is pierced, to lodge the teeth; extending at the upper part into two angular branches, each of which ends in two processes and an intermediate groove. The superior of the processes articulates with the upper jaw. This bone throughout shows the most admirable mechanism; the molar or grinding teeth, on which most is dependent, and whose exertions are greatest, are placed near the centre of motion; and as the upper jaw in all animals is fixed, or nearly so, it was necessary that the lower should have considerable extent of motion for the purpose of grinding, and it is accordingly so formed as to admit of motion in every direction. The os hyoides is a bone situated within the head, at the root of the tongue, to which it serves as a support, and for the attachment of muscles.

Subsect. 3. *The Teeth of Quadrupeds.*

607. *The importance of the teeth as organs of mastication, and weapons of offence and defence*, renders some particular notice of them necessary. They have also a further claim on our attention as offering, from their fixed character in each variety, those distinctive marks by which the naturalist determines either the identity or the difference between the

animals he examines, and also the ages of some of them, as horses and sheep, as will be more fully noticed hereafter. A writer in *The Menageries* observes, — " It was not a vain boast, when a zoologist exclaimed, ' Show me the tooth of an animal, and I will inform you of the history of an animal I never saw.' By the largeness of the tooth he could judge of the relative size of the beast which bore it; and by the form of the tooth he could tell whether it was fitted to grind grass or to tear flesh; and therefore whether it belonged to an herbivorous or a carnivorous species." (Vol. i. p. 122.) The teeth are further important as furnishing an indication of the age of quadrupeds generally. The long discoloured rodent teeth of the hare and rabbit, when shot by the practised sportsman, are certain marks that effectually exclude them from entering their own larders. Among our domestic cattle the teeth and horns are unequivocal criteria of their age; and, except under the artifices of very experienced jockeys, the degree of waste in the incisive or nipping teeth of the horse may be depended on for the same purpose. (See *Exterior Conformation of the Horse*, p. 260.)

608. *There are three sorts of teeth found in quadrupeds;* first, the incisive, or cutting, or nipping teeth; secondly, the canine or lacerating teeth, sometimes called tushes or tusks; and thirdly, the molar or grinding teeth. These three varieties are not however present in all quadrupeds. The horse, for instance, has all, but the mare has nippers and grinders only. The specialties in figure, number, and placing of the teeth, vary also greatly in the different genera of quadrupeds, but it will be invariably found that, whatever peculiarities may be present, they will, on attentive examination, exhibit an admirable adaptation to the wants and convenience of the animals in whom they are observed. A certain uniformity is however necessarily preserved in the general placing of the teeth in all. A parabolic line is formed by their indentation in the alveolary sockets, which the French have called the *dental arcade.*

609. *In the composition of the teeth of quadrupeds three different substances appear:* the osseous portion, the enamel, and what is called by some anatomists the petrous crust, and by others the cement. In the nippers and tushes of the horse, the enamel covers the whole of the free portion, *i. e.* that part not covered by the gums, or sunk in the alveolary sockets. In the grinders, on the contrary, instead of covering the surface of the table generally, we see that it forms distinct penetrating layers. The osseous part of the teeth is more compact and hard in quadrupeds than in man. It would also appear that the osseous or bony moulds of the teeth are secreted by the pulp in layers; for in feeding young pigs with madder, the osseous layers deposited during such feeding were stained red, whereas those formed both before and after this food was given were of the natural colour. Of the dental components, the enamel is by far the hardest and most dense; it also contains less animal matter, and, when examined closely, appears fibrous. It will yield fire with steel, like flint, and is hardly to be acted upon by the best tempered files; it never occurs alone, but always as a coating to the ivory of the tooth. In many of the rodent or gnawing animals, as beavers, hares, rabbits, rats, &c., the enamel, instead of surrounding the inferior incisors, which are two in number, and thin and compressed in shape, is merely spread over the front of these teeth; by which arrangement it is that, to the latest period of their lives, a sharp cutting surface remains, and without which specialty these animals must starve in old age. The petrous crust was formerly supposed peculiar to quadrupeds, not having been detected in human teeth; to which circumstance the superior strength and aptitude to resist disease in the brute teeth was once attributed. Sir E. Home considered it as nearly of the nature of common bone; but it has other characters which make the French term of *cement* the most appropriate to it. Had Sir E. Home considered it as of the nature of the callus formed during ossific inflammation, he would, we think, have more nearly approached its true character. Like the true callus of bones, it is always deposited in the interstices or depressions of the teeth which it fills up, and thus gives consistency and figure to the whole. Cuvier is of opinion that it is a secretion from the dental capsule, which opinion he was led to form by observations made on the development of the teeth in the elephant, which he had the opportunity of doing.

610. *The abrasion of the enamel is very commonly supposed to be the signal for a rapid decay of the teeth,* but comparative anatomy shows that such opinion is founded in error. Were a preservative property the principal use of the enamel, the teeth of both man and beast would be seldom free from decay. In both the one and the other, parts of the teeth are entirely deprived of it, and in neither does decay take place at such parts. The depressions on the broad surfaces of the horse molar teeth are purposely formed from their first appearance without enamel; and on the surface of the incisors or nippers it early wears away, and yet caries is almost unknown to both. The human incisors also wear from a sharp edge to a flattened surface, which is entirely uncovered by enamel; but on this surface caries seldom occurs: on the contrary, when these teeth decay, the disease usually commences at the neck of the tooth over which the enamel is thickly incrusted. The first carious spot usually seen in the human molar teeth is in the deep depressions on their semi-incisive grinding surface, where the enamel can suffer no abrasion: add to which, that decay in a tooth may generally be stopped, if the whole of the diseased portion be filed away. Some tribes among the Indians, remarkable for the soundness and goodness of their teeth, always keep them filed to a point; we therefore learn, by collating these facts, that the enamel of the teeth operates little in preserving them from morbid decay; but that its principal use is, by its extreme hardness, so to temper the teeth, as steel tempers iron, that they may resist the impressions of constant mastication, and make the wear of these organs commensurate with those of the body in general.

611. *The incisive or lacerating teeth always occupy the front of the mouth.* In the horse family throughout there are six wedge-shaped incisors or nippers above, and six below. The dog (*fig.* 112.) has six cutting teeth above and below, two canine above and below, and grinders to each side, six above and four below. To the principal canine teeth of some bears there are superadded smaller incisors behind the larger. All horned ruminating animals are without upper incisive or nipping teeth, except the stag, who presents imperfect rudiments of them, which, being placed there, keep up the chain of connection between the horned and the hornless *Ruminantia.* The elephant, the pecora, and the African rhinoceros, are wholly without them; although they are found in the Asiatic rhinoceros. The kangaroo, on the contrary, has several incisors in the upper jaw, and but two only in the lower. These teeth, in others of the *Rodentia,* or gnawers (the saltigrade of some naturalists) exhibit a great peculiarity by their rapid and continual attrition, as well as by their continued reproduction. (Figured illustrations and further descriptive matter will appear when we treat on the *Age of the Horse,* p. 271.)

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INCISIVE TEETH OF THE DOG.

612. *The canine or lacerating teeth of quadrupeds are of various sizes and shapes,* according to the uses they are to be put to; thus, in the horse family, where they are merely organs of similitude, they are small. These teeth are most developed in the digitigrade tribes, of which the feline and canine tribes are examples; while the hyæna, which connects the two, is a still more prominent one. The tusks, or lacerating teeth, of the horse are permanent. In the dog, on the contrary, these teeth are renewed, and in all the *Felinæ* likewise. In this latter genus they are without doubt important instruments of defence; but in the horse they are neither defensive nor pugnacious. In the elephant we have instances of a monstrous weapon in his tusks, as well as in the boar and hippopotamus. The ivory obtained from the morse, the dugon, and the narwhal, are gained from the canine teeth of these animals.

613. *The molar or grinding teeth of all quadrupeds are situated in the back part of the mouth,* being there near the centre of motion, and advantageously placed as regards the action of the molar muscles, assisted also by the tongue in placing the edible matters between the grinding surfaces. This grinding surface of the molar teeth of the horse and other graminivorous quadrupeds presents an undulating or zig-zag line, formed by the osseous substance of the tooth and enamel, encompassed by the crusta petrosa, as will be hereafter more fully exemplified. The cavities in the molars of the ruminating quadrupeds are larger than in those of the horse. The grinders in the elephant present the most complete example of the construction of graminivorous teeth; but it is not a little remarkable that so great a difference between the disposition of the dental plates should be seen between those of the Asiatic (*a*) and those of the African (*b*) elephants (*fig.* 113.). The extinct mastodons, although without doubt a species of monstrous elephant, presented certain remarkable peculiarities in their molar teeth, the tops of which were furnished with thick conic points, commencing from the base where they issued from the gums; which points in their dentition present disks of a size proportioned to the wearing of the points. This confirmation, which is also observable both in the hippopotamus and the pigs, has given rise to the mistaken idea that the mammoths were carnivorous.

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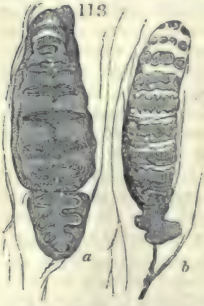

MOLAR TEETH OF ELEPHANTS.

614. *The construction of the true grinding teeth of quadrupeds* is admirably adapted to the ends required of them; the uneven surfaces, acquired by the irregular wear of substances of such different degrees of density, well fits them to act as a mill on the matters which form the food of the graminivorous quadrupeds. Every other part of the jaw also is framed to favour the action of grinding, and the slightest inspection of the articulation of a brute jaw, separated from the body, would enable a naturalist to determine whether it belonged to a carnivorous or herbivorous animal. When the articulation is so formed as to admit of vertical motion only, it may safely be determined to belong to one of the *Carnivora;* but when it appears endowed with both vertical and horizontal motion, it will be found to have formed a part of an animal of the herbivorous order. We need but watch the dog gnawing his bone by the side of the cow chewing her cud, to be convinced of the differences of action between them.

615. *The succession of the teeth in quadrupeds is nearly the same with that of the human subject.* There is a primary milk or shedding set; and a secondary adult or permanent set. The primary dentition commences in most *Mammalia* before birth, and when formed is gradually replaced by the permanent set at the adult period. This gradual succession prevents the animal suffering that inconvenience which would occur were the whole to be changed simultaneously. In the elephant, a very remarkable mode of dental succession

exists, which is thus described by Mr. Corse.—"There is never more than one grinder at a time found in each ramus of the jaw. The anterior one is gradually worn away by mastication; its fangs and alveolus are then absorbed, the posterior tooth coming forward to supply its place. As this goes through the same stages as the preceding grinder, a third tooth, which was contained in the back of the jaw, appears through the gum, and advances in proportion as the destruction and absorption of the other proceed. The same process is repeated at least eight times, and each new grinder is larger than that which came before it. The first or milk grinder is composed of four transverse plates or denticuli, and cuts the gum soon after birth; the second, which has eight or nine plates, has completely appeared at the age of two years; the third, formed of twelve or thirteen, at six years. From the fourth to the eight grinder, the number of plates varies from fifteen to twenty-three, which is the largest hitherto ascertained. The exact age at which each of these is completed has not yet been made out; but it appears that every new one takes at least a year more for its formation than its predecessor. (*Phil. Trans.* 1799, part 2.) Something of a similar kind is observed in the wild boar and the *Sus Æthiopicus*, but to a less extent.

616. *The varieties in the forms of the teeth are great*, but in each group of animals the figure best suited to the habits of its members will be invariably found in place. In the *Rodentia*, or gnawers, there are usually two prominent incisors only to each jaw, but these have so thin and sharp an edge as to fit them for a very active attack on wood or other hard matters. We see this power exemplified in the holes made in boards, &c., by rats and mice, and in the extensive barking of the trees by rabbits and hares. Teeth, thus formed, and thus actively engaged, must necessarily wear away very fast; but nature has provided a resource against the dangers of total destruction, particularly in those of the lower jaw, which are the most employed. Each of these has an enormous root, which, containing a large vascular pulp, is always pushing the tooth forward as the wear requires a new portion. If by any chance one of this gnawing tribe is forced to live on soft food, this extensive growth of the teeth, going on without the accustomed wear, is such, that at last these teeth will protrude from the mouth and even penetrate the skull. Such monstrosities are not uncommon among hares, rabbits, and guinea-pigs. (See *Loudon's Magazine of Natural History*, vol. ii. p. 134., where this monstrosity is well figured, and instructively treated.) We have seen similar instances in rats; and when cases of this kind fall under the inspection of persons not conversant with comparative anatomy, they excite more surprise than the circumstance demands, for a similar effect may be produced at any time in any member of the *Rodentia*, either by extracting the upper incisors, or by feeding the animal on succulent food only, and carefully preventing it from gnawing any hard substances.

SUBSECT. 4. *The Bones of the Trunk of Quadrupeds.*

617. *The trunk of the skeleton comprises the spine, the pelvis, and the thorax or chest.* The articulated skeleton of a quadruped does not usually contain all the bones, a few being detached, having no other connection than with the soft parts, of which the *hyoid*, or bone to which the muscles of the tongue are attached, is an example.

618. *The spinal column of the horse* (*fig.* 111.) is made up of seven cervical, eighteen dorsal, six lumbar, and five sacral vertebræ, with the addition of thirteen or fourteen small tail bones. The spinal bones are thus divided, on account of the varieties they present; they have however some characters in common. Each is composed of a spongy bony body, with protruded points called processes, which processes unite to form a hollow, through which the spinal marrow is transmitted; and by some of these processes the vertebræ are articulated with each other, as well as by their bodies; by which their strength as a column is much increased. Though but little motion exists between any two vertebræ, yet the flexibility of the whole spine is considerable, without however detracting from its strength.

619. *The cervical or neck vertebræ* (*a h*, *fig.* 111.) *are seven in number*, and the uniformity observed in nature's works is in no instance better displayed than in the number of these bones; for (a probable exception in favour of the three-toed sloth being admitted), they are invariably seven, and that, whether the neck be as short as that of the mole, or as long as that of the giraffe. The first of these vertebræ (*a*) cannot, with as much propriety as in the human, be called the atlas, the head being rather suspended *from it* in most quadrupeds, than supported *on it;* but its connection with the skull is nevertheless equally intimate and strong, by means of its articular cavities, into which it receives the two condyloid or cup-shaped processes of the occipital bone. Posteriorly, it articulates with the second neck bone, receiving its odontoid, or tooth-like process, into its cavity. These articulations are greatly strengthened by a mass of fibrous matter, which occasionally forms the seat of pole-evil in the horse. As the union of the cervical column with the skull required extreme strength, combined with great freedom of motion, the first vertebra is purposely unfettered with any attachment to the powerful mass of suspensory ligament which so closely embraces all the rest. Between the first and second neck-bones the spinal marrow, for a small distance, is not

covered by bone. (See *Skeleton*, p. 172.) It is into this unprotected part that butchers plunge a pointed instrument when they pith an animal, which, by puncturing this most important nervous rope, instantly deprives the object of all power of resistance, and probably of sensation.

620. *The dorsal vertebræ, or back bones, of the horse* (*y*, *fig.* 111.) are, in most cases, eighteen; now and then nineteen are found, which variation appears to be in unison with nature's general intention as regards these particular bones, which are not observed to be limited to any definite number throughout the quadrupedal groups. In all, however, the number is determined by that of the ribs which they support. Thus the dog, and most others of the *Carnivora*, have thirteen, as well as most of the *Rodentia*, *Ruminantia*, and *Palmata;* the elephant has twenty, the tapir the same number, and the unan twenty-three. It may be observed, that in the horse, the giraffe, camel, and other *Pecora*, as well as in almost all the grazing tribes, the dorsal vertebræ are particularly characterised by the extreme length of their spinous processes. These bony prolongations in the horse form the withers, and their upper extremities afford not only a large surface of attachment to the cervical ligament, but their length forms them into powerful levers when acted on by the muscles, in producing the motions of the fore limbs. Thus we become informed why elevated and well placed withers in the horse bespeak safety and celerity in the progression of the animal, from the greater elevation of the whole limb, and the greater extent of the bony angles consequent thereon.

621. *The lumbar vertebræ*, on the contrary, own a specialty in the length of their transverse processes, which in some measure makes up the deficiency occasioned by the absence of ribs in their vicinity. In the horse there are six lumbar vertebræ, in the elephant there are only three, and in the camel seven. The ass is often found with five only; the mule has occasionally five also, but much more frequently it has six. In all the ruminants the transverse processes are very wide as well as long. The lumbar transverse processes in the dog turn forward towards the head, affording thus a stronger point of resistance for the action of the psoæ muscles. This is however so effected as not to limit the motion of the lumbar region, which is commonly short in all animals designed for leaping; by which we learn how much the well framing of the loins has to do both with the galloping and the leaping of our horses and dogs.

622. *The five sacral vertebræ of the horse* (*z*, *fig.* 111.) are united into one bony mass; which union gives strength to the whole bony column, and enables it to serve also as a fixed point of support to the pelvis, or basin, with which it is interwedged. From this detail it will appear how admirably this spinal assemblage of bone is adapted to its important functions of serving as a flexible but powerful support to the machine; and how, by the formation of a large foramen within the substance of each vertebra, a bony canal is offered for the safeguard of the spinal marrow, from which, through lateral openings in these vertebræ, the spinal nerves are given off in pairs. The pelvis, or basin (2, *fig.* 111.), is composed of the sacrum, two ossa innominata, and the coccygis. Each os innominatum in the fœtal colt is composed of the ilium, the ischium, and the pubis; all traces of which division however, are lost before birth. The ilium is the most considerable portion, and is that which forms the haunches by a large unequal protuberance, which stretches out on each side, and which, when very prominent, occasions the horse to be called ragged-hipped. The next largest portion is the ischium, or hip bone, on each side. It forms a part of the cotyloid cavity, or cup for the thigh bone, and then stretches back also into a tuberosity, which forms the points of the buttocks. The pubis, or share bone, is the least of the three, assisting, in conjunction with the former, to form the acetabulum, or cup-like cavity, in which the head of the thigh bone lodges. The pelvis, or basin is attached to the sacrum by ligaments of immense strength; but it has no bony union, by which means a very little motion is allowed, and the jar of a fixed bony connection is avoided. The ossa coccygis, or bones of the tail, vary from eight to sixteen, but are very commonly either thirteen or fourteen.

623. *The thorax, or chest, of quadrupeds*, generally comprises the sternum, or breast bone, and the ribs. The sternum (*w*, *fig.* 111.) of the horse is inclined, like the keel of a ship, to which the ribs are attached by strong ties. The ribs (*x x*) are usually eighteen to each side, of which eight articulate with the sternum, and are called true, while the remaining ten, uniting together by intervening cartilages, are called false ribs. The centrals are the longest, those anterior and those posterior are less so: the first is placed perpendicularly, the second less so; and their obliquity and dimensions increase as they advance, so as to enlarge the capacity of the chest circularly, which, to a certain degree, and according to the uses required of this animal, is important.

624. *The number of ribs in the different genera of quadrupeds varies much.* Thirteen pairs are found in most of the ruminants, as well as in the dog and his congeners. The elephant has twenty, the rhinoceros nineteen, and the two-toed sloth twenty-three.

Subsect. 5. *The Bones of the Extremities of Quadrupeds.*

625. *A critical examination of the bones of the anterior extremity of every quadruped*, however dissimilar each may appear on a hasty inspection, will convince us that they are all in accordance with an universal model of the shoulder, arm, fore-arm, and hand. We have elsewhere shown that the extremities of all vertebrated animals are modelled after the same type.

626. *The scapula, or shoulder blade, of the horse* (*k l*, *fig.* 111.) is a broad, flat, and rather triangular bone. It is very unlike the human scapula, having neither acromion, coracoid, nor recurrent process; nor is its situation at all similar to the human blade bone, applied as

that is to the back ; for, in this instance, the horse may be said to have no proper back, but to be made up of sides and chest. In man the scapula is in a direct angle with the humerus, but in the horse it does not pass out of the plane of the arm. Its superior surface is furnished with a considerable cartilage, marked by dotted lines, by means of which its surface is augmented without weight. The posterior surface ends in a superficial cavity, which receives the head of the humerus or arm bone, and is divided in its upper surface by its spine. The shoulder blade has neither bony nor ligamentous union, but is held in its situation by very powerful muscles. Its usual situation is in a plane perpendicular to the horizon, at an angle of thirty degrees, and it has a motion in its greatest extent of about twenty degrees ; hence, as it does not pass beyond the perpendicular backwards, so the more oblique is its natural situation, the more extensive are its motions. (See this more fully exemplified, both by figure and description, in our racing department, *General Proportions of the Race Horse*, p. 260.)

627. *A clavicular or collar bone is found in some quadrupeds*, and it corresponds with the human collar bone more or less intimately, as the actions of the fore extremities of these animals approximate or recede from those of the human hand. A clavicle is not, therefore, found where the limb is simply used in progression ; for in such the shoulder blade is placed in direct contact with the surface of the chest, the form of which being much flattened, particularly in animals of great speed, would have made a clavicle injurious to rapid motion. But where the fore limbs at all answer the purposes of hands, and are used for climbing, for grasping substances, for digging, swimming, &c., a clavicle is found. In the dog, who confines the use of his fore extremities to progression principally, the rudiments of a collar bone only are apparent. In the *Felinæ* also it is rudimental ; but is in them, nevertheless, rather more developed, to accord with the nature of their habits.

628. *The humerus, or arm bone* (*m*, *fig.* 111.), is so concealed by muscles as to be overlooked by a cursory observer, and hence the radius or next bone is popularly called the arm. The true arm bone extends from what is called the point of the shoulder (but which in fact is a protuberance of the humerus) to the elbow, thus forming an angle with the scapula, and extending obliquely backwards as that does forwards. Near its upper extremity it sends off a very powerful head to articulate with the shoulder blade. The motions of the humerus are necessarily confined to a removal from its inclined point backward to the perpendicular line of the body. When the real arm bone is too long, it forces the fore-legs too much under the animal ; and if this defect is joined to a shallow upright shoulder, the evil will be increased. It, however, fortunately happens that both the angle and extent of these two parts are usually regulated by each other.

629. *The fore-arm* (*n n*, *o o*, *fig.* 111.) of quadrupeds is composed of the radius and an appendage united to it, which in man, and some animals, forms the ulna ; but a true ulna, or axis of rotation, as the leg of the horse requires no rotatory motion, was not necessary in him. A large process however stretches out, which in the colt is distinct, and may then deserve the name of ulna ; but in the adult horse it unites with the radius, and then serves important purposes as an attachment to muscles. On the slightest inspection of the skeleton, it will appear how much the motions of the fore-leg must depend on the length and obliquity of this process ; which, acting on the principle of a lever in the extension of the arm, must necessarily, as it is either long or short, make all the difference between a long and a short *purchase*. The breadth of the arm, as it is called, at this part, will, from this reasoning, be seen to be very important. This bone articulates with the *knee* by its inferior portion.

630. *The carpus, or wrist*, commonly called the knee of the horse (*p p*, *fig.* 111.), is composed of seven bones, whose principal uses appear to be to extend the surface of attachment of ligaments and tendons, and by their interruptions to lessen the shocks of progression. It may be remarked that all hoofed quadrupeds have the anterior extremities permanently in a state of pronation, or with what is called the back of the wrist turned outwards. The carpal bones articulate with each other, and have one investing capsular ligament, by which means the smallest wound of the knee, which penetrates this ligament, has the effect of opening the whole joint : hence the quantity of synovia, or joint oil, which escapes in these cases ; and hence also the dangerous consequences which ensue.

631. *The metacarpus, canon, or shank of the horse* (*q q*, *r r*, *fig.* 111.), is formed of one large metacarpal bone (*q*) and two small ones (*r*). Here the wide palm of the human, and the paw of the digitated animal, is formed into one solid cylindrical, and two small additamentary bones, called splint bones, united with it by strong ligamentary attachment, but which, by age, becomes converted into a bony one. Although these additamentary bones may somewhat increase the surface of attachment of tendons and investing ligaments, their principal use appears to be to keep up the connection with the digitated tribes. In the cow there are no splint bones, but the uniformity is more perfectly kept up by the divided hoof. In her, therefore, the canon branches at its inferior surface into condyles, for the reception of the two claws.

632. *The pastern of the horse* (*t t*). — The rest of the extremity below the canon consists of one phalange only, but which, nevertheless, comprises all the mechanism, and a double

portion of the complexity of all the phalanges of the digitated tribes. Four bones enter into its composition, with the addition of two small sessamoids (*s s*) appended to each fetlock; evidently placed there, not only to act as a spring and prevent concussion, but also to throw the tendon of the foot, which runs over them, farther from the centre of motion. The pastern bone is seen to be situated obliquely forward; and on this obliquity depends the ease and elasticity of the motion of the animal: nevertheless, when it is too long, it requires great efforts in the tendons and ligaments to preserve it in its situation; and thus long-jointed horses must be more subject to fatigue and to strains than others, but they are what is called more "springy," *i. e.* have more elasticity.

633. *The lesser pastern or coronary bone* (*t v*) receives the great pastern below, and then expands into a considerable surface, which articulates with the coffin and navicular bones. The coffin bone (*v v*) forms the third phalange, and corresponds in shape with the hoof. It is very porous, and laterally receives two prominent cartilages. It is around the outer surface of this bone that the sensible laminæ are attached; while the inferior surface receives the flexor tendon. The navicular, nut, or shuttle bone, is situated at the posterior part of the coffin, and unites with that and the preceding bone.

634. *Of the bones of the fore extremities of quadrupeds generally* we may remark, that the radius and ulna are united in the ruminants, as they are seen in the horse. In the carnivorous tribes, as the dog, they are generally separated, and in the pig also. In the elephant, as will be shown hereafter, the lower end of the radius is larger than the ulna. The metacarpal bones vary much in number and direction in different quadrupeds. In the elephant they are eight, in ruminants from six to seven, in the dog seven, and in the hare nine. Of the metatarsal bones, or hind leg bones, we may observe that, in the horse, their elongation is such that a superficial observer is apt to doubt the possibility of their being the same with our foot bones; but such is really the case, and it is their extension alone that removes the os calcis, or heel bone, to such a distance from the toe, that it becomes placed midway between the trunk and hoof. In the elephant, on the contrary, it approaches nearly to the ground, which best accords with the intentions of nature to furnish this vast animal with solid support, rather than extraordinary powers of locomotion, or extreme pliancy and elasticity of members. It is this osteological arrangement in his hinder limbs, also, that forces him to kneel with his legs behind him as we do (*fig.* 114.). The progression of the elephant, as stated in written accounts, and as depicted in prints and drawings, is that of walking or trotting, after the manner of the horse; but more correct observations inform us that, when this living mountain quickens his pace beyond a walk, he moves his legs laterally and not diagonally, and thus he *ambles* instead of *trots*; and to which mode of progression, as much as to the stiffness of his limbs, is to be attributed the peculiar sensation his gait affords to those who mount one for the first time. (See this further noticed in the *Natural History of the Elephant*, p. 14.)

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635. *The posterior extremities.*—These differ much from the anterior in most quadrupeds, not only in their superior strength, and in the different lengths and directions of the parts, but also in some degree in their uses. The femur, or thigh bone, of the horse (3, 4, *fig.* 111.), as the subject of comparison generally, is the largest of the body; its vast indentations and risings, almost peculiar to it, showing the great strength of the muscles inserted into it. It articulates with the acetabulum, or hip joint, by a strong head called the whirl bone. In this situation it is held not only by a powerful capsular ligament, and still more powerful muscles, but by an admirable contrivance resulting from a ligamentous rope, which springs immediately from the middle of its head, and is firmly fixed within the socket of the joint. In its natural situation it is not perpendicular, as the human femur, but inclines to an angle of about forty-five degrees. This bone presents large protuberances for the attachment of very powerful muscles, called trochanters. Throughout it exhibits a mechanism uniting the combined properties of celerity and strength in a degree not to be met with in most other animals. The inferior end of the bone is received by its condyles into depressions of the tibia, or leg bone; while the patella, or knee pan, slides over the anterior portions of both bones. The patella, by farriers called the stifle, is nearly angular, and serves for the insertion of some of the strongest muscles of the thigh, which are then continued down to the leg. It thus appears to act as a pulley. The tibia, or leg bone (6, 8), is usually, in horsemen's language, called the thigh. It is a bone formed of a large epiphysis, with a small attached part called the fibula, altogether presenting a long body, and an irregular inferior end, adapted to the peculiarities in shape of the principal bones of the hock, with which it articulates. The obliquity in the situation of this bone corresponds with that of the femur, or thigh bone, being as oblique backwards as the former is forwards. The length of the

tibia, or true leg bone, is a prominent character in all animals of quick progression, in which respect it corresponds with the fore-arm; and the remarks made on that apply with even more force to this — that length is advantageous to the celerity, but less so to the ease, of the motion. The fibula (7) forms a prominent instance, in common with the splint bones, of what has been before observed, that many parts, whose uses were not before apparent, would on examination be found to be organs of harmony, placed in the body to prevent interruption to the completing the general plan of effective and convenient organisation. In this way the fibula appears but a process springing from the posterior part of the tibia, forming also both the rudiments of the human bone of that name. In the ox it is wanting; whereas in the dog and cat, as requiring numerous motions in their limbs, it is on the contrary perfect.

636. *The tarsus, or hock, of the horse* (9, 10), is a striking instance of the perfect mechanism displayed in the bony structure of this admired animal. It is formed by an assemblage of six bones, and sometimes of seven; while in the ox, sheep, and deer, there are seldom more than five. Between these bones there is but little motion, yet there is sufficient to give a spring to the parts, and to preserve the joints from the effects of shocks, &c. As the human anatomy is generally received as the standard of comparison, we must, to a proper consideration of the hock, regard it as the instep and heel, and all the parts beyond it as the foot. The human tarsus, and that of some beasts, as the monkey, and some varieties of the bear, makes a right angle with the tibia in standing or walking; but in the horse the hock makes an open angle with the tibia, and is far removed from the ground. In him, and the greater number of quadrupeds, all the bones, from the hock downwards, are much elongated, and form a part of the upright pillar of the limb. In the horse, therefore, the point of the hock is the true point of the heel of man; and although, in both man and horse, and as in the human figure, the great twisted tendons of the gastrocnemii muscles are inserted into it, yet the appellation of the tendo Achillis would be too forced if applied to the latter. A broad hock, as already observed, in the exterior conformation of the horse, may be now still more plainly seen to be very important to strength and speed; for the longer the calcaneum or heel bone of the hock, the longer must be the lever that the muscles of the thigh act by; and a very slight increase or diminution in its length must make a very great difference in the power of the joint. It is by this tendon, acting on this mechanism, that, when the animal has inclined the angle between the canon and the tibia, or, in other words, when his extremities are bent under him in the gallop or trot, he is enabled to open it again. The bones of the hock, like those of the knee, are united together by strong ligamentous fibres; and it is to an inflammation of those uniting the calcaneum and cuboid bones, that the disease called *curb* is to be attributed; and to a similar inflammatory affection of the ligaments in the front of the hocks, that *spavins* of the first stage are owing: in the latter stages the periosteum and bones themselves become affected. The remainder of the bones below do not differ so essentially from the corresponding bones in the fore extremities as to need an individual description. It may however be remarked, that the hinder canon or shank bone is longer than the fore, and that the pastern is also the same, but is less oblique in its situation; by which wise provision the horse is enabled to elevate and sustain his body entirely on his hinder parts without danger; which would not have been the case if the obliquity of those parts had been considerable.

Subsect. 6. *General Functions of the Skeleton.*

637. *The bony assemblage constituting a skeleton*, whether of a horse or other beast, must be regarded as a mechanism of admirable wisdom and contrivance, which having considered in detail, we offer the following summary of its functions as a whole: — The skeleton of the horse, as the subject of comparison, will be found to present nearly a quadrilateral figure, having an inclined cylinder resting on four supporting pillars. The spinal column, as the inclined cylinder, serves as a base for the soft parts, and is found not truly horizontal, but dipping downwards over the fore-legs, by which the propelling force of the hinder extremities is relieved by the maximum of strength thus transferred. The increased weight of the hinder part of the cylinder is admirably counterpoised by the head and neck, which are projected forwards, by these means leaving the line of direction near the centre of the whole. The length of a cylinder may be such as not to support its own weight; nature, therefore, has limited the length of the spines of animals: hence, *cæteris paribus*, a long-backed horse must be weaker than a short one; and thus likewise small horses can carry proportionably more than larger ones. The bony pieces, which compose the four pillars supporting their cylinder, are not perpendicular individually, but they are so in the aggregate; for a perpendicular drawn from their common centre of gravity will be found to fall nearly in their common base; by which means they afford as perfect a support, as though their individual axis had been in a line perpendicular to the horizon. Had they been perpendicularly opposed to each other, there could have been but little elasticity, and consequent ease in motion; every exertion would have proved a jar, and every increased effort would have

produced luxation or fracture. To raise our admiration of this mechanism, we need only turn our attention to the contra-disposition of these angles in their fore and hinder supporting pillars. Had these angles presented themselves in the same direction, the body must have been precipitated forward or backward; but each offering a counteraction to the other, the body is firmly sustained between them.

638. *The bony masses are operated on by muscles;* for this deviation from a perpendicular direction in the various bony portions of the limbs must necessarily require powers to correct it, which is effected by the muscles; and thus, wherever the angles of the bony masses are found most extensive, the muscles will be seen proportionally strong and large. This muscular exertion, to counterbalance the angular inclination, occasions fatigue; as the set of muscles immediately employed become weary, the animal is obliged to call another set into action, which change is necessarily more or less frequent as the animal is weaker or strong and powerful.

639. *The extent of the action of the bony portions of the extremities* is the produce of the length and direction of the various parts entering their composition, and of the different angles they are capable of forming. Progression itself, besides numerous other actions, is effected by these angles closing, and suddenly extending themselves again. The *force* of the action arises from the direction of the component parts of the angles, in combination with the agency of the muscles. The repetition of the action is dependent on the muscles alone; but as the original action arose out of the length and direction of the parts, so it will be evident that, in every subsequent repetition, it will be found more or less extensive, as these are more or less perfect in their formation, or more or less impeded by other matter, even though the muscular exertions should be the same; thus, some strong animals cannot move so fast as others with less strength, as the cart-horse and racer, or mastiff and greyhound.

640. *The bony mechanism of the fore and hinder extremities*, we repeat, necessarily presents considerable differences; the bones of the fore-leg are much less angular, and appear framed purposely to receive the weight imposed on them by the impulse of the hinder limbs. This weight they are destined to sustain, until their elevation is forced on them by the tendency the general inclined mass has to meet the ground, *i. e.* to fall, or to find its common centre in the earth. The fore extremities, under this view of the matter, could not have been placed with equal wisdom in any other situation, nor have taken any other form. The hinder extremities having less weight to support, and at no time bearing an increase of pressure, as the fore do by the impetus communicated from behind, are much more angular; and their angles, by being thrown into a backward direction, afford the necessary impetus for the projection of the body forward. This important operation of impelling the mass being almost wholly dependent on the hind extremities, as that of sustaining it, is principally confined to the fore extremities; so the former, that is, the hinder limbs, are also much stronger in point of muscular apparatus; by which their angles can be advantageously opened and closed with superior effect in progression. Man is the only animal whose whole foot rests permanently on the earth. The bear and badger, and some other beasts, occasionally bring the os calcis, or point of the hock, to the ground, but they do not do it constantly, otherwise the hair would be seen to be worn off the opposing surface, which it never is. In the elephant it is permanently so placed; whereas in the horse, the ox, &c., the last phalanx supports the weight of the body. The dog rests on the whole of his toes, except on the small additamentary ones, or dew claws, as they are called, where they exist. The ape rests his foot on the outer edge only.

641. *In all quadrupeds destined for rapid locomotion* the phalangeal bones (bones of the hands and feet) are likewise considerably elongated; by which the angles formed between the articulations of the extremities are elevated to a mediate distance from the ground. A mechanical advantage is thus afforded to the insertions of the muscles, by which the accidental actions of bounding and leaping are principally effected, and continuous progression is also accelerated thereby. The advantages to celerity of motion hinted at by the extension of the metacarpal bones, as the canon of the horse, will be apparent by comparing the bones of his extremity with those of the elephant, both being opposed to each other in *fig.* 115. Here it will be seen that the scapula of these two animals present a very different degree of length, as well as line of inclination. The humerus, or arm bone, of the elephant (*a*) occupies nearly the same place which in the horse maintains the ulna and radius (*b*): on the contrary, the radius of the elephant (*b*) is seen to assume the situation of the canon or

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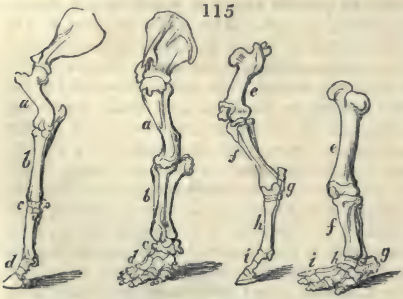

LEG BONES OF ELEPHANT AND HORSE.

metacarpus of the horse (*c*); consequently, in comparing the skeletons of these two animals a hasty observer might suppose the elephant to have lost one bony portion of his leg, and so indeed these limbs have been described by some writers. In the hinder extremities also, the femur of the elephant (*e*) is seen to occupy the place of the tibia (*f*) of the horse; while the tibia of the elephant (*f*) almost reaches the ground, the small portion below being crowded with the tarsus (*g*), the metatarsus (*h*), and the toes (*i*); which, being compared with the corresponding parts in the horse, will show, that as the bony pillars of the elephant are but little angular and broadly based, to support his immense fabric, the same parts in the horse are so framed as to present length of limb and extensive angles for flexion and extension. But in such plantigrades as are intended occasionally to assume an erect attitude, instead of having the heel bone, or point of the hock, so elevated that the leg may operate on it as a spring acting on a pivot, it is so formed and so articulated in them, that during any very important exertions it can be brought to the ground. By this the bear and others of this tribe can climb trees, the advantages of which power will amply compensate for the diminution of their speed. Sensible of the stability of his support, and of the mobility of his fore extremities, when attacked by a man or any tall enemy, the bear invariably erects himself, and seeks close combat. The kangaroo acts in a similar manner, from a similar formation, but in him more extensively displayed; by which his progression is but a succession of leaps, or a sudden displacement of the whole machine by the action of the elongated bones of the hinder extremities. The extraordinary length of the metatarsal and metacarpal bones of the horse, dog, &c. (ankle and wrist bones of man), is however compensated for by the extreme shortness of the femur, or thigh bone, which is hidden as it were within the body.

642. *Another specialty which the extremities of the solidungulous animals, as the horse and his congeners, exhibit*, is, that instead of each spreading itself into toes, it is found to finish by a solid pedestal of horn under the name of a *hoof*. In the ruminants, on the contrary, this horny mass is cleft asunder, by which the inequalities in the ground are rendered less obnoxious, and are more easily taken hold of in ascending eminences, and in descending from them, in search of food. In the camel, on the contrary, there is not a solid mass opposed to the ground, but one soft and yielding, of considerable extent, and surmounted by two toes, thus adapting his feet most conveniently to the nature of his path. He is also furnished with defensive callosities on his back, breast, and joints, which have either been purposely given by providence to defend him from the effects of oppressive loads, or otherwise have grown there by time on the race.

SUBSECT. 7. *Anatomy of the Head and Neck of Quadrupeds.*

643. *The lips of quadrupeds*, like our own, are an upper and lower, or an anterior and posterior. The nostrils, in most, are divided by a septum narium or cartilaginous division; which is covered, in its natural state, with the pituitary membrane. Under great exertion, this membrane becomes red, and in fever it does the same, from its great vascularity; which phenomena we daily see in horses and dogs, when highly excited, either by fever or muscular exertion. In the glanders of horses, and in the disease called the distemper of dogs, these cavities become ulcerated, and in sheep they are liable to the attack of the *œstrus*, or gadfly, which torments them by its attempts to deposit larvæ thereon, so much so, that the consequences are often very injurious to the owners. The cervical or suspensory ligament of the neck, known by butchers as the *packwax*, is a most important organ to grazing animals with long necks. Elastic in its nature, and of immense strength, it adheres firmly to all the neck vertebræ but the first, and continues onwards, attaching itself to the spinous processes of the dorsal vertebræ or withers, by which it wholly fills up the dip of the cervical or neck vertebræ; and, in conjunction with the muscles, forms what is known as the crest of the horse, the teguments of which are crowned with a mane. The elasticity of the suspensory ligament allows of its elongation in grazing; and its contractile properties assist the muscles in again raising the weighty head of the *Herbivora*, or grazing tribes. The mouth of most quadrupeds presents two cavities; an anterior and a hinder, or posterior, divided from the former, or proper mouth, by the palatine curtain, which in the horse extends down in front of the epiglottis in such a manner as to prevent vomiting by any common effort. The faucial communication between the hinder mouth and the nose presents the epiglottis, or covering to the glottis, or opening of the windpipe, which by its elastic properties is naturally elevated, except when the animal swallows, at which time the œsophageal funnel being brought forward, the masticated bolus pushes the epiglottis down, shuts up the tracheal opening, and thus prevents strangulation. The œsophagus, or alimentary tube, which receives the food, in some quadrupeds is internally cuticular, and externally muscular; by which the food, when masticated, is forced backwards and downwards into the stomach. In the horse this structure is peculiarly illustrated by its strength and adaptation to secure the throat from irritation, in swallowing grain, pulses, and such firm food.

SECT. II. *The Nervous System in Quadrupeds.*

644. *At the head of the nervous system stands the brain*, which in its natural situation is wrapped up as it were in three coverings, one external, dense, and strong, called the dura mater; the second, the arachnoid membrane; the inner, the pia mater. Within the folds of the dura mater are sinuses for the reception of the blood which circulates through the organ. The cerebrum, or largest portion of the brain, is divided throughout its whole extent into two hemispherical portions. The peripheral or cortical part is of a grey tint, and is seen indented with a whiter substance, called the medullary portion. The various septa formed by the dura mater become sinuses, or venous caverns, and give rise to the jugulars, or great neck veins, from which we so conveniently draw blood in quadrupeds.

There are numerous lesser but equally important parts in this viscus, for a description of which we would refer to our *Veterinary Outlines*, our limits here confining us to the leading features only of our subject. Below the cerebrum, in front of the cerebellum, and most deeply seated in the centre of the skull, are the nodus-encephali and medulla oblongata, which furnish nerves to all the organs of sense, and to the head, throat, lungs, and stomach, the medulla oblongata being continuous with the spinal cord or marrow, beyond the skull.

645. *The functions of the brain are little understood*, and theory after theory has done little to throw light on the subject. One opinion entertained among physiologists is, that the medullary portions of the brain furnish nervous energy to the frame, and effect all the corporeal functions. The cortical, cineritious, or ash-coloured part, being differently composed, is on the contrary supposed to produce the mental functions of consciousness and reflection; and which supposition is, in some measure, borne out by our observations, that where superior intelligence is found, this cineritious portion prevails; but where the brute instincts, as the search for food and desire of propagation, principally mark the animal, the medullary portion predominates.

646. *The proportion of brain to the general mass of the body* was long considered as a measure of the intellectuality of the animal; thus man was supposed to possess the largest brain, in comparison with his bulk, of any animal; but more extensive research has discovered that many birds, and some beasts, have, in proportion to their bulk, a larger mass of brain than ourselves. As far, however, as experience has yet furnished anatomists and physiologists with proofs, the matter stands thus — that it is not in a comparison between the mass of brain to that of the body that we are to look for signs of superior intellectual capacity, or of the reverse, in mere instinctive workings; but we are to draw our conclusions from the ratio which the mass of brain bears to the nerves. In man the volume of brain to that of the body may be averaged as one to thirty. In carnivorous animals the proportions vary much, being however on the average as one to one hundred and fifty. In the horse, as one to four hundred. In man, it is found that the brain bears a much greater bulk in proportion to the nerves which arise from it, than is found in any animal whatever.

Subsect. 1. *The Nerves and their Functions.*

647. *The nerves are named cerebral, spinal, and sympathetic.* The ten pairs of cerebral nerves arise from the brain itself, within the skull, and the eye, ear, muscles of the head and face, the organs of respiration, and even the heart and stomach. Thirty-six pairs of spinal nerves escape from each side of the spinal bony column; from whence the transit of a nerve through an appropriate canal formed in each of its vertebræ may be distinctly seen; thus as many vertebræ as an animal has, so many pairs of spinal nerves it has also. Of late years the physiology of sense and motion has received much elucidation by the researches of Alexander Walker, Bell, Mayo, Majendie, Bellingeri, &c. The great nervous centre, called the spinal cord, or marrow, is continuous with the nodus encephali, or ganglia at the base of the brain through the corpora pyramidalia, olivaria, and restiformia, and this portion of the nervous system, as it appears before the brain in ascending through the different classes of animals upwards, must be considered as the fundamental portion of what has been termed the *cerebro-spinal* system — but erroneously so termed, because the researches of Dr. Marshall Hall have shown that there is a true spinal system independent of the brain; the spinal nerves of motion acting involuntarily, that is, without the intervention of the will, which power is essentially connected with the cerebrum; such nerves are called reflex. The spinal marrow, being divided by the mesial plane of the body into two semi-cylindric portions, the right and left, each of these is subdivided into an upper, a lower, and an intermediate column, each spinal nerve owning a double origin by filamentary bundles from the upper and under columns of the rope. Confining the description to one side only, it will be seen that the fasciculus of the upper origin, as soon as collected together, enters a nervous knot called a ganglion, of complex structure and function, not understood. Leaving the ganglion, it now becomes a perfect *nerve of sensation*. From the lower of the three columns which compose the half of the spinal cord, proceeds a somewhat smaller nerve, which does not, like the upper portion, enter the ganglion, but, on the contrary, retains its own integrity of structure, and throughout its ramification operates as a *nerve of motion*. Having passed the ganglion, both the upper and the lower bundles proceed in one rope, having a common covering, but being still distinctly separated by an investure proper to each. It must however be observed of these bundles, that though thus closely connected, neither their substance nor functions are blended, but that, thus united, they form a nerve of both sensation and motion. It remains to observe that the central lateral portion of the semi-cylinder is yet undescribed, and it must be owned that neither its distribution nor functions are so clearly understood as those of the upper or lower have proved themselves to be. Certain anomalous nervous branches are given off from it, which are known under the indefinite name of respiratory nerves, whose action is at once extensive and sympathetic over the chest, neck, and face.

648. *The sympathetic nerves* are even more complex, and no less curious in their origin and functions, than the last. They are connected with a chain of ganglia which extend from the centre of the brain to the extremity of the sacrum, ramify all over the body with the arteries, and have frequent connection with the spinal and some cerebral nerves. They appear to govern the wholly involuntary functions of nutrition and secretion, and all the great viscera of the body are supplied by their branches.

649. *The nervous principle*, it must be acknowledged, is however but imperfectly understood. Nevertheless we do know, that from the nervous masses of all animals having a distinct brain (and, as before observed, it is probable that few even of the lower orders are wholly without), there proceed innumerable fibrillæ to every part of the body, by which sensation and motion are produced; but whether it be by a subtle fluid conveyed, or by some modification of electricity or galvanism, or a distinct principle, *per se*, we are totally ignorant. We, however, are well aware that all the important animal functions are under the control of the nerves: the lungs cannot inflate without their concurrence, the heart acts only under their influence, and when they become diseased, paralysis ensues. Even the vital heat of the body ceases unless maintained by nervous influence.

Sect. III. *Senses of Quadrupeds.*

650. *The senses are all under the direct control of what is called nervous influence.* The nerves which act on the organs of sight and hearing have their origin within the skull itself. The other senses are also no less mediately indebted to the nervous influence of the brain for their powers.

Subsect. 1. *The Sense of Vision in Quadrupeds.*

651. *The eyes in the larger quadrupeds exhibit a general resemblance.* As such, we shall continue to make those of the horse our model. In lesser beasts, on the contrary, many singular modifications of the organ occur. In some, as moles and shrew mice, the eyes are so minute as to be denied by some persons to exist, and in some others they are certainly present, though very indistinct.

652. *The appendages to the eye of most quadrupeds are,* first, a funnel-shaped cavity, formed by the concurrence of the bones of the skull, called the orbit, which is not placed directly in front, as in man, but inclines laterally, to enable the animal to embrace a larger field of view. The eyelids are an upper and under, of which the upper is the most considerable, and has the greatest motion. United they form an admirable curtain to defend the eye from dust, insects, and from the light during sleep, and are moved by appropriate muscles. Attached also to the edge of each eyelid is a cartilaginous rim, called the tarsus. The cilia, or eyelashes, in the horse and many other quadrupeds, are not, as in man, above and below; the upper lid only being furnished with hairs, and these are not placed in one row, but in several smaller ones. The horse has no supercilia, or eyebrows, unless we reckon as such the few long hairs over the orbits. The lacrymal gland is a body lodged within the upper part of the orbit; it is furnished with five or six excretory ducts, which secrete the lacrymæ, or tears, the intended purpose of which is to lubricate the surface of the globe, and wash out any extraneous matter that may enter. The superfluous tears are carried off by two openings at the inner angle, called puncta lacrymalia, by which they at once descend into the nose, not being, as in man, first received into a lacrymal sac. The caruncula lacrymalis is a small black substance, seen at the inner canthus of the eye, whose office appears to be to direct the tears aright in this course.

653. *The haw, or nictating membrane,* is an important part, which protrudes when the eye is drawn inwards; at all other times, however, it lies hidden within the fatty matter surrounding the globe of the eye. Though called a membrane, it is cartilaginous and firm; and thus, when the eye is forcibly withdrawn into the socket, the haw is pressed out from the inner angle, and passes completely over the surface of the globe, to which its shape is adapted. A moderate pressure only shows about half of it; and it is thus seen in tetanus, or stag-evil, being then protruded by the action of the retractor muscle; and under inflammation of the eye it also becomes visible, which has led ignorant farriers to cut it off, under a suspicion that this organ, so necessary to the eye, formed one cause of the disease. The use of this nictating membrane cannot be, or ought not to be, for a moment dubious. It is denied to man and to monkeys, because they, having hands, can with their fingers remove dust and dirt from the eyes; but to the horse and most other quadrupeds, not having such aids, it is essentially necessary for these purposes.

654. *A diagram of the internal structure of the eye of quadrupeds generally* (*fig.* 116.) will show that it is not correctly globular, but rather composed of parts of two globes attached to each other. The lesser segment encircled by the transparent cornea is in front (*a*); the larger is posterior, and although itself transparent (*h h*), is in great part encircled by opaque coats. Between these is suspended the crystalline lens (*b*); its circumferent edges being embraced by the choroid or black coat (*k*); and by the retina or net-like expansion (*i*). The anterior surface of the lens is opposed to the aqueous humour in front (*g*), and to the vitreous or glass-like humour behind (*h h*); *l* marks the sclerotic or strong coat which embraces the whole globe, except the portion occupied by the transparent cornea; *m*, the optic nerve, the grand agent in vision; *n n*, *o o*, represent two arrows; the anterior (*n n*) mark the object viewed, the visual rays from which are painted on the retina at *o o*, but much diminished in size, and reversed in position, from the decussation of those rays. The principal humours of the eye are the vitreous or glass-like, occupying the posterior portion of the globe; and the aqueous, or water-like, which is found between the cornea (*a*) and the lens (*b*). Blindness in the horse is principally occasioned by inflammation of the

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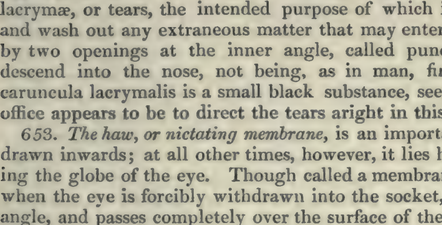

THE EYE.

lens; and it is irremediable in him, because he can retract his eye within the orbit beyond the reach of the means of either *couching* or *extracting*.

655. *The globe of the eye, thus composed of coats, chambers, and humours, is acted on in its movements by muscles.* It may, we repeat, in some animals be considered as forming a large cup posteriorly, with a smaller cup applied to its margin anteriorly; or, as though the segment of a large sphere were adapted to that of a smaller one. The substance which gives figure and consistence to the larger segment is the *sclerotic coat* (*l*), which is very firm and fibrous. The anterior cup or segment is supplied by the cornea, which is transparent, and formed of thin concentric plates of very different degrees of convexity in different animals, and often in similar animals; to a defect in which is ascribed the indistinct vision and supposed cause of starting in some horses. The *cornea* (*a*) is vascular and sensible, and in an inflamed state admits the red globules of the blood, as we see by the universal redness over the whole; at other times, when it admits only the colourless parts of that fluid, it is perfectly transparent. Immediately within the sclerotic coat is a thin vascular membrane, called the choroides (*k*); which is spread over it nearly as far as the cornea, where it turns inwards and expands into the ciliary processes. It also, by a peculiar fold, forms a ligament, after which it produces another projection into the cavity of the eye, termed the uvea. It is here continuous, and presents a veil perforated in the centre. The diversity of density in the various portions of the sclerotic coat, which is very apparent in some quadrupeds and birds destined to regard objects at different distances, is very considerable; it being much thicker at its posterior than its anterior part. The muscles of the eye are thus enabled to act on the globe and to alter the length of its axis, and the respective situation of the lens, by which the telescopic character of the organ is with facility adjusted to the vision of either close or very remote objects.

656. *The pupil of the eye is of different figures in different animals.* In man, in the dog, and in most of his congeners, it is round; oblong in the horse, ox, sheep, and deer; perpendicularly linear in the fox, and equally so in the cat tribe. The two chambers of the eye are separated by a moveable curtain, the *iris*, on which the colour of the eye depends; in man it is gray, brown, black, or blue; in the horse it is usually brown, but now and then white, when the animal is said to be *wall-eyed*. At the central margin of the iris of the horse are seen, in a strong light, some little globular bodies or bags, covered with a black pigment. They are usually attached to the upper margin only, but when any exist on the lower they are small; they are perfectly natural, but have been mistaken for a diseased state of the organ. The iris is capable of accommodating itself to circumstances; that is, it can enlarge or contract the diameter of the central aperture or pupil, so as to admit or shut out the rays of light. Over the central surface of the choroid expansion is spread a dark mucous substance, called pigmentum nigrum. In animals, whose vision is distinct at night, this pigment is found of a lighter colour; in man it is very dark, and his crepuscular vision is therefore indistinct. In the grazing tribes it is of a greenish cast, lost in azure blue; in the predaceous tribes it is still lighter. Under this pigment is the shining expansion, peculiar to quadrupeds, called tapetum. The optic nerve (*m*) penetrates the sclerotic coat, and its inner surface becomes expanded into a membranous lamina of exquisite fineness, called the retina. On this it is supposed objects are reflected, and thus taken cognisance of by the brain.

657. *Crepuscular vision, or the power of seeing with little apparent light*, has always been a subject of mystery, and there were formerly two opinions on the phenomenon. Of the illumination seen in the eye of the cat, and which is also common to other members of the *Felinæ*, one opinion was that the external light only is reflected; the other that light was generated in the eye itself. Professor Bohn, of Leipsic, made some experiments, however, which proved that, when the outer light is wholly excluded, none can be seen in the cat's eye; and it is now established, that the illumination is entirely produced by the external rays of light; which, after being concentrated by those parts which are called the *cornea* and the *crystalline lens*, are reflected in a brilliant concave mirror at the bottom of the eye, we have just noticed as the *tapetum*. This effect may be constantly seen in the domestic cat: in the strong light of day, the iris is contracted, so that a very small quantity of light is admitted to this mirror; but in the twilight the iris opens, and then the mirror being completely exposed, the eye glares in the manner with which we are all familiar. The construction, therefore, of the eye of the cat tribe enables them to collect in one focus whatever rays of light there may be; and few places are so dark but that some light may be found. Thus, when we descend into a cellar, the darkness at first appears impenetrable, but in a very little time, even with our differently constructed organs of vision, we soon distinguish objects without difficulty. This *peculiar eye* therefore is necessary to the cat family, as the lion, tiger, &c., to enable them to perceive their prey; and they creep towards it with a certainty which nothing but this distinct nocturnal vision could give; and such animals being either wholly or partially unprovided with a reflecting tapetum, fall a more easy prey to these crepuscular marauders.

658. *The humours of the eye are the vitreous, the crystalline, and the aqueous.*—The vitreous humour (*h h*) is of a jelly-like consistence, and occupies all the globe, except those parts taken up by the other humours. The crystalline humour forms a lenticular body of moderate consistence, and is, therefore, more properly called a lens (*b*). It is doubly convex, which greatly increases its refractive powers; its posterior side resting in a concavity of the vitreous humour. It is not of equal consistence throughout, being much firmer in the centre than in its circumferent edges. Different animals have the lens of different figures, to suit the purposes of their existence. The aqueous humour fills up the chambers of the eye before and behind the iris.

659. *The muscles of the eye.*—The motions of the eyeball are produced by several muscles, as four recti or straight, which elevate, depress, and draw to and from; two oblique, which rotate the eye; and a retractor, or choanoid, peculiar to quadrupeds, to draw the eye within the socket, and thus preserve it from danger.

660. *The phenomena of vision.*—If the diagram which represents the eye (*fig.* 116.) be examined, it will be evident that it presents an optical instrument of exquisite workmanship and

mechanism, admirably fitted to collect the luminous rays from the various objects around, and to transmit them with truth to the source of sensation. If the luminous rays were reflected from objects passed through the eye in a rectilinear course, as they do through the atmosphere, no cognisance at all useful to the animal could be taken of them by the eye — all would be glare and indistinctness; but being refracted, or bent, by the media through which they pass, they finally meet at a point called their focus, or focal point. Neither would one simple line of refraction have been sufficient to answer all the purposes of perfect vision, under its various modifications. It is necessary that the refraction should be increased in its passage, by increased degrees of density in the media of its transit. In the passage of the visual rays through the cornea and aqueous humour, they must encounter their first refraction; and it is evident, that the more convex the anterior portion of the eye may be, the more will this refraction be increased. We need not, therefore, be surprised that a goggler, or horse, with this form of eye, should start. The next and largest degree of inclination which the rays receive, occurs through the crystalline lens, which, from its lenticular form, and density of structure, must necessarily be considerable. In their progress through the vitreous humour, a further refraction is effected, until meeting in a point on the retina, a perfect representation of the object, or objects viewed, is obtained; the rays forming in their passage numerous cones, the bases of which will be the object viewed, and the apex of each a radiant point. Amidst the number of objects around, it appears that the eye has a capability of collecting rays from such only as are immediately capable of this convergency; it is they only that produce effect, all others being lost in the black pigment of the eye, which is apparently placed there purposely to absorb the superfluous rays. As the eye must necessarily have a vast variety of objects painted on it, whose distances are widely different, there must be some optical adjustment of the powers of the part to enable it to effect a distinct vision of all objects, whether near or remote. Whether this takes place by means of the angle formed on the two opposite axes, or, as has been more lately taught, by a muscular power in the lens itself, is not yet satisfactorily ascertained; certain it is that, after the loss of one eye, time is required, both in the human and brute subject, for the remaining eye to learn to adjust itself to judge of relative distances; which fact is certainly in favour of the opinion that an angle, formed between the eyes, regulates the judgment of distances. In this way we can account for the well known fact that hunters, which have, before the loss of an eye, been excellent and sure leapers, have, for some time afterwards, as five or six months, lost the power of measuring their leaps. Were it not for some adjustment of the optical organ itself, the rays reflected from objects very near the eye would fall behind it; and those from distant ones would, from being almost parallel, meet together before the retina. The mechanical adjustment of the focus is also assisted in some measure by the iris, which contracts almost to a point when we look at a very minute object, and by this means only permits such rays to pass through as penetrate the centre of the lens, by which such rays will be very much refracted: but when the eye regards distant objects, the iris becomes dilated, and the rays are then viewed through the edges of the lens, and their inclination is thereby lessened. (See *Vision in Birds*, p. 613.)

Subsect. 2. *The Sense of Hearing in Quadrupeds.*

661. *The sense of hearing in quadrupeds employs an external and an internal apparatus.* Of the value of this sense to them, we can form a reasonable estimate, when we consider that the dangers to which they are exposed are many of them to be warded off only by an early retreat. The external ear, to a certain degree, is peculiar to man and quadrupeds; some, however, of these are without one, as the mole and the duck-billed animal of New South Wales. The imperfect quadrupedal *Mammalia*, as the seal, walrus, manati or sea-cow, are also destitute of them; even the bony external meatus being wanting in them. The form of the external ear, as we well know, varies extremely in different quadrupeds, but it is always that which is best adapted to the creature's manner of life. In shape it commonly resembles the oblique section of a cone from near the apex to the basis. Hares, and such other animals as are daily exposed to the attack of beasts of prey, have large ears directed backwards, their eyes, which are seldom closed, giving them sufficient warning of any danger before: rapacious animals, on the other hand, have their ears placed directly forwards, as we see in the lion, cat, &c. Such beasts as are designed to hear distinctly sounds coming from below, have their ears hanging downwards, or their ears are flexible when they move their head with some difficulty, as the elephant. Man, again, who must equally hear sounds coming from all quarters, but especially such as are sent from about his own height, has his external ear placed in a vertical manner, somewhat turned forward. In short, wherever we see a specialty in the make of this organ in any creature, we shall with very little reflection discover that such form is the one of all others best adapted for the hearing faculty of that creature. The moveable ear also gives the animal the power of directing the cone to the sonorous body without moving the head. How spiritedly does the old hunter prick up his ears to the far-distant tongues of the hounds! The outer ear is

connected with a bony canal, which canal is very differently situated in different subjects; but in each it will be found exactly to accord with the habits of the animal.

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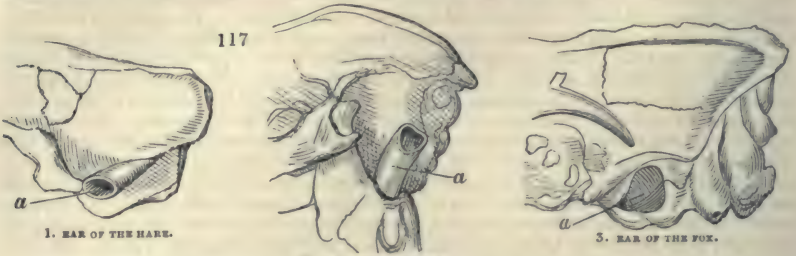

1. EAR OF THE HARE. 2. EAR OF THE POLECAT. 3. EAR OF THE FOX.

662. *To illustrate this interesting fact* we have introduced the above diagram (*fig.* 117.) of the auditive bony canal of the hare, polecat, and fox; three animals with whose habits every sportsman is familiar. For these illustrations we are indebted to Dr. Farrar, M.D. whose researches in natural history have given him much claim on the estimation of the lovers of nature. The subject itself may be seen at length in Loudon's *Magazine of Natural History*, vol. v. p. 9. *Fig.* 1. represents the skull of a hare, on which *a* marks the tubulated bony portion of the external ear, "half an inch in length, and a quarter of an inch in diameter, pointing backwards and upwards at an angle of 45°." The long moveable external ear of the hare, is attached to this fixed bony canal, and the mobility of the one is admirably adapted to the fixed position of the other; and although sounds are thereby received from every quarter, yet those coming from behind reach her most readily; her eyes, which are seldom closed, guarding her sufficiently in front. As a contrast to the auditory bony tube of the hare, we next offer that of the polecat (*fig.* 2.), which it will be remarked is directed forwards and downwards, indeed the very reverse of the direction which the same part takes in the hare. Consequently the polecat, as we know to be the case, receives sounds less acutely from behind than before. In fact, as a beast of prey, he is a pursuer, and therefore looks a-head, as the sportsman would say. The skull of the fox, on the contrary (*fig.* 3.), can hardly be said to be at all tubular in the bony portion of his auditory apparatus; on the contrary, it rather presents a circular aperture, but which opening, connected as it is with his funnel-shaped external ear, is well adapted to receive sounds from above; and, as such, must aid him extremely in his midnight prowlings among perched fowls, whether in bushes or in hen-roosts.

663. *The internal ear of animals* is connected with the outer by cartilaginous portions and appropriate ligaments. The parts of the internal ear are the *meatus auditorius internus*, or passage; the *membrana tympani*, or separating membrane, between the external and internal parts; the tympanum, drum, or barrel of the ear, and the labyrinth. The Eustachian tube is an opening at the upper and anterior edge of the hollow of the tympanum, and forms a duct, which is in part bony, and in part cartilaginous, extending from the tympanum to a large and peculiar cavity at the posterior part of the nasal fossæ.

664. "*Sound*," Dr. Fleming observes, "is produced by the motion of the parts of a particular body, or by the friction of one body against another. In both cases a tremulous motion is communicated to the surrounding medium, which extends in all directions, like the waves produced in the water by a stone falling into it. These undulations affect the organs of hearing, and excite the sensations of sound: they vary also with the condition of the body which excites them; and, when carefully attended to, give to animals intimations regarding the distance, direction, velocity, connection, and composition of sonorous bodies. In judging of the distance of objects by the sense of hearing, they attend chiefly to the strength of the sounds which they emit, considering it as bearing some proportion to their proximity. But as this depends on the quantity of motion excited, and the resistance which is opposed, they may be led to conclude that a body is distant because the sound emitted is weak, while it is actually near, but the extent of its vibrations limited. The position of sonorous bodies is intimated to them by the direction in which the vibrations are communicated to the external organs. In estimating the velocity of moving bodies by means of sound, they attend to the changes which take place in its strength. When the transition from loud to weak, or from weak to loud, is rapid, they infer that the vibrations have a corresponding velocity, in proportion to the change of place in the body which produces them." (*Philosophy of Zoology*, vol. i. p. 203.)

SUBSECT. 3. *The Sense of Taste in Quadrupeds.*

665. *As the mouth is especially destined to receive the food*, so most of its component parts are organs of taste; as the tongue, the cheeks, the palate, and fauces. The tongue, so far from enjoying this faculty exclusively, is, on the contrary, in many quadrupeds but very little concerned in tasting; and the horny tongue of some tribes must be wholly deprived of it. The skin, which lines the mouth, is very plentifully supplied with bloodvessels and nerves, and is kept moist and apt to receive impressions by means of the saliva. The sense of taste is probably not so diversified in brutes as in man; at least it is more cultivated in the latter than in the former. In the brute it is however instinctively so correct, that it seldom errs, particularly in the herbivorous tribes; and when it does, there is reason to suspect some present defect in the organ, arising from morbid sympathy, which (as in the instance of salt-water, of which at some times horses will drink immoderately) prompts them also

occasionally to take in matters they are accustomed to refuse at others. Taste was given to brutes to regulate their other senses; and thus there are few plants or substances whose application to the tongue, under ordinary circumstances, produces an agreeable effect, but such as are proper for food. Nature therefore stimulates her creatures to search for edibles by a double motive, the calls of hunger and the pleasures of taste; and these are usually in unison, for the nausea of repletion destroys the appetite of taste.

Subsect. 4. *The Sense of Smell in Quadrupeds.*

666. *The faculty of smelling* is to most quadrupeds the next in importance to that of vision, and in many points of view it is even of more consequence. With the herbivorous tribe it forms their principal means of judging between the noxious and innoxious. It is not therefore to be wondered at, that the organs concerned should form in them so large a portion of the head; nor that the nose should be so exquisitely gifted with sensibility, or so admirably formed to answer its important purposes. The external parts of the nasal organ are the two nostrils, and as much of their convolutions and linings as come into immediate view. Internally, these two cavities are carried upwards into the pharynx, but completely divided by a cartilaginous septum. In this course they communicate with numerous openings and cavities, formed within the bones of the skull, the whole of which are lined by one continuous membrane of exquisite vascularity and sensibility. To increase the area of the pituitary membrane, *i. e.* the expansion destined to receive the odorous impressions, there are several interposed bony septa and tubular osseous portions: the ethmoid and turbinated bones are instances of this; and the large cavities of the frontal, and those of the sphenoidal sinuses also, are evidently formed with the same intention; while the maxillary cavities at once serve the same purpose, and also that of extending the length of the jaws without increasing their weight.

667. *The organs concerned in smelling in most animals are situated near the entrance of the respiratory apparatus;* by which their openings are made subservient to both purposes, and by the same means are rendered as well voluntary as involuntary agents; for the action of respiration will carry all the effluvia from bodies, whether sought for or not, against the sensitive pituitary membrane. The herbivorous tribes smell vegetable matters better than flesh; and, on the contrary, carnivorous animals take little cognisance of vegetable bodies. It is also to be remarked that, in the *Carnivora*, the ethmoidal and turbinated cells are lamellar; whereas, in the herbivorous and ruminant, they are spiral and convoluted; whereby their surface of capacity is greatly increased. In all the vertebrated animals, the parts connected with the organ of smell are, like the parts composing the other organs of sense, double. The cognisance taken of the volatile parts of bodies continually flying off from them, and impressed on the sensitive surface of the nose, is transmitted by the nervous expansion of the olfactory nerves to the brain, where it produces the sensation we understand by the name of smell.

668. *Proofs, if they were wanting, of the exquisite powers of smelling in most quadrupeds, might be offered in numbers.* See the bloodhound trace the footsteps of a man hours after any effluvia might be supposed to remain. How does the harrier trace the hare to her form through all the disadvantages of a heavy dew which might be supposed to dissolve every particle of perspirable matter which had escaped from surfaces of the body or the foot of the animal. Out of a hundred lambs playing around, the mother-sheep was never known to give suck to any but her own, which she recognises by its scent alone. If an animal dies in the camp of the travellers, or in the village of the Hottentots, within an hour or two hyænas, in numbers, are sure to come in search of it, being attracted from distances by the keenness of their olfactory organs. The sense of smell is to the predacious quadruped what that of sight is to the vulture tribe among birds; and the predatory movements of many of the former being conducted by night, when we know effluvia is most effective, evinces that great wisdom is apparent, both in giving a superiority of olfactory power to quadrupeds, and of vision to birds. So far as carrion birds of prey are concerned, Mr. St. John, a judicious observer, believes that the eye, the powers of which are most astonishing in these birds, has much to do in leading them to the food they seek, and having seen such birds congregate around an animal almost immediately after it has ceased to live, he does not agree with those naturalists who assert that it is the sense of smelling which alone leads the birds to their feast. He adds, that he has known half-a-dozen buzzards collect around a dead cat on the afternoon of the day on which it had been killed, in the winter season, and when the dead animal could have emitted no odour strong enough to attract its devourers. (See *Tour in Sutherland*, ii. 171, 172.) When we know that the eagle, soaring at a vast height, can distinguish its prey on land or in the sea, and pounces down upon it with immense velocity before it can escape, we must admit the force of Mr. St. John's remarks.

Subsect. 5. *The Sense of Touch in Quadrupeds.*

669. *The organs of touch in beasts are limited in their extent*, but we are by no means disposed to think they are so much so as some naturalists and physiologists suppose; for if hair, teeth, horns, hoofs, &c., are in themselves insensible, they communicate very intimately with parts which are vascular and nervous in the extreme.

670. *The snout of swine, of the tapir, desman, mole, &c., prove themselves organs of exquisite sensibility.* By the hog it is used with great advantage, both in the feeling and the

smelling of roots and underground fruits. But it is the proboscis of the elephant which unites the powers of prehension and the capability of estimating the qualities of the matter apprehended, in the most surprising degree of any animal whatever. The whiskers of animals receive foreign impressions also, and are in this way useful to such as enter subterranean cavities. These whiskers, on the upper lip of the cat, are attached to a bed of follicular glands under the skin, and are in connection with nervous filaments, by which the slightest touch, or even approximation of an object, by a repercussion of the air from its sides, is known. In the lion and tiger likewise these hairs are projected from the muzzle, so that, from point to point, they rather exceed the width of the body; and thus, in the twilight prowlings of these animals, when their murderous intents might be frustrated by the least noise, then it is that, in their passage through thickets or intervening foliage, their whiskers measure for them the exact dimensions of the openings they have to pass through without disturbance.

671. "*Bats*," it is observed by Blumenbach, "have been supposed to possess a peculiar power of perceiving external objects, without coming actually into contact with them. In their rapid and irregular flight amidst various surrounding bodies, they never fly against them; yet it does not seem that the senses of hearing, seeing, or smelling, serve them on these occasions, for they avoid any obstacles with equal certainty, when the ear, eye, and nose, have been purposely closed. Hence naturalists have ascribed a sixth sense to these animals, which is probably analogous to that of touch. The nerves of the wing are large and numerous, and are distributed in a minute plexus between the integuments. The impulse of the air against this part may possibly be so modified by the objects near which the animal passes, as to indicate their situation and nature."

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COW LICKING A MAN.

672. *The tongue and lips are organs of touch in the Felinæ*, and great pleasure appears to be derived from the action of licking those they are attached to, excited probably from some imperfect connection with parental cleanliness. Thus, at a dairy farm at Blechindon, near Aylesbury, where we used to visit in our boyish days, we well remember to have found on his back in a field, fast asleep, a cowkeeper, overpowered partly by fatigue, and partly by Sir John Barleycorn, with a very tame cow, busily employed in licking his face and hands, without awakening him. This, we learned, was not the first *licking* he had thus got from this kind tempered cow, between whom and the man a more than usual friendly feeling existed. The lips, it may be remarked, are employed by most quadrupeds as organs of touch, and they seem to draw a great number of their conclusions from this species of examination. The skin is in many cases very sensitive in beasts; and were it not defended by hair, spines, &c., it would be even painfully so. A naked skin is usually therefore so dense as to be nearly impervious to outer impressions; as we observe in all the true *Pachydermata*, or thick-skinned animals.

673. *The sense of touch* informs quadrupeds of the dimensions, the figure, the temperature, the solidity or fluidity, &c., of bodies; it is also a source of pleasure, as we have just noticed, and equally so of pain, under some circumstances. The horse and ass carry their lips over the persons of their master; the dog licks the hands and face of his friends; and the cat, while she brings her soft sides in contact again and again with your legs, purs out her affection and delight. On the contrary, what we call tickling is, in many cases, almost unbearable.

Subsect. 6. *The Anatomy of the Pharynx, Larynx, and Vocal Organs in Quadrupeds.*

674. *The pharynx is a large vaulted cavity*, formed by the terminations of the mouth and nostrils. From the former it is however divided by a moveable curtain; but with the latter, the communication is free. The velum palati is the curtain alluded to, whose office appears to be to keep the mouth and pharyngeal cavities distinct, except when the masticated bolus raises its free edge, and forces down the epiglottis. The Eustachian cavities are within the limits of the pharynx also, but are rendered distinct by means of a membranous expansion. An Eustachian tube to each side is common to all *Mammalia*; but in the horse, ass, and mule, it does not open immediately into the pharynx, but, as already observed, is separated by a membranous septum. This structure, peculiar to the horse family, has given rise to various conjectures as to its probable use; among which the remarkable sounds emitted by neighing and braying have been attributed to it, and probably with reason: but when it is considered that the cavity is closed, and could in that case only operate by the oscillations of the membrane itself, we are inclined to regard them as intended for some additional purpose. Did the neighings of the horse last as long as the brayings of the sonorous donkey, we might then suppose that these cavities were designed to prevent the violent concussion of the larynx and pharynx from impeding the passage of the blood in the carotids.

675. *The larynx is a hollow within the posterior and inferior part of the pharynx*, and is itself the funnel to the trachea. Structurally it presents five cartilaginous pieces; a cricoid, two arytenoid, a thyroid, and the epiglottis. The epiglottis is a very important appendage to the mechanism of these parts, as we shall prove when describing the process of digestion. It is very elastic, and its heart-like shape, as it stands nearly erect at the entrance of the trachea, accurately closes the opening of the floating arch formed by the curtain of the palate when forced down; it also is an important vocal organ.

Subsect. 7. *The Larynx as a Vocal Organ.*

676. *Of the larynx, as the principal vocal organ*, we shall first remark, that although it admits of some variation in size and mechanism in different quadrupeds, yet its departures from the human model are so slight, as to leave us in astonishment at the immense variety of intonations it can produce. Not only does each genus of quadrupeds differ in respect of its intonations, but even the species and varieties are unequivocally known by the sounds they emit. The larynx has often been compared to a wind instrument, but an accurate examination of any such instrument will determine the tones it will produce. But no such calculation can be made by the inspection of the larynx of any animal. It is evident that, if a mechanical comparison be indulged in, the larynx can only be compared to a keyed instrument, where, to a certain extent, the comparison will hold good. (On this head see *Magendie's Compendium of Physiology.*) The cartilaginous pieces the organ is composed of, are united together by distinct and perfect articulations, over which membranous folds and direct vocal ligaments are stretched, so as to indent the sonorous box into different sacs. This apparatus being operated upon by a numerous and complex series of minute muscles, in tightening or relaxing the ligaments, or cords, at the will of the animal, occasions all the vocal intonations, from the pleasing knucker of the playful foal, to the discordant bray of the ass, the roar of the lion, the bellowing of the ox, the canine howl, and the feline pur. (See the *Vocal Organs of Birds*, under *Hawking*, p. 619.)

677. *In the horse the apertures of the lateral sacs are long and wide*, and bear some resemblance to the usual ventricles of the glottis. The opening into the anterior cavity is very wide in him, although the cavity itself is but a moderate depression. On the contrary, in the ass, the opening into each of the three sacs is a small round hole, and the anterior sac is a real bag of considerable size. Cuvier states that the mule, which is generated by the male ass and the mare, has the openings into the laryngeal sacs wide, and the structure of the organs of voice altogether approaching that found in the horse; and he therefore concludes that the account published by Herissant was taken from the dissection of the offspring of the stallion and the female ass. Blumenbach has, however, followed many other anatomists in attributing similar organs of voice to the common mule and the ass: we are not ourselves able to decide the point, not having hitherto dissected these organs in the mule. Cuvier further adds, that in the horse and the mule there is, at the commissure of the two cordæ vocales, a slight fold of the membrane, which is not visible in the ass. The size of this fold has been greatly exaggerated by Herissant; he has also attributed to it important offices, which it does not seem to perform. The peculiar sound, called a bray, is uttered by the ass in consequence of the extent of the laryngeal sacs, and their being so much separated from the cavity of the larynx by very contracted apertures. The bray seems indeed when heard to be a compound discordant sound, produced from the resonance of different sized cavities. Cuvier found in the quagga the larynx organised as in the horse, except that the membrane, extending from one corda vocalis to the other, did not exist. (*Rees's Cyclopædia*, art. Mammalia.)

678. *In the dog genus the vocal ligaments are prominent, thin, and free*, the sacs are deep, and the membrane which lines them has a floating edge; the cuneiform cartilages have the shape of an italic *S*. The freedom of motion enjoyed by the cordæ vocales of the dog, and the floating edges of the ventricles or sacs, prevent our surprise at the strength of his bark, the variations of his howl, and the different expressions of his whine, as it betokens either impatience, hope, or affection. The cat, Blumenbach informs us, has two delicate membranes lying under the ligamenta glottidis, by which the purring noise peculiar to these animals is produced.

679. *Of the more common sounds emitted by domestic animals*, the following is extracted from our *Veterinary Outlines*; and although it is now some years since we wrote the account, we have not found any reason to alter our opinion of it:—"The various sounds emitted by animals are arbitrarily named, without reference to the sounds themselves: thus we say the horse neighs, and the ass brays. *Neighing* appears produced by expirations, as are most of the tones of voice from the horse. The vibrations produced, as before observed, by the resonance of different sized cavities, assisted by the tremors of the cartilages of the nostrils, produce the compounded sounds which are emitted. *Knuckering*, as it is termed, is only a lesser neigh, with shorter, deeper, and less forcible tones, and expresses affection and joy. The horse has one acute sound, produced by the act of inspiration, which usually expresses either play or lust; but in most other instances, sound in the horse is produced from expirations: nor does it appear that the tongue, or teeth, are much concerned in the modulations of his voice; but in dogs they are very much so. In the ass, the principal sounds are those of *braying;* and perhaps he differs in no respect so much from the horse as in the sounds he emits; which is another very strong proof that an ass is not a horse degenerated, as has been supposed by some. *Braying* appears to be produced through the mouth by a convulsive displacement of the velum palati, assisted by the vibrations occasioned by the extent of the laryngeal sacs, and by their being so much separated from the

cavity of the larynx. It appears effected by alternate inspirations and expirations; the inspirations forming half tones, and the lengthened notes being formed of expirations. The *lowing* of oxen is likewise performed through the mouth, and the bleating of sheep also: hence it would appear that the mouth is better adapted to convey sound than the nose, or at least it produces more variety in tones, though the passage is not so direct. *Barking* is formed of short continued expirations, with the jaws very slightly separated, succeeded by a quick and forcible expiration, the mouth being alternately opened and shut. A dog produces more tones than most quadrupeds; his *howl* consists of a great variety of notes; but are all, except the *whine*, formed with the mouth open. *Snarling* is effected by a tremor of the velum palati, and can be brought about equally by expiration or inspiration. The *mewing* of a cat is produced by expiration, both through the nose and mouth, beginning with the consonant *m*, and continued by passing the air through the nose, and then following it with a more steady expiration through the open mouth, the shutting of which causes the final expression. The *grunting* of hogs appears generally composed of expirations, and can be effected either through the mouth or nose: it consists in a convulsive tremor of the curtain of the palate during the expiration. Their cry of distress is effected through the mouth by expirations forcibly directed through a constricted larynx: thus persons, when killing pigs, usually tie the mouth, to drown or lessen the noise."

Sect. IV. *The Digestive System in Quadrupeds.*

680. *The mouth of quadrupeds*, considered in reference to its connection with digestion, receives that food which the wants of the constitution render necessary to be taken in. The size and form of the mouth varies, therefore, according to the nature of the edibles proper to the animal. It is, in the greater number of quadrupeds, large and well protected by a firm membrane; it is also of considerably greater length than breadth, particularly in the *Herbivora*, thereby enabling them to reach their food from the ground. This extension is also well adapted to divide their aliments minutely, by placing the matters taken in under the action of the grinding teeth. When the mouth is small, and the habits of life of the animal are such as prevent the mastication of all his food on the spot, as in the *Simiæ*, or monkey family, whose mouth approaches in figure to our own, then cheek pouches are given as reservoirs into which these plunderers cram nuts, fruits, and other matters, which are afterwards to undergo the process of mastication at their leisure.

681. *The tongue is a very complex and interesting organ.* Its motions are infinite: it is almost wholly muscular, as its fibrous appearance denotes; and also its plentiful supply of nerves occasion its sensibilities to be equally great. An apt illustration of this is, that in many examinations among jewellers and other artists, the tongue is used to ascertain properties that would escape detection by all the other senses. As an instrument of manducation its versatilities are equally remarkable; thus, in the cameleopard it is a prehensile organ. The xariffa's tongue can be extended in length to seventeen inches. It is in this animal entirely smooth, but spotted; it is also very dark in colour—so ordained probably to prevent blistering, from its continual exposure, while examining and collecting the leaves and twigs on which the beast feeds.

682. *There are prominences on the tongue of many animals.* In the horse they exist, though in him they are not large; but to compensate for their want of size, the palate is thrown into large rugose folds. In oxen these papillæ are, on the contrary, large; they are also equally so in the bear. In the lion, tiger, cat, and indeed in all the *Felinæ*, they amount to pointed horny processes, which enable them, as carnivorous animals, to scrape off minuter parts of the flesh from the bones of their prey. In the lion they are particularly large and distinct, so much so as to make it an impossibility for the lion or any other of the larger *Felinæ* to lick the hand of a man without tearing away the skin, the detection of which error is another proof of the benefits derived from the knowledge of comparative anatomy.

683. *The œsophagus of quadrupeds* conveys the food into the stomach, in many instances, in a direction contrary to its gravity; this it effects by its external muscular apparatus. The termination of this canal is open and direct in the *Carnivora;* by which, as predaceous animals, they can swallow the bones as well as the flesh of their prey. This power of extensive deglutition is combined with a partial operation only, and also with a convenient facility of regurgitation; all which are important acquisitions, and accord with the habits of these animals. It may happen that the whole of an enormous mass cannot be swallowed, but that it actually will remain within a part of the œsophagus until room is made for it by gastric solution. Further, by the capability of only partially swallowing their meals, these tribes can regurgitate for the benefit of their young, which are thus fed by most of the carnivorous tribes. Few that keep dogs but have observed the fond mother hasten away with her meal, and, by a partial vomition, place it before her pups. In the horse and his congeners, on the contrary, the œsophageal tube either enters the stomach obliquely, or it presents an imperfect valve, which, if it do not offer a total denial to vomition, is at least, under all ordinary circumstances, a great hinderance. In this family, the internal membrane of the tube is purely cuticular; and not only extends its whole length, but is continued likewise over rather more than a third of the surface of the stomachic bag.

684. *The stomach of quadrupeds is very varied in figure and dimensions.* Its most simple form is found in carnivorous animals, their food requiring the least assimilation. The best examples of the true carnivorous stomach are seen in the hyæna, *Felinæ*, badger,

and polecat. The dog likewise presents a true muscular stomach, and one not unlike the human, which may be cited in proof that the Pythagoreans resisted the light of nature when they asserted that man was intended to be wholly frugivorous. The situation of the stomach of the dog differs, however, from that of the human subject, in lying much more longitudinally, to accommodate itself more perfectly to the abdominal cavity. The digestive pouch is also proportionately much larger in the *Carnivora* than in man, that a large supply might be taken in when opportunity offers.

685. *In some Herbivora the stomach has an uniform appearance externally*, although internally divided into two portions by a structural variation very apparent in the two halves of its internal coat, as in the horse; or it may be likened to a valvular elongation of the membrane, as in some animals of the mouse kind, and in the hare and rabbit. In some other *Mammalia* the stomach is positively divided into two or more portions. The camel and the lama have very numerous cells in the first and second stomach, which are closed and opened at will by muscular bands; these cavities have been found in a dead camel capable of holding two gallons of fluid. The stomach of the pangolin is remarkable for being almost as thick and muscular as that of the gallinaceous fowls.

686. *The intestines of quadrupeds are divided into the large and small.* The length of the whole intestinal track is regulated by the food of the animal, it being comparatively short and simple in the carnivorous tribes, but long and complicated in the herbivorous. The secreting portion of the stomach of the horse genus, being reduced by its cuticular appendage, it follows that here, as with all similar stomachs, the corresponding intestinal track, particularly its early portions, are not confined to merely secerning the aliments, but are true continuations of the digestive track. Here, therefore, it is the large intestines alone in all such that strictly deserve the name of the excremental track.

687. *The small intestines are the duodenum, jejunum, and ileum;* the relative lengths of which are in man nearly as one, ten, and fifteen. Their inner coat is villous, to increase their absorbing surfaces. In the duodenum and jejunum the chyme acquires the character of chyle, from whence it is absorbed into the system by the lacteals which are spread over their inner surface.

688. *The large intestines are the cœcum, colon, and rectum.* The cœcum is sometimes wanting in the *Carnivora*, or rather it is ill defined in them. In the *Herbivora*, on the contrary, it is often very large; but in all cases where it does exist, it is rather a blind bag than a true continuation of the intestinal track. In most herbivorous *Mammalia* it is long, large, and divided into numerous cellular compartments, which is remarkably exemplified in the elephant and horse. The fæcal matter, secerned from the chyme, is passed onwards by means of a creeping or peristaltic motion of the intestinal tube into the rectum, or straight gut, from which it is passed out by the anal opening.

689. *The liver may also be considered as a digestive organ*, inasmuch as it secretes a fluid whose office appears to be to quicken the action of the intestines; at the same time that, perhaps, the very matter separated tends to purify that blood which has been already distributed to the chylopoetic viscera. The horse, ass, and deer, are among those quadrupeds not furnished with a receptacle for the bile, where it may be retained and rendered more acrid. Where the gall bladder does exist, there are usually found an hepatic and a cystic duct; and the canal which is formed by their union receives among anatomists the name of ductus communis choledochus. The biliary fluid is either emptied at once into the stomach, or into the stomachic extremity of the duodenum. In many quadrupeds the liver is divided into several lobes; particularly it is so in beasts of prey, as the canine and feline genera. Were it otherwise, in the varied motions of those with a very flexible spine, as all the *Felinæ* for instance, a rupture of the organ might occur. It is remarkable how many beasts want a gall bladder besides the *Solipedæ;* many of the saltigrade order, and all the tardigrade *Mammalia*, are without it: we may also add to the list the elephant, the rhinoceros, the camel, dromedary, and stag.

690. *The pancreas* is an assistant to digestion also, as we have reason to conclude, by its pouring its contents into the duodenum with the bile. It is situated behind the liver, between the stomach and left kidney. In different animals this viscus exhibits remarkable modifications of size, colour, consistence, and form; but in all, its texture and secretion much resemble those of the salivary glands. Of its use we only know that the chyme, having mixed with the pancreatic and biliary fluids, becomes a new compound; and we have reason to believe that both are necessary to the composition and separation of healthy chyle.

SUBSECT. 1. *The Physiology of Digestion.*

691. *Digestion may be characterised as that wonderful power whereby substances, received into an animal body, lose their own properties, and become endowed with those of the constitution in which the assimilation is carried on.* That this animalisation takes place within the stomach has been always allowed; but in what manner it is brought about has long been, and still remains, a subject of unwearied experiment and endless dispute. The various actions of an animal body produce a waste of its energies and a decrease of its parts, which are indicated by the sensations of fatigue and hunger. To restore the tone of parts, rest is required; and to repair the waste, food becomes necessary; and now hunger and thirst, which appear to be sympathetic feelings of the stomach with its own wants and those of the constitution generally, stimulate its owner to take in solid and fluid aliments. By the distinguishing terms of its own, as well as that of constitutional want, it may be gathered, that we consider this sympathy as subdivided into individual and general. That the stomach sympathises with itself principally, in some cases, is proved by the fact, that the mere mechanical dis-

tension of a draught of water will, for a time, satisfy the sensation of hunger; but as it does not repair the loss of the chyle, so a repetition of the draught, instead of affording relief, only adds to the general prostration: it is also by its distending properties, probably, that food taken invigorates long before its chylification has taken place. The constitutional sympathy admits also of partial relief by other means than constitutional repair; thus, the inanition of a sportsman long engaged in fruitless search for game, or long employed in reaching a distant cover, is no bar to his after exertions in the chase. However fatigued, the moment he hears the well-known sounds, he receives a temporary supply of nervous energy, which, acting on his irritability (*i.e.* his passions), produces renewed muscular exertions; but the chase over, the supply having not been one of pure renovation, a double prostration is the consequence, and the nervous supplies being already expended (which have so great a share in the digesting process) it often happens that the stomach is unable to recover its tone, and thus both the horse and the rider may be too fatigued to eat, as we often witness after a very hard run.

692. *Carnivorous quadrupeds seize on their edible matters with their incisory teeth if the prey be already dead*; if living, and it offers any resistance, they apply the canine teeth and tear the mass into portions fit for a partial mastication, for their economy renders insalivation not essentially necessary to digestion.

693. *The mode of collecting food among the herbivorous quadrupeds varies considerably*, according to their wants, or the organs which are to gather it. The ruminants, as oxen, sheep, deer, &c., who want the upper incisors, twist a tuft of herbage into a mass by means of their tongue, and then cut it off with their lower front teeth. The horse, ass, and their congeners, crop the grass with their incisive teeth, first by means of the lips placing a tuft between them, when, elevating the chin, the sharp edges of the under nippers cut it through. A quantity of the herbage being thus gained, it is carried by the tongue and molar muscles to the upper part of the mouth, to encounter the action of the grinders, for which their broad flat surfaces are admirably adapted; the matter being carried from side to side, to be placed in the most favourable direction for perfect mastication, by means of the tongue and molar muscles. During this process it continues to be mixed with the salivary fluid from the parotid, maxillary, and sublingual glands, which pour out their secretion by the pressure of the surrounding muscles; for which purpose, that is, to be subjected to this pressure, these glands are so placed as to be near the motion of the muscles used in mastication. Pressure is, however, not their only stimulus; they are also acted on by a sympathy existing between the stomach and themselves: thus we observe, if victuals be placed before a hungry dog, just beyond his reach, his jaws will pour out saliva in great plenty. The vegetable mass having been thus completely masticated is, by the tongue, carried backwards and upwards into the pharynx, which forces the epiglottis down, so as exactly to cover the glottis, or opening of the larynx, the velum palati being at the same time carried backwards so as to close the nasal fossæ, the mouth also remaining closed during this action, that the muscles may find a fixed point. The pharynx then, it will be seen, first sinks to receive the bolus pushed into it by the contraction of the tongue, and then rises, elevating the funnel-like extremity of the œsophagus, into which the bolus is forced, being shaped in its passage by the constricting powers of the pharyngeal muscles. Having entered the œsophagus, it is propelled backward towards the stomach; not, as heretofore, by volition, but by a functional necessity, dependent on the muscular structure of the alimentary tube, whose power acts against the gravity of the food, as well as independent of the will. But, until the bolus has entered the œsophagus, deglutition is altogether an act of volition, and cannot be performed without the assistance of the tongue.

694. *The masticated aliments* received into the stomach are first deposited in the left sac of that organ, and advance under digestion from the left towards the right, following the direction of its great curvature towards its pyloric extremity. Experiments have shown that in an animal, killed a short time after eating hay or grass, the contained matters are usually seen in a state of chymification in the order of the entrance of the different edibles. These matters being acted on by the gastric secretions of the stomach, by its solvent powers become converted into a pultaceous mass, called chyme, which the action of the stomach finally propels through its pyloric orifice into the intestines. Such is the ordinary process of digestion in the graminivorous quadrupeds with a single stomach. Stomachs laid open during the process of digestion, are seen to change from a pale pink to a bright red colour, when the surface begins to secrete a colourless fluid of a solvent nature, and known as the gastric fluid. In the horse, from stomachic peculiarities, much also of this process is carried on in the intestines.

SUBSECT. 2. *The Digestive Process in the Horse.*

695. *Granivorous quadrupeds*, or such as appear peculiarly intended to receive a considerable portion of their nutriment from grain, exhibit a specialty of structure for the express purpose of assimilating such food; for we cannot agree with some anatomists, that

this structural peculiarity was given to animals so widely different as the horse, the hare, the rabbit, the rat, and mouse, principally to form a connecting link between the stomachs of the ruminants and such as have this organ wholly villous. *Fig.* 119. represents the stomach and intestines of the horse taken out of the body, the stomach being cut open to show its peculiarities; *a*, the cardiac or recipient orifice, having the œsophagus or gullet cut off; *b b*, the powerful plane of muscular fibres which surround it, and so exclude the possibility, or at least probability, of the return of whatever is once swallowed; *c c*, the longitudinal plane of muscular fibres which assist in closing the recipient extremity of the stomach; *d* points to the cuticular coat of the stomach, on which a few bots are seen adhering; *e*, the villous or membranous coat, its rugæ or folds being larger than those of the cuticular; *f*, the external part of the great extremity of the stomach; *g*, the pyloric extremity; *h*, the duodenum or first of the small intestines, showing the biliary and pancreatic ducts which enter it; *i*, the mesentery; *k*, the termination of the small intestines into the large; *l*, the cœcum, having its blind end or pouch displayed; *m*, the commencement of the colon by a contracted portion; *n n*, the continuation of the colon, exhibiting its membranous bands and its lateral contractions into cells; *o*, the rectum; the anal opening is seen at the edge of the cuticular coat. The length of the alimentary canal in the horse ranges, according to circumstances, between twenty-seven and thirty yards; of which proportions from twenty to twenty-two belong to the small intestines.

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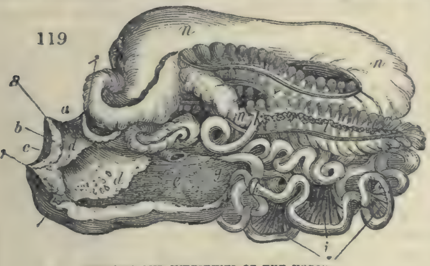

STOMACH AND INTESTINES OF THE HORSE.

696. *The equine stomach appears to be formed of four expansions*, all of which are continuous and complete, the cuticular only less manifestly so. The outer is furnished from the peritoneum. The second is muscular, exhibiting fibres traversing it longitudinally and transversely: a few others are also seen taking an oblique direction. Thus the longitudinal and most external plane appears a continuation of the outer one of the œsophagus, strengthened by additional original fibres, which, spreading over the lesser curvature, carry themselves obliquely around, and likewise over, the great extremity, where they conspicuously form themselves into a kind of vortex round the central part of the fundus. The second, and by much the largest, plane is not quite circular in its direction, but slightly oblique, and intersecting the course of the longitudinal plane; it is very thick and strong around the œsophagean extremity, and altogether exhibits so much structural specialty, as to warrant a conclusion that it was purposely there placed to prevent the return of the food. Internally are seen the cuticular and villous expansions, the former of which, extending over somewhat less than a half of the surface, appears to be principally confined to the granivorous monogastrics, as the horse and his kind, and may be seized on by the advocates of continuous links throughout the animal kingdom, as that which connects the true *membranous* stomach of the *Graminivora* and the *muscular* one of the *Carnivora*. Undoubtedly it bespeaks the ordination of this animal to be one of much locomotion; and for which reason he was furnished with peculiarly powerful but compact digesting organs, and an aptitude to search for condensed food in the form of vegetable gluten, principally found in farinaceous seeds or grain. This cuticular coat, we may farther observe, is a prolongation of that which, commencing with the mouth, extends down the œsophagus, is continued over nearly the first half of the stomach, covering its fundus, or left extremity, ending abruptly by a sort of fringed termination, very distinct from the next coat, over which its serpentine irregular edges are seen to lap by a slight rugose fold. (See *fig.* 119., suprà.) From the pharynx to its termination, this alimentary tunic is plicated,. to admit of distension; thus the plicæ of the œsophagus are continued into the cardia, and in a less regular manner also over the remainder of the cuticular surface, making it slightly rugose. It is whitish in colour, and is perforated with secretory mucous openings, from whence some gastric secretion, assistant to digestion, is probably poured out. It is to this coat of the stomach that bots are so frequently found adhering, and which they sometimes penetrate.

697. *The villous or sensible portion of the stomach* (*e*, *fig.* 119.) appears to commence from the line of termination of the cuticular part. It is at once firm, vascular, and exceedingly fine in its texture; and, when attentively examined, presents innumerable villi, which probably are the minute ramifications of bloodvessels, from whence the solvent gastric fluid is secreted. The surface of the villous coat is likewise plicated or folded, by which it suffers no injurious pressure when the stomach is filled, but can easily accommodate itself to the elastic enlargement of the other investures. It may also be remarked that these rugæ are largest towards the great extremity; towards the duodenum they lessen; and, at the pylorus, they unite with some muscular fibres to form a valvular apparatus, which prevents the return of the food

from the intestines, as well as its too early exit from the stomach. These prolongations are also further useful, for they not only hinder the too speedy passage of the food, but they increase the surface of secretion. The digesting powers of the horse therefore, from these structural peculiarities, enable him to assimilate nutriment as well from the hardened grains of corn as from the succulent blades of grass; but to effect this, the processes must vary somewhat: in fact it may be considered that there is both an ordinary and an extraordinary digestive process here carried on.

698. *The ordinary process is adapted to the horse*, both as a graminivorous and an herbivorous animal; in which case the masticated vegetable is indiscriminately deposited in the cuticular cavity of the stomach generally, from whence it is propelled forward by muscular contractions of the organ in the direction of its great curvature, from left to right, towards the pylorus, being however so turned and contorted in its passage, that every portion of the mass becomes first macerated with the cuticular secretion, and then receives the more important accession, as it is propelled forward, of the *solvent gastric mucus*. It is thus that a mass of vegetable matter, of the nature of hay, grass, or other succulent herbage, passes the assimilating process within the stomach, which readily and quickly reduces it into a semipultaceous mass, called chyme, after which it is hurried onward to have the chylous animalisation completed within the intestines.

699. *The extraordinary process is somewhat different*, and is calculated to show the wonderful powers inherent in the organs for adapting themselves to exigent circumstances. It must be premised that the horse exhibits specialties which were evidently given for specific purposes. His vast bulk, yet vast powers of locomotion; his inherent capability of subsisting and reproducing his like in almost every climate; these important circumstances would, *a priori*, lead us to expect structural peculiarities to meet them. He is one of nature's noblest works: magnificent in stature, he is yet endowed, as has been happily expressed, with a *specific energy*, which renders him capable of vast and continued exertions; and his power is exceeded only by his rapidity, for which ends his organisation throughout appears to be designed. The bulky stomach of the ox would have proved to him most inconvenient; yet a greater consumption of food, and a more complete conversion of it into chyle, are more necessary to supply his energies than those of the ox. We find him therefore, we repeat, furnished with a single stomach, capable of extracting ordinary nutriment from herbage, and further furnished with a functional ability of extracting an *extraordinary* supply from farinaceous matters, for a more ample extension of his powers when necessary; for we need not inform the reader that the original organic molecules in the farina of plants infinitely exceed those which reside in their stems, or that found in the ligneous fibres of wood, or the foliage of shrubs. The specialties hinted at, by which the horse assimilates extraordinary nutriment without injury to his general properties, are both functional and structural: the functional are derived from the great energies of the stomach generally, the nature of the gastric juice, and the longer detention of the food to be more completely acted on; the structural part of the specialty consists in the form of the equine stomach, its muscular fundus, and of a particular covering to the first half of it. It was long ago observed by Spallanzani and others, that the great pouch of the horse's stomach gave it a near resemblance to the rumen or paunch of the ox, &c.; and he conjectured that it was destined to the detention of particular parts of the food; and, by actual experiment, it has been since discovered that the food is really distributed in the stomach of the horse according to its qualities; and we now feel assured, that the large pouch-like left extremity of his stomach is purposely intended to receive and detain within it such food as requires more complete maceration and more active pressure; and which can be readily performed by means of the muscular vortex around the centre of the fundus, aided, as it must be, by the cuticular covering to the part. Thus, when farinaceous food is received into the stomach, an undulatory motion takes place, which, by pressing and wedging the masticated grains together, not only softens and separates their substance, but most intimately mixes the gastric juices with them; for we are fully of opinion that the motion of the stomach is not equal throughout its whole length, but that it has a rotatory winding or twisting movement, different from that of the villous half, which, by means of its longitudinal fibrous plan, partakes more of the true peristaltic motion. To proceed, the mass, in its progress towards the pylorus, mixed with the true gastric mucus, becomes chyme, which is protruded through the pyloric outlet, to be further acted on for perfect chylification in the intestines; which chyle forms blood, and from blood the whole body is supported. A specialty therefore it is evident exists in the digestive organs of the horse, and this peculiarity, if we mistake not, is the occasion of his being more tender in his bowels than most other of the *Granivora* or *Graminivora*.

SUBSECT. 3. *The Digestive Process in Ruminant Quadrupeds.*

700. *In horned ruminants, as the ox, sheep, goat, and deer, there are four gastric cavities or stomachs*; for, as this class lives solely on succulent herbage, which contains but little nutri-

ment in a large bulk, and likewise requires much mastication, it would be impossible that they could collect sufficient nutriment for the purposes of life, were their digestive organs the same as those of the monogastrics. They therefore have a vast stomachic surface, by which they first simply collect food, next put it by in a storehouse, and then lie down to masticate and insalivate it, by which rest and nutrition are going on at the same time. This specialty is provided for by a stomach of immense magnitude, which is divided off into four different compartments, as seen in (*fig.* 120.), to each of which a separate office is assigned: thus, the first is a storehouse for the unprepared materials; the second holds water, to mix with the dry mass when necessary; the third receives the goods from the grinding mill after they have been sent there by the ruminating messenger; and the fourth proceeds to manufacture, or rather to assimilate, them into nutriment. The first of these is the true ruminating organ called the paunch (*a a*), and is a mere membranous receptacle of immense capacity, reaching, when distended, as far as the ileum, towards the left side. Into this the food is passed without mastication, as soon as gathered. The second stomach, known as the reticulum or bonnet (*b*), appears little more than an appendage to the former, but is more cellular. Into the junction between these stomachs, the œsophagus or gullet (*g*) enters, and is continued in the form of a muscular ridge, or tubular portion, into the third stomach, called omasum (*c*), or many-plies. This muscular tube forms a leading feature, or character, in the ruminant economy. It is highly sensitive, and, like the tongue, is capable of diversified motions, and is wholly subjected to the will of the animal, and which is the more remarkable, as hitherto no specialty of nervous communication has been found to exist in it. Segmental only as it appears, it can, by the approximation of its sides, become a perfect tube, and the animal can thereby direct the grass it collects into the paunch; but the water it drinks is at once passed into the second cavity. When a quantity of grass is gathered, sufficient to distend the paunch to a certain degree, the animal usually lies down, and rumination begins by means of the same tube, which embraces a portion of the contents of the rumen, or paunch, when, by a regurgitation, such portion is passed up again by the œsophagus into the mouth. After undergoing a much more complete mastication and insalivation than at first, it is again returned along the œsophagus towards this gastric tube, which has the power of carrying it beyond the two first stomachs into the third, called from its foliations the many-plies, of which membranous septa there are between eighty and ninety, by which the secreting surface is much increased in extent. The faliscus, or abomasum, or red bag, forms the fourth stomach, (*d*); and, although there is no doubt that the process of digestion is begun in the third, yet it is in this that the pultaceous mass undergoes its perfect animalisation, by mixing with the true gastric juice which is secreted here, and here only, and thus it is this stomach alone which produces rennet. In the hornless ruminants, the second stomach is exclusively designed as a reservoir for water, and is capable of holding in some of them, as the camel and dromedary, a vast quantity, which is passed up as wanted, to be mixed with the dry matters chewed during rumination; thus obviating the effects of the deprivation arising from the arid climes they traverse.

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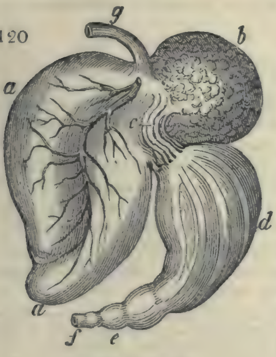

STOMACH OF THE OX.

701. *The stomach of carnivorous quadrupeds greatly resembles that of man*, who like them is able to draw nutriment from both animal and vegetable matter, but probably best from a mixture of the two, which fits both the man and the quadruped, for a wide geographical distribution, as one or other of these matters are to be met with in all seasons, and in almost all countries.

Subsect. 4. *The remaining Abdominal Viscera of Quadrupeds.*

702. *The spleen, or milt, of quadrupeds* is a spongy body, situated at the greater extremity of the stomach. Its use is likewise not clearly ascertained; but it has been supposed to be that of a reservoir of blood for the stomach. The kidneys of quadrupeds are either uniform, as in the horse, or conglomerate, as in the bear, otter, &c.; they are in all cases excremental glands, situated in the lumbar region, the right more forward than the left. The structure of the kidney exhibits an external reddish part, an internal whitish part, and a cavity called the pelvis. From this cavity passes out the duct called the ureter, and brings with it the urine, which is secreted within the kidney. The ureters convey the urine to the bladder, which is a membranous sac for the reception of the urine. The bladder of quadrupeds rests on the pubis, and is immediately under the rectum. It is in part muscular, by which it can expel its contents almost to the last drop. At its neck is a kind of sphincter, to prevent the involuntary escape of urine; and at its posterior part it is pierced by the ureters. To the bladder is attached a membranous pipe called the urethra, which passes through the penis, and by that means ejects the urine.

Sect. V. *The Circulation and Aëration of the Blood in Quadrupeds.*

703. *The process of chylification of the food taken in* is intended to renovate the daily waste of the animal solids and fluids, by mixing the chyle with the blood, which, thus added to,

becomes the source from whence all healthy accretion is derived. It is nevertheless necessary however well charged the blood may be with this nutritive fluid, that such fluid should be also subjected to admixture with pure atmospheric air, to give it vitality, without which the digestive process would be a dead letter.

SUBSECT. 1. *The Organs of Respiration in Quadrupeds.*

704. *The thorax, or chest, contains the principal viscera* concerned in the important processes of circulating and aërating the blood of quadrupeds. This cavity is bounded anteriorly by the matters filling up the space between the two first ribs; posteriorly by the diaphragm, or midriff; laterally by the ribs; above by the vertebræ, and below by the sternum or breast bone. The diaphragm is a very important muscular organ in respiration; it also mechanically divides the chest from the belly by its disk. Its fleshy fibres radiate from their origins to terminate in one tendinous centre. In a state of rest it is anteriorly convex, and posteriorly concave, but when it is in action these positions are reversed. Our more extended acquaintance with morbid anatomy shows, that numerous cases of sudden death arise from a rupture of this organ, most of which are occasioned by over exertion.

705. *The lungs usually present two principal divisions into right and left*, each of which owns minor lobular separations, more or less numerous, according to the animal they belong to. In structure, the lungs are cellular; which structure they derive from being composed of minute aërial divisions, originating in the trachea, and propagated throughout the substance by the bronchia; which bronchial divisions are accompanied by ramifications of the pulmonary artery and veins. The right and left divisions of the lungs are separated from each other by the mediastinum, which is itself divided by the interposition of the heart.

706. *The heart, the great agent of circulation*, floats in a bag, called pericardium, where it is surrounded by a small quantity of fluid. It is made up of muscular, membranous, and tendinous fibres; internally, it presents four principal cavities and several openings. It is situated within the mediastinum, so as to occupy a cavity of its own, distinct from either side of the chest. Its base is in a line with the dorsal vertebræ, and its apex is directed to the left of the sternum, between the eighth and ninth ribs. Its two ventricles are immediately within its body; and its two auricles are rather exterior, and, as it were, appended to it. The left ventricle contains arterial blood; while the right is the reservoir of the venous blood, receiving all the veins except the pulmonary. From the left ventricle originate all the arteries, except the pulmonary. Within the ventricles are valves, to prevent the return of the blood. The auricles are less muscular than the ventricles; the left, or pulmonary, opens into the left ventricle, and the right communicates with the right ventricle. Into the right and larger auricle, the anterior and posterior cavas enter by two openings; and into the left the pulmonary veins pass.

707. *The circulation of the blood* may be described as originating with the left ventricle of the heart, which sends its blood, by means of the great vessel, called the aorta, to all parts of the body. The blood thus distributed is collected again by the veins from all parts, and is by them returned into the heart by means of the two cavas, which pour their contents into the right auricle, which immediately forces it into the right ventricle. From the right ventricle it is again forced out into the pulmonary artery, which carries it throughout the lungs, there to undergo a change, and to be finally returned by eight trunks into the left auricle, which immediately empties it into the left ventricle to renew the process described.

708. *The phenomena of respiration may be thus explained*:— As soon as an animal is born, the lungs, hitherto collapsed and passive, seek the external air, the mouth gapes, and the air rushes in and distends their cells. In a few moments this air, becoming noxious from decomposition, is instinctively ejected, when more is taken in, and thus respiration is established. The mechanical action of the chest, therefore, is a very important feature in respiration, and is produced by an increase of its several diameters; circumferently by the elevation of the ribs, and longitudinally by the agency of the diaphragm; to which latter organ, without doubt, we are principally indebted for the general inflation of the lungs. The diaphragm, or midriff, as it is called, in a state of rest is convex towards the breast, and concave towards the abdomen; but when its muscular fibres contract, it becomes plane-like, which, forcing backward the abdominal viscera, necessarily enlarges the thoracic cavity. The air received into the lungs expands their cells throughout, by which also the blood of the pulmonary vessels finds a ready passage through them. The lungs thus filled, an uneasy sensation, dependent as well on pressure as on deteriorated blood, stimulates them to contract; the diaphragm relaxes, and the abdominal muscles shorten, by which the contents of the abdomen are forced forward; the intercostals cease their expanding action, and the capacity of the chest is diminished, by which the air is expired, or forced out of it. After a momentary pause, the blood becomes collected in the right side of the heart, owing to the resistance it met with in the pulmonary artery from the collapsed state of the lungs, and causes a plethora in every other part of the body, which enables us to account for the fulness of the vessels of the head, and its consequences, to a horse from a tight collar pressing on the trachea in ascending a hill. This accumulation, therefore, renders it necessary for fresh air to be drawn into the lungs; and in this manner the routine of respiration is carried on, the actions, under ordinary circumstances, being repeated about six times per minute.

SUBSECT. 2. *The Aëration of the Blood of Quadrupeds.*

709. *The aëration of the blood is supposed to be thus effected*:— In circulating through the body, the blood encounters both deterioration and waste; the former in giving warmth to the body, and the latter in furnishing materials for the support and growth of parts; it therefore becomes necessary that it should have sources by which it may be ameliorated and augmented; these sources we consider to be the lungs, and the chylopoetic viscera: air is

inspired, and air is expired; but that taken in, and that ejected, are essentially different. The air inspired by animals, called atmospheric air, we know to be formed by the union of three aëriform fluids in very different proportions, there being rather more than two-thirds of azotic or nitrogen gas to something less than a third of oxygen; carbonic acid (or, as it used to be called, fixed air) forming the supplementary gas, to the amount of one per cent. only. The expired air has lost much of its oxygen, and, instead of it, has acquired an accession of carbonic acid. It is now unfit for the support of human life; and the measure of its inability is, its unfitness for combustion. A question now arises, What is become of the oxygen? Has the blood absorbed it, and has it been conveyed in this state over the machine by means of the arteries, while an equivalent of carbonic acid has escaped from the blood? or does the blood furnish the carbon only, with which the oxygen of the air unites? The former supposition had long been that most generally received; but difficulties to its admission have occurred, which have now given a preponderance to the latter opinion. Messrs. Allen and Pepys, after many experiments, could not discover that any portion of the oxygen was absorbed in ordinary respiration; and further results by Mr. Ellis would seem to show also that the oxygenous portion does actually unite with the excreted carbon of the pulmonary vessels, and thus forms carbonic acid exterior to the lungs, and which is exhaled in the expirations. On the other hand, there yet remain some powerful advocates for pulmonary absorption of the oxygen. The expired air is loaded with moisture; but it is not now supposed that such moisture is produced by the combination of the oxygen with the hydrogen given off by the blood; but that it is a direct serous exhalation from the mucous surfaces of the bronchia, by which not only is the blood unloaded of a fæcal portion, but unnecessary heat is disposed of: thus respiration, by its changes, at once gives heat and moderates it; so simple, yet so efficient, are nature's contrivances.

710. *The colour of the blood is singularly altered by the action of the air received into the lungs*, dependent, as experiments lead us to conclude, on its oxygenous portion, and connected with that general salutary alteration which takes place in its change from a venous to an arterial character. It is thus that venous blood, exposed to the action of the air, soon loses its dark hue, and becomes florid; and hence, also, if the blood within the pulmonary artery be examined, which, as before observed, performs the office of a vein, it will be found dark and venous, while that in the pulmonary vein will be found florid and arterial. That this change of colour arises from the air, we know; for if we strangle an animal, and then open each side of the heart, we shall find the blood in both equally black. A change also takes place in the density of the blood by the process of aëration. An experiment made by Dr. Davy on the blood of a sheep yielded 1051 for the specific gravity of the venous, and 1049 for that of the arterial blood. Nearly similar results have also followed the examination of the blood of horses and oxen.

711. *The proportions of these several gases* in the formation of vital air being established, it must be evident, that whatever alters them must produce corresponding change in the animal economy. In the human subject, certain exhalations from both animal and vegetable matters render the air pestiferous; of which the plague, malaria, &c., &c., are sad instances. The brute creation, happily for them, are less injured than man by noxious gases; for, in the midst of the marshes and jungles of India, from which even the human natives are forced to retire for two-thirds of the year, the mightiest beasts live and thrive; as the elephant, the rhinoceros, the buffalo, the stag, the tiger, leopard, panther, &c., &c. This impunity is no doubt a wise provision of nature, by which their animal economy is enabled to resist malaria, and other influences, which in the human species and domesticated animals, would interfere injuriously with the vital aëration of their blood. These aptitudes to resist disease descending to their progeny, perpetuates their races entire. Domestic animals, however, having imbibed some of the peculiarities which characterise the human constitution, of which superior aptitude to disease is one, are not able to withstand the noxious effects of this deteriorated air; on the contrary, when they are taken in the unhealthy season to the marshy districts, their health has suffered, and not unfrequently jungle fever has also carried them off; and how subjected our stabled horses are to influenza, and other pestiferous diseases, we are too well aware.

Subsect. 3. *The Production of Animal Heat.*

712. *The production of animal heat:*—Any thing beyond the slightest summary of the doctrines or theories by which the phenomena of animal heat are attempted to be explained, would much exceed our confined limits; but the practical inferences to be drawn from the subject are so numerous, that we cannot pass it without some notice; first premising that it behoves the inquirer to consider every theory, hitherto formed on the subject, as open to weighty objections. Of the reigning hypotheses, the first is the celebrated one of Dr. Black, materially elucidated by Dr. Crawford; which, presupposing the specific heat of oxygen to be greater than that of carbonic acid gas, it follows that, when the former is converted into the latter in the lungs, that a quantity of *latent caloric must be disengaged*, by which *sensible* heat will be given to the blood; and as that circulates universally through the body, so it imparts warmth throughout the machine. For either our implicit reception, or total rejection, of this theory, it is necessary to be better acquainted with the relative connections between the formation of carbonic acid and the disappearance of oxygen in the lungs than we are at present; on which Dr. Magendie observes, however, " As the oxygen very probably combines with the carbon of the blood, and as every formation of this sort is accompanied with a considerable disengagement of caloric, it is also probable that this is the source of the greater part of the heat of the arterial blood."

But the theory of animal temperature being dependent solely on chemical changes in the lungs, must be considered on the decline, and the arguments brought against it must be acknowledged numerous and important. Sir B. Brodie's experiments, therefore, came opportunely to relieve the lovers of new doctrines: by these the perennial temperature of the body is referred rather to certain conditions of the brain and nerves, than to any chemical decomposition of air within the lungs. Sir B. Brodie found that, after removing the head of an animal, he could keep up respiration by artificial means; that the usual changes from a venous to an arterial state, by the abstraction of carbon, was carried on as completely as by the ordinary process of breathing; but that, notwithstanding, the temperature of the animal gradually lowered, until the action of the heart ceased altogether. Sir B. Brodie also found that, by impairing the nerves of any part, the heat of the part is impaired in proportion to the extent of injury received by the nervous branches, although the circulation be continued perfect. He argues, therefore, that were animal heat derived from the change which takes place in the blood, from a venous to an arterial character, it would follow, that so long as the action of the heart could be maintained, the temperature of the animals thus experimented on would be preserved, as well as the other phenomena. In the admission of either of these theories, as well as of all other explanations of the subject, great difficulties arise. Certain phenomena, however, are satisfactorily established as the result of certain conditions of the air, and of the organs acted on, with which we must rest satisfied. In adopting either of the popular hypotheses which we proceed to note, we shall open a wide field for reflection and further inquiry, which cannot fail to interest us.

713. *Phenomena connected with animal heat:*—First, That an animal, becoming exposed to a change of temperature, always experiences a change in its own heat. Secondly, If an animal be exposed to a temperature, which greatly exceeds its own ordinary standard heat, by some inherent capability of counteraction cold is generated. Thirdly, Reverse these premises, and heat is evolved. From hence we infer, that a tendency is observed in animals generally to preserve a natural temperature of their own, more or less distinct from the medium which surrounds them. This natural temperature is, however, so widely different among them, as to occasion a division into warm and cold-blooded animals; thus, while the temperature of birds is 110 degrees, of the horse 100, and of man 96 or 98, that of fishes is not more than two degrees warmer than the water they inhabit. It is still however to be observed, that the heat of the body is influenced, to a certain degree, by the media around it. Dr. Davy found the heat of the human body two degrees higher in Ceylon than in England. Summer heat increases the temperature of birds as much as six degrees; in the horse it is heightened two degrees only, but may be raised in the dog to 109, by bathing him in water at 112. The accidental heat of the body produced by external media is, however, limited; for, in the dog just quoted, it could not be raised higher than 109 degrees, although placed in a medium of 112; in other cases this is even more evident. Dr. Fordyce found that, in a heated temperature, his body reached 100 degrees; but when the external temperature was further heated to 211, it did not raise the heat of the body beyond that measure, that is 100 degrees. It is also proved that the action of the surrounding temperature on the heat of the body experimented on, is providentially limited both in its increase and decrease. Life of the lowest kind is enabled to resist cold; a living egg is frozen with much more difficulty than a dead, *i. e.* a rotten, one; and a living than a dead plant. An animal body, placed in water at 44 degrees, sunk rapidly in its temperature from 98 to 87; but, at the end of twelve minutes, arose to 93¼ degrees, and in another instance had reached to 90 in thirteen minutes: such are the constitutional powers derived from calorification in the lungs. We are aware of these facts; but we are not so well aware of the means by which they are effected. The lungs, we have seen, are enabled to receive heat from without; and quickened respiration may separate even more than an ordinary quantity of it: pulmonary exhalation also carries off an excess of heat. The skin, likewise, we have reason to think, is a powerful agent in regulating the temperature of the body: it is naturally a bad conducter of caloric in its ordinary states; but, when engaged in sensible perspiration, it acts most powerfully in restraining inordinate heat: nor is it unlikely that the skin is also a recipient of air under certain electric modifications, by which heat may be both increased and decreased, and rendered otherwise active.

714. *The practical inferences to be derived from these doctrines* are very important in our several relations with the animal world. The capability given to animals to support a perennial and equable temperature, enables them to live and propagate in climates equally scorching and cold; and in point of geographical distribution, that valuable subject of our research, the horse, is a very extraordinary instance. But on the other hand, as it has been shown that an increased temperature around will increase the animal heat, so, according to the chemical theory, more oxygen is consumed; but, according to the same theory, the enormity of the process cannot be continued; and in hot climates we do actually find that asthenic (debilitating) diseases, in both man and brute, are apt to assume a sthenic (inflammatory) character. In cold climates, and in the cold parts of the year of temperate ones, the omnivorous animals seek animal food, and the graminivorous also require something like it in the gluten of grain. They will even thrive on fish and flesh; and in all cases more food is required to keep up the animal temperature in winter than in summer; which hint ought not to be lost on us in feeding our horses, &c. In warm climates, on the contrary, and in the summers of all countries, light vegetable food is sought after by the animals themselves, not only to keep down the putrid tendency, but also to lessen the absorption of oxygen; and were we, therefore, to follow nature at this season, we should alternate with our corn a portion of green food for our horses. Our treatment of disease, when the temperature is high, ought to be regulated by the same principles; and, as a hurried circula-

tion evolves more heat, and such evolution expends the vital powers, we should use every means to moderate the surrounding temperature, or to adapt the constitution to bear up against it: on the contrary, in winter, warmth should be encouraged as a stimulus to the flagging powers. Animals pant in summer, to pass off by exhalation serous moisture from the lungs, and the evaporation with it carries off superabundant heat; but, *cæteris paribus*, horses breathe uniformly more frequently in winter than in summer, purposely to encourage calorification. This fact may perhaps be doubted, but were the respirations of a certain number of horses in a hot day in July to be accurately noted at several periods of the day, and were the same done on a frosty one in January, the number of the winter inspirations would be found to preponderate; the circumstances under which the experiments were made being the same. Is it the alleged abundance of oxygen in the air in frosty weather which makes horses more frolicsome at those times? Or does it arise from an instinctive disposition to use muscular exertion, which has a very powerful influence over the heat of the body, as we well know? The heat so generated would become distressing, but that sensible sweat breaks out, and the heat escapes with the evaporation occasioned. If this sweat is a natural relief in summer, it can only be a forced one in winter: it is no wonder, therefore, that exhaustion and disease follow the evil of allowing horses to remain in a perspiring state in a low surrounding temperature, and particularly if exposed to the action of the air, which increases the evaporation, and consequently deprives the surface of caloric; or, in familiar language, produces cold. During sleep, the temperature sinks somewhat, and therefore horses, as well as most animals, seek a sheltered situation for the purpose; it is however a singular fact, that except there be rain, a horse is seldom found in his box, but commonly in his paddock: if the night be frosty, but serene, this will be invariably the case. Wind and wet, by favouring evaporation, encourage a *surface-cold*, if it may be so expressed; a bright atmosphere affords oxygen for the lungs, and a *surface-heat* follows.

Sect. VI. *The Muscular Structure of Animals.*

715. *As muscles are essentially the same both in structure and function throughout the animal kingdom*, we shall introduce our principal observations on the subject here, reserving such phenomena of motion as are appropriate to particular classes, to the sporting department connected with them; as flying to ornithology, and swimming to ichthyology. Muscles are the organs by which the motions of the body are executed. In popular language muscle is known as the *flesh*, in distinction from skin, cartilage, bone, membrane, &c.; and the phenomena it exhibits are so universal, that it is probable it exists in every animal, though we are not so easily able to detect it in some as in others. Muscles appear composed of reddish bundles of solid fibres laid alongside of each other (*a a*, *fig.* 121.), divisible into lesser *fibrillæ* of the same figure, the ultimate division of which it is impossible to trace. When a mass of these bundles is connected together into a determinate form, it is then called a muscle: and as the motions of an animal are very various, and the circumstances under which they are brought about equally so, the peculiar shape these motive masses take on is as varied. Muscular fibre not only exists in determinate masses but it appears to be spread over almost the whole of the body; and it has been very judiciously remarked, that our ideas of it are probably much too limited. We know that it constitutes a principal part of most viscera, and enters into the composition, as we have reason to believe, of many membranes; and in fact that, in connection with membrane, it forms the bulk of the body in most animals. We must not conclude those parts only as muscular that are of a red colour; for the muscles of insects, of fishes, and many fowls, are white. The iris, the stomach, the bladder, and the intestines, whose contractions are powerful and distinctly muscular, want the characteristic hue of red flesh. The hydatid is a transparent bag; yet, when put into warm water, produces motion and contraction, and must therefore be supposed to be muscular. The vascularity of muscles is extreme: in the red-blooded animals, their intense colour is wholly derived from the quantity of blood within them: but, from the circumstance that many muscular parts are colourless, red blood does not seem essentially necessary to muscular phenomena, though many facts prove that it is assistant thereto. Their ultimate power, however, is connected with blood in general; for when deprived of a part of it, they become weak; and if it be wholly lost, they will wither and die. Blood appears necessary for the life, growth, and functional capacity of muscles; but the phenomena of motion are derived from nervous influence. Thus, wherever muscles are present, nerves also are to be met with, as in *fig.* 121., where *c c* is a principal nervous branch, sending out lateral ramifications to the muscle, *a a*, which is seen adhering to a mass of bone, *d d d*; as *b b* indicates a tendon.

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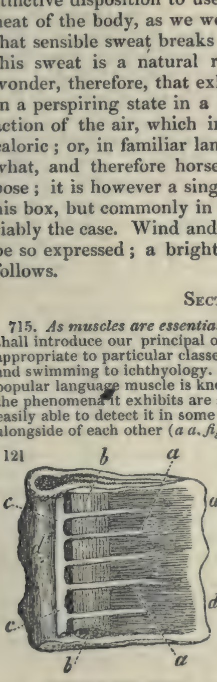

MUSCULAR STRUCTURE.

716. *Exercise is peculiarly favourable to both the structure and functions of the whole muscular fabric*, for it forces more blood to circulate through it; by which it enlarges its volume, and also increases its active force by the greater degree of nervous energy derived from the brain under this excitement. The condition of a racer, hunter, and greyhound, is that admired tension and swelling of the muscles gained by exercise, under the name of training, contrasted with the general fulness and rotundity which is accumulated by gross feeding, without corresponding exertion. Tendons, which are important appendages to muscles (see *b b*, *fig.* 121.), are usually of a silvery white colour, of a firm fibrous texture, and possess great tenacity. The threads of which they consist are attached by one extremity to the surface of a bone, or other hard part; and the other is usually divided among the fibres or bundles of the muscle. Tendons are considered as destitute of sensibility and irritability, and to form a passive link between the muscle and the bone, or other point of support.

717. *The functions of muscles* are principally exhibited in the motions they excite, which are of three kinds; namely, voluntary, involuntary, and mixed. The voluntary motions of muscles are under the influence of the will; the leg is bent, the wings expand, the fins play, and the animal moves, or remains at rest, as it pleases. The involuntary motions are such as take place independent of our control, as the contraction or dilatation of the heart, the digestive actions of the stomach and bowels, &c. Mixed motions are such as partake of the nature of both of the former; such are the respiratory muscles, whose action we can increase or diminish, but cannot wholly suspend. Muscular contractions are produced by stimuli; thus light stimulates the iris, and blood the heart. This obedience to the action of stimuli in muscles is called their irritability, and is principally derived from some power which the brain and nerves exert over them: thus,

if the nerves which furnish voluntary muscles be tied, such muscles become paralytic. Nervous excitement can be interrupted also in the muscles by over-exertion, in which case the partial supply to the part may be either withheld, or it may cease to act on the disordered fibre; for we can tire an individual muscle, or a whole limb, without affecting other parts. It is by this influence over the contraction of the muscles by nervous excitement, that various other phenomena also can be readily explained. It is thus we learn why the relative forces of large and small muscles are not in the ratio of their bulk; for some small muscles are much stronger than larger ones; and some small animals, than others of greater magnitude. The exertions of the blood-horse are, comparatively with his bulk, much greater than those of the cart-horse; because the nervous excitement of the one is greater than that of the other.

Subsect. 1. *The different Motions exhibited by Quadrupeds.*

718. *The muscular actions of animals*, which principally concern our purpose, are those of lying down and rising up, kneeling, sitting, standing, walking, trotting, galloping, leaping, climbing, and swimming.

719. *Lying down and rising up* are differently effected, according to the nature of the animal. The horse does neither after the fashion of the cow; the dog curls himself round, bends his knees, and drawing his hinder extremities under him, either throws himself on his side, or rests on his abdomen, in which case he frequently places out his fore-feet, and sinking quietly, he then puts his nose between his paws: the flexible cat rolls herself into a round mass; the camel bends his knees under him when he lies down, and then reposes on his breast. It would appear that the callosities on the breast and fore and hinder limbs of this animal were given purposely as a defence during his recumbency. In the giraffe, the method of lying down is thus described by Mr. Davis, who executed several portraits of the one at Windsor: — "We will," he says, "suppose it to be preparing to lie on the off-side: the first action is to drop on the fetlock of the off fore-leg, then on the knee of the near one, to bring down the other knee; it now collects its hind-legs, to perform the next movement, the near one being brought rather forward but wide, until the off hind-leg is advanced between the fore ones: this requires some time to accomplish, during which it is poised with the weight of its head and neck, until it feels that its legs are quite clear and well arranged; it then throws itself on its side, and is at ease. When it sleeps, it bends the neck back, and rests the head on the hind quarter." In resuming the horizontal position from the recumbent one, the muscles of the back, particularly the *psoæ*, are strongly contracted.

720. *Of kneeling we have not much to say*, as it is not a very customary attitude with animals, but as a prelude in some to lying down. Sheep, however, frequently are seen grazing on their knees (*fig.* 122.), to relieve the suspensory ligaments of the fore-legs, as well as the suspensory ligament of the head, which tires from long extension, by approximating the head to the ground. Kneeling is also forced on animals for the purposes of man. Cavalry horses are taught to lie down at the word of command, which is done by first forcing them on their knees, and afterwards pushing them on their sides. A few lessons teaches them to do this at the word of command, and a regiment of cavalry horses thus lying, with the riders concealed, each behind his horse, forms an ambuscade that has entrapped many into the snare; so motionless and so shapeless does the congregated mass appear at even a small distance. Kneeling is also taught the camel. The elephant likewise bends his mighty form to receive his rider with complacency. We would here refer the reader to the figures of the extremities of the elephant (*fig.* 114., p. 180.), where it will be seen that in kneeling his hind-legs are of necessity pointed backwards, whereas those of the horse, as is known, of equal necessity must be pointed forwards; his hocks being doubled under him, he throws himself on his side, and then bends his fore-legs also, ere he composes himself to rest. The horse is more often seen wholly recumbent than the cow, whose protuberant carcass is not favourable to respiration when thus pressed on the ground.

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SHEEP KNEELING.

721. *Standing is practised by man, quadrupeds, and birds.* In four-footed animals the body rests on an extended base, "but," as observed by Dr. Fleming, "the head projecting more or less in front of the trunk, to which the fore-legs are attached, the centre of gravity falls nearer these than the hind-legs. They are, on that account, stronger than these last, to enable them to support this additional burden, unless in those cases where the hind-legs are used for particular kinds of motion. The head is supported by the cervical ligaments and by muscles, which vary in strength with the weight of the head and the actions which it is required to perform. When quadrupeds endeavour to support themselves on the hind extremities, as, for instance, for the purpose of seizing any objects with the fore-feet, they rather sit down than assume the erect position; for they rest on the thighs as well as on the feet, and this can only be done where the fore part of the body is small, as in the *Simiæ*,

the squirrel, &c.; in other cases, the animal is obliged to support itself by the fore-feet, as in the dog, cat, &c. The large and strong tail, in some instances, forms as it were a third foot, and thereby increases the surface for supporting the body, as in the kangaroo and the jerboa." (*Philosophy of Zoology*, vol. i. p. 131.)

722. *Walking is described by Cuvier* "as a motion on a fixed surface, in which the centre of gravity is alternately moved by one part of the extremities and sustained by the other, the body never being at any time completely suspended over the ground. It is produced by the alternate flexion and extension of the limbs, aided by the motions of the trunk, advancing the position of the centre of gravity in the intended direction." In quadrupeds we consider that walking is executed by the total displacement of one of the legs, and the partial displacement of another. In all but the slowest walk, either the diagonal or the lateral foot (for it may be either the one or the other, according to the kind of quadruped, or even to the peculiar habit of individuals of a similar kind) is preparing to rise before the other foot is fixed on the ground. When progression, performed after this fashion, is a little accelerated, it then becomes a *pace*, and is very common in some of the larger breeds of dogs, particularly of the drovers' and shepherds' dogs, who assume it to keep up with the walk of the cattle.

723. *Trotting is usually conducted by employing the hind and fore limbs diagonally*; if the trot is only moderately accelerated, the diagonal limbs are elevated together, and the body receives a diagonal support from the other two, which momentarily remain *in situ*. If the trot be further quickened, then the limbs which before remained to support the body are not left *in situ*, but on the contrary are either partially or wholly elevated, as the trot is more or less rapid. In the latter case the body receives the support of impetus only, in the same manner as in leaping. This may be very satisfactorily observed in the bounding trot of deer: when the lateral members act together, the trot is converted into an amble. (See *Paces of the Horse*, p. 288.)

724. *The gallop of quadrupeds is somewhat differently effected*, according as the pace is more or less accelerated; when it has acquired its full momentum, it may be said to be characterised as a succession of leaps. Its extreme velocity is not acquired at once; thus it is that a wager made, that a man can run thirty yards sooner than a horse can run fifty, is much in favour of the man, who gains his maximum of velocity at once. The paces of the horse, both natural and artificial, will be enlarged on in our racing department.

725. *Climbing is only practised by such quadrupeds as have prehensile organs for the purpose.* They have usually hooked claws, and their anterior extremities are usually furnished with a clavicle, or collar bone, more or less perfect, their phalangeal portions being formed into regular grasping members. By these means the ursine and feline animals can pursue their victims into trees, and up the steepest acclivities.

726. *Swimming among quadrupeds is an instinctive acquirement*; and although they must follow the usual laws of mechanics when they swim, yet the organs they employ neither possess sufficient freedom of action, nor such extent of surface, as to enable them to compete with the fins of a fish, or the oars of a boat. In fact, the ease, the endurance, and the velocity with which they move in the water, appear disproportionate to the means engaged. Confidence may do much; but any animal not too young, as a puppy, a foal, or a calf, which has never done more than wet its feet, when thrown into deep water immediately strikes out its limbs to tread the liquid element, and seeks a resistance to its action, without manifestation of terror, and always with success. The quadrupeds immediately intended by nature to live much in the water certainly present organs of adaptation for the purpose; but the water-rat will be found little, if any, more web-footed than the common rat; and although a constant and long residence near to rivers and lakes may make the organs of the dog yield slightly to the physical agencies around him, yet the web-foot, so often alluded to in the Newfoundland dog, is very imperfectly developed. As an animal of quick locomotion, an extremity at all paddle-shaped, or flattened, would have been most inconvenient. We must therefore look to some other source than these outward manifestations, to account for the capability of swimming which exists in all quadrupeds, but which must be acquired by man, whose hands and feet are nevertheless more oar-like than those of the dog. We have ourselves seen a Newfoundland dog of the small smooth-haired variety, which, in coming to England from his native country, was washed overboard during a tempestuous night. As daylight appeared, the gale ceased, when a sailor at the mast-head descried something far in the wake of the vessel, which, by the help of his glass, he was led to believe was the dog; which was so great a favourite with the crew, that it was unanimously requested of the captain of the vessel to *lie to*, and wait for the chance of saving the poor brute (*fig.* 123.). The captain, who had probably lost some time already by the storm, peremptorily refused to listen to the humane proposal. Whether it were the kindly feeling of the sailors, or a superstitious dread, that if the dog were suffered to perish nothing would afterwards prosper with them, we are not aware; but we do know that, as soon as the refusal was made, the steersman left the helm, roundly asserting that he for one would never lend a hand to steer away from either christian or brute in distress. The feeling was immediately caught by the rest of the crew, and maintained so resolutely, that the captain was forced to accede to the general wish, and the poor dog eventually reached the ship in safety; after having been, as we were informed, and implicitly believe, some hours in a tempestuous sea. We wish we could add that he passed the rest of a life in peace, which he so hardly strove to preserve; but he became afflicted with stone in his bladder, which eventually destroyed him. This dog we knew well; and the calculi which caused his death we had some time in our possession. In the polar bear the capacity for swimming must be great, from the evidence of many witnesses. The supplement to Captain Parry's first voyage relates that, on the return of the ships through Barrow's Strait, a bear was met with, swimming in the water about midway between the shores, which were about forty miles apart; no ice was in sight, except a small quantity near the land. On the approach of the ships, he appeared alarmed, and dived, but

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CANINE PERSEVERANCE REWARDED.

rose again speedily; a circumstance which seemed to occasion some wonder, and even led one to say, "that it confirmed the remark of Fabricius, 'that, well as the polar bear swims, it is not able to remain long under water.'" How should it, seeing it is not amphibious?

SECT. VII. *The Reproductive System in Quadrupeds.*

727. *Nothing in the animal economy* is a subject of greater admiration than that reproductive process, whereby a new being arises from the functional properties of the old. In the lower orders of animals, the production of young is but a simple effort; but in the higher orders it comprehends a series of acts much more intricate and obscure. In quadrupeds there is a true sexual distinction and division of generating organs: the work of propagation is mutual, and it becomes necessary for the male semen to render the female ova prolific, either by direct contact, or by a sympathy which we cannot explain.

728. *Animals are impelled to the work of propagation by a periodical æstrum, or sexual desire,* which does not appear until the generating organs are perfectly developed; otherwise we should have parents imperfectly formed, and progeny without stamina: and, as long as the organs remain in a state of sufficient capacity for the rearing of progeny, so long they are subject to a periodical return of the desire. This periodical return of æstrum seems a settled plan in the economy of nature, that the offspring might be brought forth under the most favourable circumstances to their well being. In the grazing tribes it occurs so that their progeny appear in the spring, when herbage is plentiful, the temperature genial, and when time may be allowed for them to gain strength to bear up against the rigours of approaching winter. In the larger orders of herbivorous animals, the production of young is to this end limited to an annual supply, that by their numbers they might not starve themselves, and the arts of man therefore cannot increase their progeny. Nevertheless, the powerful agencies created by cultivation and artificial habits have materially altered many of the phenomena attending their reproductive process; and as shelter and nurture are found for them at all times of the year, so the periods of their æstrum, or heat, return at uncertain intervals, as confinement, or highly stimulating food, may hasten the sexual excitement; thus colts and calves are seen at Christmas, and lambs long before. In the lesser tribes we have, by finding the means of their support, altogether diverted nature out of her course; and the domesticated dog will breed three or even four times in two years, while the wild dog and his congeners, in a state of nature, produce generally once a year only. The cultivated hog farrows in a few months from her former littering, while the wild hog brings forth her progeny but once in twelvemonths. In the human subject sexual desire is providentially constant, that the stimulus to a continuance of the species might not be arbitrarily impeded; but it is never violent, that it might be under the restraints of reason and decency: had it returned at stated periods, as in brutes, it would have been troublesome and irrestrainable. Man, by his intelligence and omnivorous habits, can always supply his progeny, and therefore they are brought forth at all seasons.

729. *The appetency of the mare is vulgarly called horsing,* the bitch goes to *heat*, the cow to *bull*, the fox and the hare *clicket*, the doe *ruts*, the wolf goes to *match* or *mate*, the wild boar and sow, and in some countries the badger also, *brims*, the rabbit goes to *buck*, the hare the same, or it *clickets*, &c. In most beasts a constitutional fever shows itself by restlessness, variable appetite, and increased irritability. The external appearances in all quadrupeds are swellings of the vulva or sheath, with increased vascularity of the genital parts, and some discharge, which in many of the larger animals is every now and then ejected with considerable force.

730. *The male appetency on the contrary,* in most quadrupeds, is constant but not uniform: low feeding, cold weather, and absence from the effluvia of the female, greatly mitigate it; but during the season of female æstrum it rages with uncontrolled force. The irritability of the stallion at this time is well known, and his impatience of restraint bespeaks the ungovernable nature of his desires; even the sluggish and otherwise insensible ass will swim wide rivers, leap hedges, and go through fire, to prosecute his amours; and how violent constitutional excitement must be, the madness of the elephant, and the rage of the camel, in a state of confinement, are well known proofs. We may at once dismiss the physiological reasoning, which would account for these manifestations, as unsuitable in this place, and to be met with in most standard works on midwifery and physiology (especially in that of Burdach), as also in the *Cyclopædia of Anatomy*, &c. It is well known to all who have the care of animals, that the periodical desires which they manifest singularly affect the sounds which they utter, — so much are the sentiments experienced by both man and brute reflected on the organs of voice! In different tribes the peculiar sounds thus given rise to are expressed in conventional terms of long standing, as the stag bellows, the buck groans or troats, the wolf howls, the otter whines, the fox barks or he whines, the boar freams, the goat rattles, the hare and rabbit beat or tap, the badger yells, and the polecat, stoat, and ferret chatter.

731. *The formation of a new being,* partaking of the qualities of its parents, is a process on which much obscurity was long suffered to rest, which is now in a great measure dispelled by modern researches; although some imperfections still exist in the chain of our

knowledge on the subject. It is proved, however, by direct experiment, that the impregnating fluid is conveyed through the uterus and oviducts to the ovarium; and the ova of multiparous animals never reach the uterus, but are retained in the cornua. In a prolific copulation, one of the turgid ovarial vesicles bursts its outer coat, which, as already noticed, it leaves as the corpus lutea is received within one of the Fallopian tubes, and conveyed by it into the uterus, to which it is sometimes after found to be universally adherent by the following means: — A layer of effused lymph is thrown out over the entire surface of the uterus and its connections, forming the whole into one closed cavity: this effusion becoming organised, receives the name of chorion, and is separable into two laminæ; that which remains attached to the surface of the womb is called, by Dr. William Hunter, *tunica decidua uteri;* the other, and which becomes reflected over the ovum, was thence named, by the same great anatomist, *tunica decidua reflexa.* When the ovum exhibits traces of the germ, and which, gradually developing the lineaments of the embryo, or fœtal colt, renders the whole a subject capable of distinct examination, it will then be found surrounded, as already pointed out, by the deciduous and reflected portions of the chorion; the latter forming its proper outer involucrum, within which is an inner and finer expansion, called the amnios. In the latter periods of pregnancy, the tunica reflexa has connection with a new structure, the allantois.

732. *The placenta.* From the attachments of these outer involucra originates a direct communication between the parent and offspring, called the placenta. In this the uterine arterial branches terminate; and from hence the nutritive vascular rami take their origin, by which the young receives nutriment from the mother, through the agency of two umbilical arteries and a vein, occupying a membranous rope of nearly three feet in length and an inch in diameter, called the umbilical cord, or navel-string; and which, in addition to these vessels, gives passage also to the urachus; the whole being enveloped in a gelatinous matter. Thus constituted, this rope or navel-string originating, as we have stated, from the uterine surface, and terminating in the umbilicus of the foal, forms the communicating medium between the mother and offspring; and it is thus that her uterine organs are made subservient to the development of the fœtus, as her mammary organs are afterwards employed in its future accretion and perfection. In the earlier periods of gestation, the investing fœtal membranes are by far the larger portion of the uterine contents; towards the middle period, the fœtus and involucra are nearly equal; but, in the latter months, the weight of the young animal greatly preponderates. It remains to remark on the increase of the uterus by actual accretion of parts, by which, from being completely hidden within the pelvis, its fundus advances beyond its cornua nearly to the epigastrium, when at length, becoming painfully distended, it essays to rid itself of its burden by contractions on its contents, and the young is expelled, as Dr. Tyler Smith has shown, at some fixed monthly epoch.

733. *The gestatory term in quadrupeds is much regulated by their bulk.* In the elephant it is about twenty months, in the camel between eleven and twelve, in the mare and ass the same, in the cow about nine months, and in sheep five. Swine usually farrow between the hundred and twentieth and hundred and fortieth day, being liable to variations, influenced apparently by their size and their particular breeds. In the bitch, on the contrary, be she as diminutive as a kitten, or as large as the boarhound, pupping occurs on or about the sixty-third day. The cat produces either on the fifty-fifth or fifty-sixth day, usually.

734. *The young of different animals at their birth are very differently circumstanced.* In some the organs of locomotion are much developed: thus the young colt, the calf, and the lamb, frisk about by the side of their mothers, or gallop away from danger almost as soon as dropped: others, as those of the canine and feline genera, are born totally indigent; being blind and helpless, they are usually hidden with great care to protect them, or they are carried about by the parent. In the bat they hang to the breasts; in the monkey tribe they adhere round the neck; while in the marsupial group, as the kangaroo, &c., they are protected in a ventral cavity or secondary womb. (See *Kangaroo*, p. 43.)

735. *The viviparous young are nourished by milk, secreted within the mammæ of the mother.* These organs consist of numerous glands, united into a mass by cellular substance and fat. The lactiferous ducts gradually unite and open in the nipple; in the higher mammals by numerous apertures, in the lower orders by one or two only. The teats are called after their situation, as pectoral, abdominal, or inguinal. They however exhibit variations according to the species, and occasionally among individuals of the same species also. These subjects, as connected with the breeding and rearing of domestic animals, particularly of horses and dogs, will receive further consideration with the particular history of those animals.

Chap. IV.

The exterior Form and Characters of Quadrupeds, their Geographical Distribution, the Effects produced on them by the Agencies of Climate or Locality, by Temperature, by Food, and by Domestication.

736. *We will not do the sportsmen of the present day so much injustice* as to suppose that any one of them will tax the last chapter as being irrelevant to our general subject of illustrating field sports. Should they charge us with having offered matter of the kind that might have been much more worthy of ourselves and them, we readily plead guilty; but the philosophical

part of field sports we cannot believe can be otherwise than acceptable to British sportsmen generally. We therefore intreat them to accompany us a little further in the same track, probably, however, rendered a little more interesting by being somewhat more immediately connected with their favourite amusements. The succeeding Part of our work will find us plunged up to the very feather of our pen in the practical part of our sporting detail.

SECT. I. *The exterior Form and Characters of Quadrupeds.*

737. *Indigenous quadrupeds*, we have already stated, are always found to possess that form which best fits them for the moral and physical agencies of the locality they are placed in. They are also further gifted with a capability of bending to circumstances, and in some degree to receive a new stamp, according to the new agencies which they may accidentally meet with. In a description of the external form and character of quadrupeds, we regard figure or shape, dimensions, weight, and colour.

738. *The general figure or shape of quadrupeds*, excluding the head, neck, and tail, is quadrangular. The measurement of one quadruped, of any given species, to be at all definite, should be conducted with due consideration to age, condition, and sex. The terms of head, neck, back, belly, sides, and stern, are sufficiently understood, both individually and relatively, by those who are in the habit of considering the exterior of quadrupeds; but to make the subject more systematic, it has been recommended to divide the body into so many planes or edges, as the dorsal, sternal, ventral, &c. These, however, involve the subject in much ambiguity, and until they are received by common consent, will rather mislead than assist. (See *Dr. Barclay on Nomenclature.*)

739. *The age of quadrupeds has much effect on their exterior form and characters*, and, in a commercial point of view, on their value also. Horses, on sale or barter, are considered as matured at four years old; but the sportsman well knows the differences presented in the figure at this age and that seen at eight. In estimating the figure, the sex must also be taken into account, for the male and female forms vary much from each other, as we see in the bull and the cow, and in the stallion and the mare. The frame of the stallion is much more expanded than that of the mare, thereby to assert, as it were, his superiority, as well as to assist his masculine powers. His fore-hand takes the start of his hinder parts; his crest rises, his chest thickens, and his mane and tail flow in ample profusion. In a word he is all over the stallion, and certainly, as such, he presents one of the noblest objects of the animal kingdom. (See the portrait of Jupiter, *fig.* 142., p. 240.) On the contrary, the very perfections of the stallion would be blemishes in the form of the mare, viewing her in her maternal character. Her fore-hand is intended by nature to be low in comparison with her croup, and were it otherwise, when in foal, her fœtus would have a constant tendency to gravitate outwards, and abortion would often occur. How powerfully formed is the lion compared with the lioness: his head, neck, and shoulders, are monstrous; and, as though these were not enough to dismay all enemies, he is graced with a long shaggy mane, which increases his apparent size; and at the same time he possesses a voice also that inspires nothing but terror. While, therefore, the less powerful lioness is attending to the duties of maternity, her mate is making use of his bulk and strength to provide food for their offspring. This increase in the size of the male beyond that of the female is not universal; it is but little apparent in dogs, or in many of the smaller quadrupeds, and in lower animals the circumstance is reversed.

740. *The dimensions and weight of quadrupeds*, like their properties of figure and shape, can only be measured by the relative proportions of individuals of the same genus or species. What would follow a comparison made between the diminutive shrew-mouse, of an inch and a half in length, and the gigantic elephant, of fifteen feet high, but wonder at the diversity of nature's works, and admiration at the power which could produce such extremes from one common model of organisation? But notification of the dimensions of an individual quadruped is of great use in determining the species it belongs to, particularly with regard to such as are in their wild state. Domestication makes such aberrations in all the particulars under notice, that we are very liable to be deceived without due caution. Some spaniels do not measure so much as seven inches in height, nor weigh more than five or six pounds; while others will measure sixteen inches, and weigh perhaps thirty pounds. The dimensions and weight of young animals are inferior to those which are matured, and their parts are unequally proportioned. The fat likewise of young quadrupeds is more generally distributed; that of the older, more partially, unless when it is forced by the arts of man to become otherwise. The weight of animals is subject to considerable variations, even in the congenerous wild tribes, and therefore any given quantum of gravity cannot with propriety be depended on as an assistant in classification. An old hare is often killed by the sportsman which weighs little more than five pounds. On the other hand, it is not very uncommon to take another, apparently not more than three years old, of the weight of seven and sometimes of eight pounds and upwards. Limits are however set to the dimensions of the smallest, as well as the largest quadrupeds. We have reason to think that the shrew and the lesser water-mouse are amongst the least of the mammals, and that more diminutive figures than these would fall a continual sacrifice even to large insects, as well as to the lesser birds. With regard to more extraordinary dimensions, we conceive the antediluvian mammoth and the postdiluvian elephant as types of the maximum of growth among quadrupeds. Not only would the produce of any part of the earth within the range of any larger beasts be insufficient for their support, but their osseous machinery would probably give way to the superincumbent weight imposed on it, did it exceed these limits. As it is, even the bones of the mastodon are thick and clumsy in the extreme, and their cancellated structure filled to the centre with bone.

741. *Colour is an external character of much importance to the naturalist, and to the sportsman also*, in his discrimination of species; and although it applies more particularly to the plumage of birds, it is not wanting in interest and character in quadrupeds. Of all the external characteristics it is, however, that which requires the most intimate acquaintance with zoology to avoid drawing erroneous conclusions therefrom. The colour of quadrupeds varies in a few instances with the sex; but these are too few to detain us: in birds the variation is sufficiently notorious. Age in the quadruped has much influence over the colour; season also alters it, and climate is a powerful agent in determining the tinting of its inhabitants,

Different periods of life have a powerful influence over it, as we see in the hue of the colt, which is often directly the reverse of that he will present when arrived at maturity. The grey dapplings of a five-year-old horse, in most instances, are changed for a milk white in the Nestor of twenty-five; and the rich brown markings of the black and tan terrier of a three-year-old, will turn to a dirty grey before he reaches fifteen or sixteen.

742. *Locality* has its influence in generating and preserving a predominating colour in its indigenous quadrupeds. The tawny hue of the lion has never been broken in upon, and the camel is neither more nor less lively in his colourings than he was two thousand years ago. When the art of man has subjected any race to so close a domestication, that he can perpetuate and direct the breed at his pleasure, the original colour is often entirely lost sight of, and a hue predominates different from the former: thus we find, that horses bred in the marshes of Lincolnshire are mostly black; in the Yorkshire wolds, bays and browns are more common; while in Suffolk they are chesnut. Much of this certainly depends on breeding from affinities; but, notwithstanding, it is not improbable that an indirect tendency exists in some localities to fix a certain colour on particular quadrupeds independent of temperature. This we have reason to believe from the phenomena observed by confining animals to particular varieties of food.

Sect. II. *The Geographical Distribution of Quadrupeds.*

743. *The distribution of quadrupeds over the earth is uniform neither in number nor nature.* In the polar regions there are comparatively few of them, and in such as are found there, the species multiplies slowly, and the individuals seldom reach their full size. Enormous animals are not fitted for these climes, and with the exception of the polar bear, which appears to have been especially formed for this immediate locality, few gigantic animals are found as constant residents there. Certain groups or families appear to occupy a particular zone or circle, the centre of which is favourable to the full development of the form, and the perfect enjoyment of life in the various members of it: but as the centre is receded from, these advantages are lessened, and at the circumference the species ceases. Each group, family, or species, thus locally confined, on examination will be found especially framed, both internally and externally, for the country in which it is placed. The structure of many of the most striking groups would not become completely developed in any other climate, nor the functions so regularly conducted as in that in which they are placed. This is strikingly exemplified in the peculiar formation of the camel and dromedary in the old world, and in the lama and vicunna in the new, neither of which can be brought to multiply with us. The distributions of animals is considered by that eminent naturalist, Mr. Swainson, "to be intimately connected with the limits of those grand and obvious sections into which the globe is divided; and that, in proportion to the geographical proximity of one continent to another, so will be either the proportional identity, or the analogy, of their respective animals." He considers Europe, Asia, and Africa, as agreeing more particularly in possessing certain animals in common, which seem excluded altogether from America and Australia; both of which are not only isolated in situation, but their animals have a decided difference of form and habit from those of the three continents of the old world. He considers that the animal geography of Asia is connected with that of Australia by the intervention of Borneo, New Guinea, and the neighbouring isles; while that of America unites with Europe towards the polar regions. (*Swainson's MSS.*)

744. *Some classes of animals* are however so framed as to be capable of maintaining life and health in countries very widely diffused, and essentially differing in climate, temperature, and food, from those to which they appear indigenous. Fortunately for man, some of those most useful, and such as render them the most essential services, are among the number; as the horse, the ox, the sheep, the hog, and last, but not least in worth, the useful, the faithful, and the amiable dog. This capability of supporting a wide geographical distribution in animals appears to be derived in part from a superior power of regulating their own temperature, but much more from their extensive means of assimilating nutriment from a great variety of edible matters. This bending to circumstances is, nevertheless, not without its limits. The horse, even in what we consider his native quarter, is not common beyond the sixty-fourth parallel. In Europe, although he approaches the polar circle, even yet, when he has reached the Zetland islands, appears to have arrived at the limits of his northern distribution. Here he exhibits only a dwarfish stature, beyond the powers of cultivation to enlarge (*fig.* 124.). His maturity is protracted; the mare seldom breeds more than once in two years; and the existence of the species is curtailed to one half of the usual period. The ass is even more limited in his distribution than the horse, being seldom met with beyond the fifty-fifth degree of latitude; nor does he arrive at great perfection except in climates situated between the twentieth and fortieth parallels. The ox and sheep also are not able to retain their size and energy beyond the fifty-fourth degree of latitude. At the sixtieth they are stunted in their growth, and their physical powers become deteriorated. Beyond this line a new creation meets our view, in which the same adaptation to the locality is still apparent. The reindeer alone almost fills up the blank created by the loss of the horse, the ox, and the sheep; for he performs the services of all these. Here the elk rears his stupendous

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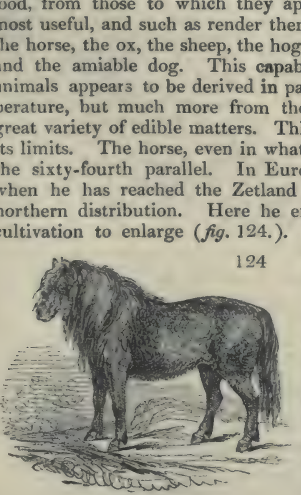

ZETLAND PONY.

bulk, and here the sable, the marten, the ermine, and the arctic fox, brave the rigours of a northern clime with impunity, and render essential services to man by their coverings. Most of the *Caninæ* and *Felinæ* are capable of a very wide diffusion also. The cat has found her way to most parts of the world, and the dog is now known wherever man has set his foot.

745. " *The particular or local distribution of animals*, it is however necessary to remark, is affected by various causes which have little influence on their geographic distribution. Thus the purely insectivorous birds of the family *Sylviadæ* feed on all kinds of small insects, without regard to any particular species; yet those of America and those of Europe are each characterised by a peculiarity of structure which invariably designates the continent to which they belong. The wry neck is represented in America by the *Oxyrhynchus cristatus*. yet neither of these birds is found to inhabit all parts of their respective continents; their range, on the contrary, is regulated by temperature, food, and other circumstances connected with local distribution." (*Swainson's MSS.*)

746. *The geographical limitations of quadrupeds* appear to be mainly controlled by climate or temperature, and subordinately so by food. These agencies operate likewise in diversifying the form and habits of those animals which are capable of an extensive diffusion. Domestication and cultivation have likewise lent their aids to render the diversities of animals, not originally indigenous, even more numerous and striking. These several agencies, if our limits permit, will be further cursorily noticed in another section.

SUBSECT. 1. *The Effects of Climate, or Temperature, on Quadrupeds.*

747. *Climate and temperature* are so commonly used synonymously, that for convenience we shall do so likewise, being at the same time aware that the practice is open to criticism. For, although the temperature of a climate is the principal agent concerned in most of the physical phenomena which distinguish one locality from another, yet it does not appear to be wholly so, for we see climates which own the same range of thermometrical heat, with very different products of the animal, vegetable, and mineral kingdoms. Without, however, any direct reference to climate, as parallels proximate to, or remote from, the equator, we shall use the terms principally as significant of the heat and moisture which characterise any given portion of the globe, and subordinately also as owning lesser agencies of distinct characters. How favourable a high temperature is to life in every shape, vegetable as well as animal, we see by the immense difference in the number and nature of both, to be met with in tropical climates, from those found in the arctic regions. And without doubt, while, as already hinted at, there are physical circumstances connected with locality itself, still temperature is the principal agent in the development of life in plenitude and perfection. Temperature is an inherent principle also in the animal body, but in very different degrees. In those animals, termed warm-blooded, a power is obviously possessed, both of resisting the effects of heat from without, and of generating heat within, to combat exterior cold. In a minor degree these properties are without doubt also possessed by the cold-blooded tribes, for they can resist congelation. Human persons are able, without danger or even great inconvenience, to bear a thermometrical heat of 260°, from the controlling powers they possess of keeping down their own heat to 101°, or at most 102°. Dr. Clark states, that in one of the tepid springs of Bonarbashy, situated near the Mender, in which the thermometer rose to 62° Fahrenheit, fishes were seen sporting in the reservoir. In the thermal springs of Bahia in Brazil, small fishes were seen swimming in a rivulet that raises the thermometer to 88°. Sonnerat states, that he found fishes existing in a hot spring at the Manillas, at 158°. M. Humboldt and M. Bonpland, in travelling through the province of Quito, in South America, perceived fishes thrown up alive, and apparently in good health, from the bottom of a volcano, along with water and heated vapour that raised the thermometer to 210°, being only 2° short of the boiling point. The temperature of a dog, exposed to a heat of 112°, can be raised but little beyond its natural standard, which is however of itself a high one.

748. *The effects of a temperature greatly reduced below the ordinary standard* is equally capable of being resisted by a counteracting influence inherent in the animal frame, so as to enable it either to generate heat in proportion to that which is abstracted by the surrounding media of cold and moisture, or otherwise to resist these agencies of abstraction. In climates and seasons when the thermometer indicates a degree of cold much below zero, the temperature of the animal body continues nearly the same, and the functions remain almost undisturbed. Such is the resistance offered by some of the lower orders of animals to external agencies, that they may even be frozen without the loss of life. The carp, it is said, may be thus taken from pond to pond, and eels may certainly be carried in a congelated mass to any distance, and if thawed gradually, they will be found to have sustained no injury. If, however, they be at once placed in a temperature much higher than that indicated by their mass, the suddenly rarified blood will rupture its vessels, and destroy the animal life; on the contrary, admit warmth with due caution, and the feeble thread of vitality will swell into a full cord of life. It is thus that the frozen limbs of men and animals are restored by rubbing them with snow-water; whereas, when they are exposed to the fire, or plunged into warm water, for the same purpose, mortification immediately follows — the frozen parts are yet too weak to bear the excessive stimulus of heat thus suddenly applied. Eggs, as living matter, have a temperature higher than that of dead matter, *i. e.* than that of rotten eggs: thus, one fresh laid requires several degrees of cold to freeze it more than is sufficient for the congelation of a rotten one; and a living egg, which had already been frozen and thawed (*i. e.* killed), took seven minutes and a half less time to freeze than one which had not been previously frozen. A living egg resisted congelation seven minutes and a half longer than one which had been previously destroyed by the same means.

Subsect. 2. *The Clothing of Quadrupeds as affected by Climate or Temperature.*

749. *The coatings of the dogs of Guinea, and the sheep of Africa and India*, are so thin as to leave them almost bare. In Siberia on the contrary, these, and other quadrupeds, are furnished with a covering of extreme warmth, by means of a short fleecy tegument, which is surmounted either by long and strong hair, or by a shorter kind much crisped up, but equally strong. Even between the coverings of the British animals of the northern and southern parts great differences are observable. In North America, the wild goat of the Rocky Mountains (*Capra Americana* Rich., *fig.* 125.), offers an example of the preservating properties of a very long fleecy covering against the intensity of cold. The musk ox also, figured at p. 66., is equally an example of what we have been stating. The shaggy coat of the Zetland pony (see *fig.* 124. p. 207.), and the smooth hair of a London coach-horse are wide contrasts at every season of the year. It is therefore by this alteration in the quantity and quality of the external covering, that we find quadrupeds capable of supporting life in climates where the mean annual temperature differs extremely.

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WILD GOAT.

750. *The deciduous change in the coatings of quadrupeds* is also the effect of periodical variations in the temperature. Previous to winter the texture of their clothing thickens, and its length increases more or less according to the thermometrical heat of the locality. Thus cattle, near the level of the sea, have shorter coats than those of a higher level. Our stabled horses are placed in an artificial climate, and in a temperature which never descends to palpable cold; thus the stimulus of necessity being absent, either the deciduous change does not take place at all, or otherwise their autumn coat is found to be but little coarser or longer than that of the summer. As the spring advances, the long coat of the unhoused tribes gives place to one which is composed of short, thin, and inclined hairs. The observant sportsman and the warrener, likewise, well know of how little value the fur of the hare and rabbit is during this season, as well as how thick and strong, or, in the language of furriers, how *ripe* it becomes during a severe frost. The coverings of animals, as we have already noticed, are also affected in their colours by the effect of temperature, as witnessed in the very different tints exhibited between their summer and winter dress: that of the polar bear blanches with the rigour of the season; that of the arctic fox, the ermine, &c., even vie at this time with the snow in whiteness. The high and equable temperature of the torrid zone, on the contrary, preserves a perennial colour in the covering of its quadrupeds, which are most of them remarkable for their great brilliancy, as we see in the tiger, leopard, zebra, &c. Among birds these various agencies are seen to act with even greater power, and likewise produce more curious anomalies, as we shall have occasion to notice in our ornithological detail. These changes in the coats being evidently connected with alterations in the temperature of the climate in which they occur, lead us to inquire into the nature of the benefits derived therefrom, and the rationale of their action. On this subject, Dr. Fleming observes, "The rate at which bodies cool is greatly influenced by their colour. The surface which reflects heat most readily suffers it to escape but slowly by radiation. Refraction takes place most readily in objects of a white colour; and from such, consequently, heat will radiate with difficulty. If we suppose two animals, the one of a black colour and the other white, placed in a higher temperature than that of their own body, the heat will enter the one that is black with the greatest rapidity, and elevate its temperature considerably above the other. These differences are observable in wearing black and light-coloured clothes during a hot day. When, on the other hand, these animals are placed in a situation, the temperature of which is considerably lower than their own, the black animal will give out its heat by radiation to every surrounding object colder than itself, and speedily have its temperature reduced, while the white animal will part with its heat by radiation at a much slower rate. The change of colour in the dress of animals is therefore suited to regulate their temperature by the radiation or absorption of caloric. (*Philosophy of Zoology*, vol. ii. p. 19.)

751. *Is this winter garb assumed by animals intended to act as a security against danger?* It has been very generally held that nature, by assimilating beasts and birds with the colour of snow, expressly intended to screen them from observation; and it is most accordant with her beneficence to consider that such intention was kept in view; but that it was not the only one, nor probably the principal, would seem apparent on a due consideration of the subject. Dr. Fleming is not even favourable to any such direct intention on the following grounds: — "All our conclusions," he observes, "on final causes, ought to be the result of very extended observations, lest we delineate arrangements which would be productive of pain and ruin to many species, where we intended to unfold the marks of wisdom and benevolence. If the

white dress of the Alpine hare and ptarmigan concealed them from their enemies, the eagle, the cat, and the fox, these last, by being deprived of their ordinary food, would be in danger of starvation and death. But this variation of colour is not confined to weak or defenceless animals only; for beasts and birds of prey are likewise subject to the change. Hence, if it yielded protection to some, it would enable others to prey with greater certainty of success on their defenceless neighbours. Many of these rapacious animals (as the ermine, for example, which is at all times well qualified to provide for its wants by its determined boldness, extreme agility, and exquisite smell), do not stand in need of such assistance. If this change extends to the rapacious as well as the defenceless, it may likewise be observed in aquatic as well as in terrestrial animals. In reference to the former we would ask, What protection is afforded to the black guillemot, during the winter, by its mottled plumage, or to the little auk by its white chin, since the whiter their dress, so much the more unlike the dark-coloured water of the clouded season in which it is exhibited? The popular opinion on the subject, therefore, must be relinquished as untenable; especially as the change of colour from dark to white does not vary, however different the habits or even the stations of the animals may be in which it takes place." (*Loc. cit.* p. 22.) With all our respect for Dr. Fleming, and it is great, we cannot accede fully to his line of argument; but would rather consider that, *in medio tutissimus ibis.*

752. *In addition to the protection afforded by the outer coverings*, as the hair of quadrupeds and the feathers of birds, against great changes in the temperature of the atmosphere, we may remark that the skin itself is also a bad conductor of heat, and consequently assists greatly in protecting the body from the effects of cold. The external fat is likewise a considerable non-conductor, and is the great means of preserving the bodies of whales from the intense cold of the icy regions. Muscular action also is the means of evolving much caloric; and thus, when animals retire to sleep, they invariably choose a sheltered situation, because they have lost this means of increasing their temperature.

Sect. III. *The Food of Quadrupeds, and its Effects on the Animal Frame.*

753. *When we regard the great variety of matter that is taken in as food by quadrupeds*, and when we consider that, whether the articles which compose this variety be received individually or in mixture, life is equally supported thereby, we are struck with admiration at the powers of assimilation granted to animals; but although this is essentially true, yet the statement must be admitted with some limitation. Of the various grasses any one is equal to support life in every individual of the herbivorous animals, but it requires a change from one to another to insure a continuance of health; which is in strict accordance with the harmony of the scheme of nature, to make every portion of her works subservient to the use of some other portion of them. Some animals, it is true, confine themselves principally to one edible matter, but they are comparatively few to those that are more omnivorous.

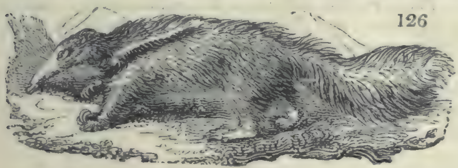
Subsect. 1. *The Nature and Properties of the Food of Quadrupeds considered.*

754. *Food is derived from vegetable and animal matter*, and as any quadruped mainly subsists on the former, or on the latter of these, it is called herbivorous or carnivorous; while such as can indiscriminately receive sufficient nutriment from either of these, is termed omnivorous. It must however be remarked, that although these distinctions are correct, yet it would seem that vegetable and animal matter both consist of the same ultimate elements, but somewhat differently arranged and proportioned. The organs of assimilation, we are well assured, animalise vegetable matter; and we are equally certain that animal matter in the form of manure, as powdered bones for instance, is eventually converted into vegetables and fruits. It is true, that in vegetables the quantity of azote or nitrogen is small, but enough remains to prove that the real elements of both vegetable and animal matter are oxygen, hydrogen, carbon, and azote.

755. *Vegetable matter*, resolved into its primary compounds, exhibits gluten, farina, mucilage, oil, and sugar. Of these gluten possesses the most nutritious properties, from containing nitrogen in considerable abundance; which, however, is found only in small proportions in succulent herbage. Wheat is an example of vegetable matter, in which gluten exists in very large proportions. Farina is the next primary compound in its quantum of nutritive properties, and, as we know, exists in large proportions in wheat, and likewise forms a valuable portion in all pulse, tuberous roots, &c. Fruits and succulent vegetables contain a moderate proportion only of gluten and farina; but they abound most in mucilage, oil, and sugar, which last is much more nutritive than the two former. Animals, in a state of nature, we observe to adhere with remarkable uniformity to the same kind of food. Many carnivorous animals will only eat one kind of flesh: some upon the flesh of quadrupeds; others, again, upon that of birds; and others subsist entirely on insects. Among herbivorous animals, some eat only certain plants, others only certain parts of particular plants, as the seed, the fruit, the leaves, or the stalks. Insects, in many instances, exclusively confine themselves to feed on some one species of vegetable matter. There is in most cases a striking analogy between the substances eaten and the organs used in the prehension, but more particularly in the mastication, of them, as the structure of the teeth indicates that the selection is not the effect of accident, but depends upon the original conformation of the body, and the harmonious adaptation of its organs of assimilation. We have already seen that the teeth of different animals are adapted to the particular habits and wants of the owners: thus, some are formed for seizing and browsing on branches, and others for cropping the more succulent and delicate parts of plants; some, again, are structurally framed for masticating those that are firm and dense

in their texture, as desiccated grain. The beaks of birds are infinitely diversified in their form and structure; some are long and pointed, others are broad and flat; while some are hooked or curved. On carefully examining these diversities in the figure and composition, either of teeth or beaks, it is found that each is adapted for receiving only certain kinds of food; and in all cases, the nature of the stomach, whether membranous, muscular, or ruminant—whether simple, as consisting of one cavity only, or compound, as divided into several distinct chambers—precisely corresponds with a certain formation of the teeth of the quadruped, with the mandibles of the bird, and in fact with the other assimilating organs of the individual concerned, be it beast or bird. It is further to be observed, that from whichever of these two great sources they derive nourishment in their natural state, nature has nevertheless allowed to their organs a capability of extracting nutriment from substances differing from those they usually subsist on. This beneficent provision is in full harmony with the intention of keeping up the races of living beings under adverse circumstances.

756. *Innumerable experiments have been made on animals*, to determine the power of subsisting on various simple substances used exclusively as food for a long time; and although the results have been various, yet one very important practical fact has been elicited by the concurrent testimony of all the experimenters; which is, that no one substance, either animal or vegetable, however nutritious in itself, when used for a considerable period, is capable of keeping the body in health, or even of maintaining life; but, on the contrary, that one and all eventually reduce the system, and finally destroy it. An ass, which had been fed on boiled rice only, died in fifteen days, having latterly refused to eat at all. A dog fed exclusively on white bread, made from pure wheat with water, died at the expiration of fifty days. Another, which was kept on military biscuits, continued during a longer time in health, which undoubtedly arose from the circumstance of these biscuits being compounded of wheat, oatmeal, and barley. In the feeding of hounds and other sporting dogs, it is therefore essential that their food should be mixed. Oatmeal alone, given exclusively, would eventually destroy a dog; but, when combined either with broth or milk, it would support life; and, provided potatoes were occasionally added to the mixture, would be rendered still more wholesome, and even more nutritive, as being more varied. Experimentally, dogs have been fed solely on cheese, and others on hard eggs; but in both cases they became weak, emaciated, and mangy. Rabbits and guinea-pigs have likewise been fed altogether on corn, hay, barley, cabbage, carrots, and other vegetable matters; but no one of these edibles has supported life for even a few weeks; while it has been proved that any two of these edibles will maintain life for a long period. Similar experiments have been followed by nearly the same results; by which we are taught that, in feeding our horses, and indeed all the granivorous tribes, constant confinement to any grain is unwholesome; and that, when hay is denied to them, and they are almost exclusively fed on oats, as is the case with some post and coach-horses, injurious consequences may eventually follow. Nevertheless, we cannot limit nature entirely within any fixed boundaries of our own. Thus we have reason to suppose that some quadrupeds are by nature herself confined to one variety of food only, of which several instances might be brought forward: one presents itself in the great anteater of America (*fig.* 126.), the form of whose head imperatively confines him to sucking up the bodies of ants as a means of support; for, shaped as it is here seen, we know of no other use it could be applied to. Here the waste and supply are equally in unison; the American ant being so overwhelming in its numbers, that even the human inhabitants must fly before it, had not Providence provided an animal purposely formed to limit its increase.



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GREAT ANTEATER.

757. *The total deprivation of food* is well known to be invariably fatal to all living beings; but the period at which death occurs from the commencement of the fast varies greatly in different animals, and also in different individuals of the same kind. Horses cannot bear a fast many days. Cattle are rather more tenacious of life under total abstinence. Dogs have survived after thirty days of fasting, and in one instance after thirty-six days. A badger lived thirty days without food. Carnivorous quadrupeds are able to bear a longer privation of food than the herbivorous. An antelope, which survived a fast of twenty days, was considered as a wonder. Animal matter is more essentially nutritive than vegetable matter; neither are the effects of the former so soon lost in the exercise of the animal exertions as those which are derived from the latter. The occasional abstinence of all predatory animals must be great from accidental circumstances; it was therefore, without doubt, with a view to their preservation under these casualties, that they were so framed as to be enabled to resist the fatal effects of long fasting much better than herbivorous animals, whose location is seldom without the means of support.

758. *A further power is also given to animals to receive sufficient nutriment* for the maintaining of life by matters foreign to their general food. Horses have been supported principally, if not wholly, on dried fish; birds have been prevented from starvation by eating flesh; and sheep, buried under snow, have derived nourishment from their own wool, or from that of their fellow-sufferers. Cold-blooded animals bear fasting a very long time, for in

them the vital expenditure is slow. Much of their life is passed in a quiescent state, and if nothing is received from without, nothing is expended within. It is thus only that we can admit the possibility of toads having survived a close entombment for several years. The tortoise has lived nearly two years without food, serpents the same time, and the variety of carp, called gold and silver fish, have supported themselves in glass globes for a longer period on water alone. It must, however, be taken into the account, that river water is usually stored with animalculæ; thus it is that distilled water will not support them long.

Subsect. 2. *The Effects of Food on the Form and Characters of Quadrupeds.*

759. *Food influences all the external characters of quadrupeds.* Without adverting to the different appearance of an ill-fed beast and one which has an abundant supply, we may remark, that the form of the young animal that suffers a deprivation, either in the quantity or quality of its food, never becomes perfectly developed, either in its bulk or proportions. The integuments of such a one never present the gloss of health, neither is the constitution at large often free from disease; internal congestions take place, and the mesenteric glands frequently become schirrous. On the contrary, in proportion as the supply, within prudent limits, is liberal, so is the growth extended, and the form reaches to the standard of the parent. It often also exceeds the parent stock, from the excess of nutritive stimulus applied; and thus horses, oxen, and sheep, brought up in low marshy lands, where the herbage is luxuriant, attain a monstrous size. Horses, in particular, when bred and pastured in the rich, flat, and moist lands of Lincolnshire, become expanded in bulk; and it is from such sources that our carriage and heavy troop-horses are supplied. To what a state of monstrosity may not our bacon hogs be fed; and our prize oxen exhibit the extraordinary powers of food when forced on an animal, by increasing the supply and restraining the expenditure. It is from our artificial mode of feeding cattle that our markets are now furnished with veal all the year round; and lamb is common some months before it appeared on the tables of our forefathers. Stimulating food produces the sexual appetite at almost any time the owner may desire; and as man, by domestication, has provided artificial sustenance and housing for the young animals thus unseasonably produced, nature does not interfere in this breach of her ordinary laws. (See this subject in the *Food of Birds*, p. 631.)

760. *The powers of food in altering particular parts of the body* is exemplified in pigs, which, being fed on madder, have their bones tinged red by it; and also by the fact that the fat of black cattle, when principally fed on barley-straw, becomes yellow. Oil-cake does the same with both sheep and cattle. Food, extra-nutritive as farinaceous matter, in large quantities, hastens the development of the frame; and thus well-fed colts become furnished, as it is called; that is, their organisation generally is consolidated some months before those which are less artificially treated. The custom of giving spirit, extracted from grain, to puppies to stop their growth, as already noted when describing the bones, acts on a similar principle, by forcing the vital powers to an early perfection of the frame, which puts a period to its increase, or by retarding, as alcohol does, the vital processes of the system.

Subsect. 3. *The Effects of Domestication on the Form and Characters of Quadrupeds.*

761. *Domestication proves a powerful agent in promoting various changes* from the original form, characters, and habits of quadrupeds. By its agency they are enlarged to monstrosities, or diminished to pigmies; it even operates in the increase or decrease of the organs themselves. A breed of tailless cats and curtailed dogs has been perpetuated. The horns of cattle, essential as they are to the animals in their wild state, are dispensed with when the animals themselves are taken under the protection of man; and polled breeds of oxen and sheep are now common amongst us. We have an instance of the former in the polled Galloway bull (*fig.* 127.). Neither need we wonder at these changes, great as they are, when we consider how numerous and how potent are the agents which the artifice and experience of man enable him to employ. Indeed, man himself, though apparently a free agent, is no longer the same being as when he lived in a pure state of nature; his external characters are much changed, while internally he is subject to morbid alterations unknown to savages. Neither is it to be wondered at that the controlling power of man should be so influential, extending as it does over every important circumstance connected with the beasts around him. Man regulates at his pleasure the quantity and quality of their food; he also governs all their motions, and restrains their exercise to close confinement, or increases it to great and continued exertions. Even the temperature they reside in is raised or lowered at the will of the owner; and still further and more important restraint

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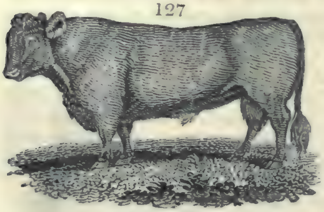

Galloway Bull.

is put on them, by regulating their sexual intercourse, which insures the perpetuation of almost any desired form, by allowing of propagation only between such individuals as approach the nearest thereto. In other instances, an accidental variation which may have occurred, or a singular deformity, has been seized on and propagated by future similar selections, until it became permanent, and then it constituted a breed. To something of this kind, as observed before, we owe the wry-legged terriers, so useful in the shooting of rabbits. It is probable also that a crooked mastiff offered the foundation for the bull-dog, and a rickety ewe produced the Ancon race of sheep.

SUBSECT. 4. *The Migrations of Quadrupeds.*

762. *Quadrupeds exhibit less disposition to periodical wanderings than birds,* their physical powers of locomotion being more confined. But where the rigorous season of some climates buries the herbage of the earth in snowy depths, and congelates the streams into impenetrable hardness, the four-footed inhabitants are forced to emigrate. A long continued season of drought in arid climes, by crisping up the vegetation, and drying up the springs, will equally produce migration. In the description of the springbok, or lyre antelope, in *The Menageries*, it is observed that "The migrations of innumerable companies of springboks, from unknown regions in the interior of Africa, to the abodes of civilisation, are amongst the most extraordinary examples of the fecundity of animal life. The vast quantity of a species of birds of South America, which produce the *guano* (a manure) in sufficient abundance to be a great article of commerce; the flocks of pigeons of North America; the locusts of Africa; are not more striking than the herds of springboks. Neither do the antelopes travel alone, it would seem; the lion even, as we are told, has been seen to migrate, and walk in the midst of the compressed phalanx, with only as much room between him and his victims as the fear of those immediately around could procure by pressing outwards. The immense migratory swarms of these animals, which occasionally pour themselves like a deluge from the Bushman territory upon the northern frontiers of the Cape colony, have never been more vividly described than by Captain Stockenstrom, who was a native of the country. 'It is,' he says, 'scarcely possible for a person on passing over some of the extensive tracts of the interior, and admiring that elegant antelope the springbok, thinly scattered over the plains, and bounding in playful innocence, to figure to himself that these ornaments of the desert can often become as destructive as the locusts themselves. The incredible numbers which sometimes pour in from the north, during protracted droughts, distress the farmer inconceivably. Any attempt at numerical computation would be vain; and by trying to come near the truth, the writer would subject himself, in the eyes of those who have no knowledge of the country, to a suspicion that he was availing himself of a traveller's assumed privilege.'" The stag, &c., leave the Alpine regions at the approach of winter, and descend to the plains until the spring, when they again ascend the heights. The great bat of England, towards winter, migrates to Italy, and there remains until spring in a torpid state. The musk ox (*Bos Moscatus*) already figured in p. 66., which inhabits the north Georgian islands in the summer, is a periodical wanderer also. Captain Parry's account states, that the musk oxen arrived in Melville Island in the middle of May, crossing the ice from the southward, and that they quitted it on their return towards the end of September. The reindeer migrates from his native countries towards the polar regions at the latter end of May or early in June, where he remains until late in September, when the supplies in vegetation failing him, he returns. Such is the effect of the sun's rays in forcing a hasty vegetation in these countries, that although these animals are emaciated when they arrive, they soon become fat and in excellent condition. The Esquimaux are so well aware of this, that they hardly disturb them at first, but pursue them incessantly after they have been with them a few weeks.

SUBSECT. 5. *The Hybernation of Quadrupeds.*

763. *The torpidity, or hybernation, of animals* is in some cases complete, while in others it is partial; and the subject is altogether so curious, that it has long occupied the attention of the physiologist, and the professor of natural history. Dr. Fleming, in his *Philosophy of Zoology*, has thought it worthy of a longer notice than his usual limits allow him; and to his able exposition of the subject we would refer for a fuller account than we can venture to lay before our readers. "All animals," says this philosophic writer, "we know require stated intervals of repose to recruit exhausted nature, and prepare for further exertion, a condition which is termed sleep. But there are a few animals which, besides this daily repose, appear to require annually some months of continued inactivity to enable them to undergo the common fatigues of life during the remaining part of the year. These animals exhibit, therefore, two kinds of sleep, — that which they enjoy daily, during the season of their activity, and that which they experience during their brumal retirement. This last kind of sleep is generally denominated *torpidity*, and is also known by the term *hybernation*, as it is evidently designed to afford protection against the cold of winter."

764. *The subjects of complete torpidity among the Feræ are the bat, the hedgehog, and the tanric.* The bat sleeps with its head downwards, suspended by its hinder claws from a bough, or some projection in the roofing of a cavern or old building; and, consequently, during the whole period of its hybernation, it is seen in the same pendent position (*fig.* 128.). The torpid hedgehog, on the contrary, is found rolled into a perfect ball, buried among the moss and roots in hedgerows. Among the *Glires*, or gnawers, the subjects of hybernation are the marmot, hamster, and dormouse. The agencies which promote torpidity are various; diminished temperature is probably the most active, for no sooner does the thermometer indicate a moderate reduction of heat only, than some animals exhibit lethargic symptoms, while others require actual cold to drive them into winter quarters. Torpidity is not confined to animals of the cold regions of the earth only. In Egypt the *Dipus Sagitta* is torpid during the winter month, although the cold is never intense there. In India and Madagascar, countries noted for the comparative warmth of their winters, some of the native animals become torpid: the tanric even continues in that state nearly six months. All however make some preparation for their brumal retreat, more or less complete, according to their necessities, as regards defence from interruption, intensity of cold, moisture, &c.

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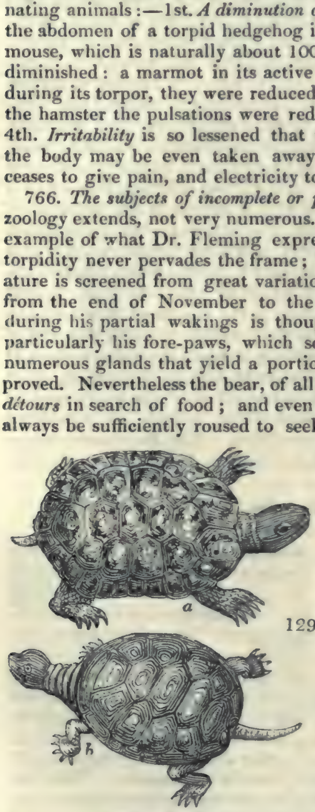
TORPID BAT.

765. *Scarcity of food is also another of the great exciting causes of torpidity:* thus insectivorous quadrupeds retire with the insects, and the herbivorous when vegetation begins to be scanty, or when the earth becomes too hard to draw out the roots. In many, perhaps in most cases, both these causes operate, but in the hybernating dipus of Egypt, and that of the tanric of India, a scarcity of some essential edible is probably the predisposing agent, for the temperature alone cannot be supposed, in either Egypt or India, to be sufficiently decreased at any season to produce torpor; nor can these luxuriant countries be ever without sufficient vegetation of some kind. Certain conditions of the body also are always present in hybernating animals:—1st. *A diminution of temperature* is observable; a thermometer inserted into the abdomen of a torpid hedgehog indicated 30° only: the temperature of an active dormouse, which is naturally about 100°, was reduced by torpidity to 95°. 2d. *Respiration* is diminished: a marmot in its active state exhibited five hundred respirations in a minute; during its torpor, they were reduced to fourteen. 3d. *Circulation* is greatly retarded, as in the hamster the pulsations were reduced from one hundred and fifty to fifteen in a minute. 4th. *Irritability* is so lessened that the ordinary sources of irritation cease to act; parts of the body may be even taken away without exciting sensibility; the application of acids ceases to give pain, and electricity to produce contractions, when the torpor is complete.

766. *The subjects of incomplete or partial torpidity* are, as far as our present knowledge of zoology extends, not very numerous. The common bear (*Ursus Arctos*), is the most familiar example of what Dr. Fleming expressively calls *quiescence.* In these quadrupeds, complete torpidity never pervades the frame; but they all seek a sheltered situation where the temperature is screened from great variation. The bear, it appears, lines his den with moss; and from the end of November to the beginning of March he slumbers away his time, and during his partial wakings is thought to employ himself in licking the soles of his feet, particularly his fore-paws, which some speculators suppose are purposely furnished with numerous glands that yield a portion of nutriment, but this circumstance is not yet clearly proved. Nevertheless the bear, of all but the most northern countries, makes occasional short *détours* in search of food; and even when *ringed, i. e.* lodged, for the whole winter, he can always be sufficiently roused to seek his own safety. Naturalists assert that this animal unites with its mate before its retirement, and that the female gestates during the period of quiescence, and brings forth her young before she finally leaves her hiding-place. (See *Ringing of the Bear,* in the *Field Sports of Russia, Sweden, and Denmark,* p. 81.) The badger is supposed to pass his winter in a manner very similar to that of the bear, and there is reason to conclude that the water-rat, and probably some few other quadrupeds, do the same. A torpid state is also common to many animals besides quadrupeds. Insects are well known to be in many instances the subjects of it; and reptiles likewise, as might be expected from their lessened temperature and slow circulation, are well known to slumber away the winter months in a species of living death. The frog betakes itself to the bottom of the waters, and tortoises of many kinds hybernate from the commencement of the cold season, until the warmth of spring thaws their almost congealed blood. The varieties of the common tortoise, so well known in Greece, and indeed throughout all the countries surround-



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TORPID TORTOISES.

ing the Mediterranean, may be cited as instances. *Fig.* 129. presents two of them (*a*) *Testudo Græca* Linn., prized for its flesh, its eggs, and its blood, which is sucked by the inhabitants of these countries. It was one of this kind that was known to have been an inhabitant of the gardens of Lambeth nearly one hundred and twenty years. The mud tortoise (*b, T. Lutaria*), common in France, where it is much prized and much used for food, is equally the subject of torpidity.

Subsect. 6. *The Means of Offence and Defence in Quadrupeds.*

767. *The means of offence and defence throughout the whole animal kingdom* are so nicely balanced, that no class can swarm, nor can any be destroyed; such at least is the case as regards each other. The fell destroyer man, by the aid of overpowering intellect, can devise means of offence so infinitely superior in number and nature to the natural defences of animals, that the destruction of many races is totally in his power. The wolf and the bear have been long ago destroyed in Britain; and many other quadrupeds would have shared the same fate, had they not been preserved by protection laws.

768. *Active organs of offence are more common to carnivorous quadrupeds than to the herbivorous.* In the former, the canine or lacerating teeth are evidently designed for offence. It is with these that the canine and feline races first seize their prey; and it is with these the vitals of the animals they seize are torn through. The means used by predatory beasts to get animals within their reach are various: the *Caninæ* hunt down their prey by the powers of their smell and the swiftness of their feet; the feline race are more prone to use stratagem, and lie in ambush to surprise theirs. The animal which has been long pursued by the former, is not able to offer much resistance; that which is seized by the latter is, on the contrary, at the moment of his capture, in the full possession of defensive powers. Added therefore to the offensive nature of the teeth, the *Felinæ* have sharp hooked claws, which are able to retain a firm hold of the victim until it is rendered incapable of resisting further. The horns are also in some cases used offensively, and with terrible effect; but as the wearers of horns are herbivorous animals, we consider them rather as defensive weapons than offensive. Thus it is that so many females are hornless, it being intended that the males should protect them and their young. The horned tribes are also usually gregarious, and can thus act in concert for their mutual defence. Among the means of offence in quadrupeds, are we not warranted in including fascination as one? The cat, and probably all its congeners, possess it certainly, and so terrify lesser animals as to make them fall an easy prey; indeed, it is thus only that the stoat, weasel, &c., can so readily catch rabbits, hares, &c.

769. *Organs of defence among quadrupeds are more varied than those of offence.* The horse is sought after by most of the *Carnivora* with eagerness; for there is not one amongst them which is not fond of horse-flesh. Nature has, for this reason, gifted him with vast powers of flight, both as regards its rapidity and endurance. It is, therefore, usually more by stratagem that he is taken by any single animal than by pursuit. A troop of wild horses, when feeding in the open plains, however, will not, it is said, always attempt to fly when they find themselves watched by predatory beasts; but, on the contrary, they form a circle with their heads inclined inwards. Within this circle are inclosed the foals and their mothers, and in this order they wait the attack, and usually successfully repel it by the unerring blow they are able to inflict with their hard horny heels. And how instinctively wise is the action of the horse in this instance; and how equally so is the opposite action in the troops of wild cattle, who, when surprised, always face their enemy; aware, that in the power of their neck, and the sharpness of their horns, lies their safety.

770. *The lesser quadrupeds have various additional means of defence.* Artifice is a very common one. The retroverted hair, standing on end on the back of most quadrupeds, is used as a defensive stratagem to impress on their enemies an erroneous idea of their size and powers; thus the cat, who fears an attack from a dog, first sets every hair on end, and then elevates her body on tiptoe, until she is nearly the height and size of the terrier who watches her. If a larger dog pursues a lesser one, how frequently do we observe the lesser dog to throw himself on his back, thus artfully imploring his mercy. It is also but seldom that this appeal from the weak to the strong does not prove a sufficient protection. The voice of animals is a means of defence made use of to claim assistance from danger. How readily does the sow distinguish the cry of her frightened pig, from all the gruntings and and noises of the rest, and how soon does she fly to its assistance.

771. *Adaptation of colour to the objects which surround them* may also be a providential protection to quadrupeds. What would have become of the ermine or the hare, had either been forced to retain its natural colours in regions entirely snow-clad? The changes also which take place in their tintings are exactly in unison with that which occurs in the surface of the country around them. How difficult is it to discover a hare in a fallow field; and it is but little less so in the meadow.

772. *The mephitic or stinking quadrupeds* are furnished with defensive organs of a very peculiar kind; but they are such as prove strongly repellent to other animals of an adverse nature. The weasel tribes are familiar instances, being one and all powerfully mephitic: "to stink like a polecat" is a simile as old as Aristotle. The offensive matter effused is contained in two cells, sacs, or pouches, either around the anus, or in its neighbourhood, and is pressed out at the will of the animal by appropriate muscles. The extreme difference in the odours of this secreted matter is a full confirmation of its defensive quality; and, without doubt, in every instance it is rendered particularly disgusting to the more immediate enemies of a certain class of animals. The smell of the fox is well known to be different to that of the polecat; while that of the civet differs from both. The badger is mephitic, and his fetid exudation also, like the others, arises from anal glands, which pour it out from a transverse fissure, between the anus and tail. When assailed, he is known to urine, during which he presses this *stink bag*, the contents of which, becoming mixed with the urine, he contrives to throw, by means of his tail, into the faces of his pursuers. It is for this reason that the best bred terriers avoid the hind-quarters of the badger; and, for the same reason, predaceous animals of every description are observed to carefully select the neck and fore-part of all the mephitic tribes when they attack them. The approval of the odour of musk is not universal; for, pleasing as it is to many persons, it is hateful to others; and was given, without doubt, to prove obnoxious to particular animals. These peculiar secretions, which are intended to disgust powerful quadrupeds of a different kind, are likewise used to attract those of their own species, as we are warranted in concluding from the well known fact that, during the sexual ardour of both male and female, a mephitic odour is always present. Sheep, and several other of the cloven-footed tribes, have glandular cavities, communicating with excretory ducts, between the claws or toes. The matter furnished by these is in all probability given as defences against the attacks of some parasitic animal.

773. *Some of the lesser quadrupeds burrow for safety*, others climb trees, and some are gifted with the means of a partial flight to secure their escape; of which kind is the membranous expansion which passes from one extremity to the other in some squirrels. The protection of the young excites the utmost vigilance throughout the brute race. The bat carries them at her breasts; the monkey bounds from bough to bough with her younglings hanging to her neck; others, again, receive them for security into a false belly, or capacious membranous pouch, as the kangaroo (*fig.* 28. p. 43.). The young, which are born entirely indigent, are hidden with vast care; their numbers precluding the possibility of taking them abroad. The strong bristly hair of the anteaters, the scales of the pangolin, the spines of the hedgehog and porcupine, are admirably adapted to the defence of these quadrupeds. We cannot look at the scales of the armadillo (*fig.* 130.), without being struck with wonder at the contrivance of nature to shield it; nor without admiration at that lesson which taught the hedgehog, whose powers of flight cannot save him, to roll himself up by means of a particular muscular apparatus, so as to conceal and protect the head, feet, and under parts of the body, which parts alone are vulnerable to its common enemies.

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ARMADILLO.

Sect. IV. *The Longevity, Decay, and Death of Quadrupeds.*

774. *Each species of quadrupeds appears destined to a particular period of existence*, although accident or disease may shorten it in some instances, and a particular organisation may prolong it in others to an unusual period: thus the horse has been known to live to sixty-two years (see *Veterinary Outlines*, 4th ed. p. 39.), and the dog to twenty-four years. (*Canine Pathology*, 3d ed. p. 66.). There is nothing in the outward form, nor any structural peculiarity with which we are acquainted, that marks either longevity or early decay as inherent qualities; and yet quadrupeds differ much, and birds still more, from each other in these respects.

775. *Disease is by far less common among wild quadrupeds than among those which are domesticated;* from which, however, the former are not entirely exempt. Epidemical disease destroys whole herds of the wild reindeer in some seasons. Rabbits and hares also, but particularly the former, are carried off in great numbers by tabid affections, which infest warrens under some circumstances, especially long continued rains. Foxes are now and then found dead in covers, having been evidently destroyed by a virulent mange; and to find them, when hunting, thus affected, is still more common. Epizootic diseases attack our horned cattle, and the *rot* is fatal to our sheep; but it is not improbable that our cultivation of their

various breeds, by somewhat interfering with the original constitution of the animal frame, has rendered them more susceptible of disease. This we are warranted to believe, from observing the vast difference in the number and nature of the diseases which affect the horse, and those which occur in the ass.

776. *Decay steals on the adult frame by slow but perceptible degrees;* its inroads are marked by the external fat of the body becoming absorbed from the exterior parts, to be spread over those within: it is thus an aged animal appears more angular and bony than a young one. As old age advances, the eyes also lose their lustre, and their convexity lessens. Fatigue follows even moderate exertion; more sleep is required than heretofore; the limbs appear rigid; and the lips, but more particularly the posterior one, become pendulous, as we observe it in the old horse and old hound. The fat around the rectum is seen to be absorbed also, and the sphincter thick, horny, and protruded. The teeth, likewise, present various marks of decay: the incisors or nippers of the horse protrude horizontally, those of the dog are either broken out entirely, or are worn to stumps; the tushes also of both share the same fate. The molars of the *Caninæ* and *Felinæ* do not suffer so much; but in the domesticated horse the grinders always exhibit considerable marks of deterioration. The bones of aged quadrupeds, like our own, become brittle, from earthy matter deposited in them; and, from the absorption of the medulla, the cartilages ossify and the joints crack on motion: if life is long protracted, the perceptions generally weaken; and we have seen dogs almost senseless. At length food is taken sparingly; the animal moves but little; the pulse is at first quick in proportion as it is weak, and when it becomes slow as well as weak, death soon closes the scene: but, fortunately for animals, it is usually without dread, pain, or commotion.

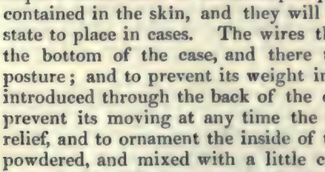
Subsect. 1. *Taxidermy, or the Method of Preserving the Bodies of Beasts after Death.*

777. *Taxidermy, or the art of preserving the bodies of animals after death*, is both interesting and useful. The sportsman by its means perpetuates the remembrance of some rare capture in the field, or he marks some singular deviation in the form, size, or colour, of his game. To merely preserve the skin of a beast, application is usually made to a currier, and by his means the hide, with its hair, may be effectually dressed.

778. "*To set up*" *the body of a quadruped*, a regular artist is usually called in; but when it is attempted by an amateur, the following instructions from Mr. Graves's *Naturalist's Companion* may assist: — "Begin by skinning the body, which should not be commenced till some hours after the subject is dead, as in that time the blood will have coagulated, and there will be less danger of soiling the skin. The animal should be opened down the middle of the belly, and the skin stripped back to the knee and elbow joints, which should be left with the skin, care being taken to remove all the flesh and integuments from the bones; the skin may then be drawn over the neck and head; the body is to be separated from the head at the first joint; the surface of the skull must then be thoroughly cleared of all flesh; the eyes, brain, tongue, and flesh in the interior of the mouth, must be taken away, and freed of all loose skin or integuments that may be attached. When this is effected, the skin may be returned to its proper position, and the cheeks must be filled out with cotton, or other soft substance, mixed with a considerable quantity of antiseptic powder, composed of one-third of white oxide of arsenic, and two-thirds of powdered burnt alum: this powder should be rubbed in the inside of the mouth and all the cavities of the head; and the eyes, ears, and nostrils, should be filled with pledgets of cotton, dipped first in a strong solution of corrosive sublimate or arsenic, and a quantity of the powder strewed over each cavity. The inside of the skin and the leg bones, when quite clean from all loose skin, &c., should be rubbed well with the powder: this rubbing should be repeated occasionally, until the skin acquires a considerable degree of dryness. If the animal be large, the leg bones cannot be conveniently retained attached to the skin; but in all cases where it is practicable, considerable advantage will accrue from their preservation. This last remark applies also to the skulls of the larger quadrupeds, which should in all possible instances be preserved, whether attached to the skin or not. Of such animals as possess soft or spongy feet, the soles may be opened, and all the fat and muscular parts removed, after which the powder should be applied plentifully; and before the skin becomes hard or dry, the cavities of the feet should be filled with cotton, as directed for the head, and the incisions sewed neatly up." To *set up* the body of a small quadruped, he directs that "A false body be formed, which may be done with a piece of iron wire, of a substance proportioned to the size of the animal, which should be of sufficient length to pass through the skull (if retained), and to protrude a little, and also to extend rather beyond the tail: the ends of the wire should be filed to sharp points, to prevent their tearing the skin; and it should have previously been thoroughly heated in the fire, to render it quite flexible; this is to be wrapped round with tow or fine rope-yarn, till it is sufficiently large to fill out the skin. Lateral pieces of wire should be introduced through the soles of the feet, and, when practicable, through the leg bones, and attached to the principal wire running through the body. Every part of the skin should be filled out to its full extent; and some of the powder should, from

time to time, be introduced with the stuffing. The leg-wires must be sufficiently long to pass through the soles of the feet, and through a piece of wood capable of supporting the animal; to which it may be fixed, as it can then more easily be dried. Previously to the skin being stuffed, if a dried one, it will be necessary to wrap it in damp cloths for twenty-four hours, or even longer, according to the size and substance of the skin. When the skin is filled out to its extent, it is to be carefully sewed up with strong double silk; the needle should be a curved triangular one, such as is used by surgeons; the fur may then be smoothed over the seam, which will hardly be perceptible. The animal should be placed in as easy and natural a position as possible, at the same time recollecting that natural effect ought not to give place to elegance of form. Before the skin is quite dried, the eyes should be inserted; and to enable the operator to represent the animal with eyes of their natural colour, it is desirable to have as correct a representation of them as possible. Glass eyes, of all sizes and tints, are to be procured at the glass bead-makers in London; they should have a piece of wire attached to them, by means of which they may be securely fastened; and to give them a natural appearance, they should be somewhat larger than the natural eye, and the eyelids must be carefully brought forward, so as completely to include the glass balls, which will reduce them in appearance to the natural size. The next operation is to dry the stuffed skin, which may be best done in a shady room, into which the air is freely admitted. In a week, or more, according to the bulk of the subject and the state of the atmosphere, the skin will be dry: but to dislodge any remains of moisture, it may be brought within the influence of a fire, but by no means close, after which it should be placed in a glass case, with the seams and joints close pasted up; and, lest any insects should be attached to the skin, it will be better that the case be baked in the manner directed. The skins of animals that are in a recent state should be treated in all respects as the foregoing, excepting that the skins should not be filled out to the full extent, as in drying the skin is liable to shrink. Fresh skins will also require much more of the antiseptic powder to be used when stuffing, as it absorbs the grease contained in the skin, and they will require longer time in drying before they are in a fit state to place in cases. The wires that pass through the legs should be brought through the bottom of the case, and there turned, by which the skin will be kept in an erect posture; and to prevent its weight inclining the animal forwards, a piece of wire may be introduced through the back of the case, and attached to the body, which will effectually prevent its moving at any time the case may require to be taken down. As a pleasing relief, and to ornament the inside of the bottom of the case, a quantity of dried moss, finely powdered, and mixed with a little coarse sand, may be sifted over it, first moistening the ground with thin carpenter's glue; the ground may be further enlivened by introducing sprigs of moss or dried grasses."

779. *To make a skeleton of any remarkable quadruped of a small size*, the following method may be employed:—Put the subject into a box, of proper size, in which holes are bored on all sides, and then bury it in an ant-hill, when the ants will enter numerously at the holes, and eat away all the fleshy parts, leaving only the bones and connecting ligaments. The bony mass may be afterwards macerated in clean water for a day or two, to extract the bloody matter, and to cleanse them from any dirt they may have acquired, then whitened by lime or alum-water, and dried in frames, or otherwise, as may be most convenient. In country places I have sometimes employed wasps for this purpose, placing the subject near one of the nests, or in any empty sugar cask, where they resort in great plenty; they perform the dissection with much greater expedition, and equally as well as the ants. They have been seen to clean the skeleton of a mouse in two or three hours, when the ants would require a week. It may be observed, that anointing the animals with honey, after flaying them, encourages these dissectors to begin their work. To prepare a skeleton of a larger beast, the body, after being skinned, must have all the fleshy parts carefully dissected away; the skull, of course, must have the brains taken out of it. When the beast to be preserved is larger than a hare, the bones must be articulated together by means of wires; and if as large as a dog, wolf, &c., must be upheld by iron supports on a framing of a suitable length, as seen in (*fig.* 131.); but for small beasts, the natural connections of the bones, when well dried and hardened, will be sufficient. To preserve the animal in any desired position, stays and cordings are required, until the whole be sufficiently stiffened to sustain itself. For more detailed instructions on this interesting art, we would strongly recommend a reference to the fourth edition of *Taxidermy*, written, we believe, by the celebrated Mrs. Bowdich. (See also this subject more fully treated in our *Ornithological Detail*, as is the *Preservation of Fishes* in our angling department.) Alkalies are useful preservaties when used on beasts, and are recommended for the purpose by Abbé Manesse; but we agree with Mrs. Bowdich that, when applied to the plumage of birds, they prove injurious by the absorption of moisture in damp weather.



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SKELETON OF THE WOLF.

Sect. V. *The Economical Uses of Beasts and Birds.*

780. *To disjoin these uses of quadrupeds from those which we derive from birds*, merely to preserve uniformity of detail, would be attended with inconvenience. It would likewise occasion repetitions which our limits can ill afford. The economical uses of fishes, however, with whatever concerns them, will occupy a distinct niche, for reasons already stated, *i. e.* that there are many sportsmen who pursue fishing and whatever relates to it with ardour, who never waste a thought on any other of the sports we treat of. Nevertheless, the importance of birds in the arts may be again glanced at.

781. *The value of beasts and birds to the votary of the chase*, we are under no necessity of pressing. What are the horse, the dog, the stag, the fox, the hare, and all the winged game to the English sportsman? What the elephant, the camel, the lion, the tiger, the boar, the deer tribes in all their varieties, with the ostrich, bustard, turkey, peacock, snipe, &c., &c., to the natives of Africa and Asia? And are not the bison, the elk, the reindeer, the bear, and wolf, with the innumerable species of waterfowl which sail on the vast waters of the New World, equally so both to the uncultivated Indian and to the cultivated modern American? The solid benefits reaped from them are likewise as varied as they are important.

782. *Food is supplied by beasts and birds.* Man eats of all, and by them he at once satisfies his physical wants and his instinctive desires; for we hold it as a fixed principle, that man is by nature predaceous; and were all hope of other economical benefits to be derived from the pursuit of animals to be wholly denied him, he would still remain irresistibly impelled to follow them. When, therefore, to these instinctive desires are added the benefits of food, clothing, &c., &c., can we wonder that the chase engrosses so much of the attention of mankind, from the prince to the peasant, and from the African Hottentot to the cultivated European? Our notions of food are apt to be confined to the edibles in common use among ourselves; and thus the morbid sympathy of some ground their arguments on the supposition that many animals are destroyed which can yield no benefit to man whatever. Man, as the lord of the kingdom of nature, is especially gifted with a power of residing under a wider geographical distribution than any other animal. This he owes to a capability, not only of digesting, but of extracting, wholesome nutriment from a vast variety of substances, on which, while some eat with avidity, others look with horror. In Mexico animal matter is the principal food of the natives, whose appearance (*fig.* 132.) is as savage as their mode of life. There is no beast, bird, or reptile, that they do not greedily devour. The puffin, and the whole breed of piscivorous birds, are among their most delicate morsels; even the putrid carcasses of animals, when washed on shore, are buried and dug up again, to be devoured as occasion requires; while serpents and lizards form an accustomed article of food with other tribes. "The Hottentots of North and South Africa are even more voracious, and swallow with brutal avidity the most disgusting, and, to us, indigestible substances. The Calmucks devour putrid and stinking matters, the after-birth of animals, marmots, mice, otters, birds of prey, foxes, and wolves, but not dogs or weasels. The Jackuts eat carnivorous animals. The Tungooses and Ostiaks eat insects of every description. The Samoides eat putrid relics of horses, cats, dogs, whales, &c.; and the Kamtchatkans indigestible fungi. The Tchuktchis, and the inhabitants of the Fox Islands, besides the most disgusting insects, eat raw whale blubber; they also, it is said, lick themselves, or one another, dry after washing with urine. The Tonquinese eat tigers, lions, snakes, bats, elephants, stinking and uncleaned fish; the Chinese, dead dogs, horses, and rats; the Arracanese, Siamese, and Formosans, besides such things, devour entrails, with all their contents. The inhabitants of the Bashee islands in the Indian Ocean, who are in other respects cleanly, consider the contents of a goat's stomach as a great luxury. Crocodiles, eagles, ostriches, hippopotami, serpents, raw and putrid buffaloes, and elephants, uncleaned entrails, toads, rats, and worms, the most stinking carcasses, chalk, and earth, are eaten by the negroes." (*Rees's Cyclopædia*, art. Man.)

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MAN OF NOOTKA SOUND. WOMAN OF NOOTKA SOUND.

783. *Quadrupeds and birds*, in almost all their varieties, form also the food of more cultivated tribes. Bear hams are a delicacy with many; but it is not so generally known that our own sailors, who visit the Arctic regions, eat every part of the white bear likewise (the liver excepted, from its deleterious qualities), although this beast is entirely piscivorous. The horse is eaten in many countries not wholly savage; and from our own experience, gained from tasting a cooked steak which had been taken from a young healthy horse killed in battle, we can aver that it is not inferior in texture or flavour to bull-beef. The dog is the only animal eaten by the Brahmins; while the hare, so much prized by us, is abhorred by some nations. Among the polished inhabitants of most countries, those beasts and birds we denominate game are eaten with avidity; and although the keen sportsman often affects to despise the taste of whatever he kills, yet there are few who do not in their hearts regard the grouse, the pheasant, partridge, woodcock, snipe, &c., among the most *recherché* of luxuries.

784. *The smaller birds are eaten with avidity by many.* Our own markets are supplied with larks, fieldfares, &c., &c.; while sparrows, and indeed all the passerines, are grilled, or made pies and puddings of, by scores at a time, to the delight of the epicure who is wise enough to eat them. In France the *Turdus*, or thrush species, of every kind, is esteemed a great delicacy; and in Spain there is no small bird whatever but "goes to pot." All sorts are either snared or shot; and being then strung in festoons, are in this way carried to market. Both in France and Spain swallows also are eaten. Professor Herman himself praises the excellent taste of the martins, which, he observes, may be compared to the ortalon for delicacy.

785. *Both quadrupeds and birds supply us with useful articles of clothing also.* Dr. Fleming observes that, "The use of skins as articles of dress is nearly coeval with our race. (We have ourselves also particularly alluded to the same in our second page.) With the progress of civilisation, the fur itself became used, and the feathers also; both of which, after having been subjected to a variety of tedious, and frequently complicated, processes, are now worked into useful and ornamental articles. Besides the hair of quadrupeds, and the feathers of birds, used as clothing, many other products of the animal kingdom, as bone, shells, pearls, and corals, are employed as ornaments of dress in all countries, however different in their degree of civilisation." The benefits we derive from almost every part of the body of both birds and beasts in the arts, will be acknowledged when we reflect how much the articles bone, leather, fat, horn, hair, feathers, &c., &c., enter into the manufacture of our furniture of every kind; while many of our most highly prized ornaments are wholly derived from these sources. Animals are likewise of extreme importance to us in becoming the scavingers of nature. The dogs of the eastern towns rid the streets and suburbs of such an accumulation of offal, as, if suffered to remain, would prove pestilential. There is little doubt it is to further this end that dogs, and some other animals also, have an instinctive appetite for offal of the most offensive descriptions. It is a wise ordination of nature, likewise, that they can assimilate flesh in a state of decay into wholesome nutriment. This power is as important to themselves as beneficial to us, and without it they probably could not exist in a wild state; for it may be supposed they are not able very often to conquer a fresh animal of any considerable dimensions. But when they can treasure up such a store, and have recourse to it during every stage of its decomposition, hunger is prorogued for weeks even. It is not only, therefore, to hide their food that they bury it, but they may possibly be instinctively led to it by the antiseptic qualities of new broken-up earth, which greatly protracts the total decomposition of what is buried under it. The condor, and other of the larger predaceous birds, are equally gifted, and have an equal attachment to putrid carcasses, by which they render essential services to the countries they inhabit. The individual uses of birds in the arts and in commercial enterprise, we repeat, will be again cursorily noticed in our *Ornithological Detail* appended to *Hawking*.

CHAP. V.

The Instinctive and Rational Endowments of Brute Animals.

786. *We will not impeach our own judgment, nor that of our readers*, so much as to suppose that either of us can have a moment's doubt on the subject of the rationality of brutes. The existence of a reasoning power in them is indeed now very generally acknowledged by philosophers; and it is the extent only of these powers, on which a difference of opinion still exists. In what follows, we will suppose it to be allowed that the manifestations of instinct and those of reason are essentially distinct. Materialism, in its obnoxious sense, will have nothing to do with our method of pursuing the inquiry, even as far as it may be supposed to be extended to man as the head of the animal kingdom. We conceive it to be sufficiently proved, that instinct is the most unerring of the mental powers given to either man or beast, and also the most independent of any visible structural peculiarity: yet of all the instinctive dreads that adhere to man, none is so great as that of total annihilation; by which we do not mean the fear of death, or a shrinking from pain, but a horror of absolutely sinking into *nothing*. We cannot, therefore, wonder that it is hence assumed, that this instinctive dread, felt by man alone, would not have been given to him, were it not as a seal of certainty that his mental powers were to survive his corporeal existence; and we incline for the same reason to infer *the total annihilation of the brute when the body perishes;* for he has no instinctive fears of annihilation, nor any hope of living beyond the sun or moon, or in the company of his forefathers in some fancied elysium.

SECT. I. *The Instinctive Principle in Animals.*

787. "*Instinct*," observes Baron Cuvier, "is not ascertained to be characterised by any visible mark in the conformation of the animal: but intellect, as far at least as we can observe, bears a constant proportion to the relative magnitude of the brain, and particularly of its two hemispheres." Thus it would seem, according to Cuvier, that man, who is placed at the head of the animal chain, and presents in point of intellectual attainments so much superiority, does it simply because the proportions between his cerebral and nervous masses are greater than those of any other class of animals whatever. (See *Anatomy of the Brain*, p. 183.) We are by no means prepared altogether to deny the baron's premises; but we must consider his deductions somewhat of the postulate kind.

788. *Instinct supplies the place of reason in impelling the brute appetites;* thus man, although he is hereafter to be gifted with all the attributes of reason, at his birth is instinctive only; and he remains so, until the rational principle by slow advances irradiates the mind, after which the objects taken cognisance of by the senses begin to excite attention and reflection; comparison and deduction now follow, and continued experience helps to correct his early errors. As the gifts of nature are bestowed with much equality, so it will be found that, as reason attains her greatest height in the human subject, so the instincts of man lessen

in an equal degree; and those appetites which were first urged by instinct, are now controlled by reason.

789. *Instinct in brutes* may therefore be considered as an irresistible stimulus within them to perform certain acts, not preconcerted, and entirely independent of deliberation or experience; such acts being especially directed to their own self-preservation, and to the continuance of their species. Under this view, it was necessary that instinct should develop itself completely the moment it is wanted, which must be immediately the brute animal enters the world; and such we find to be the case. The young chick, the instant that it is disencumbered of its shell, seeks its food, pecks it up with agility, and promptly separates it from extraneous matter. The indigent and blind puppy, immediately it enters the world, searches out one of the teats of the mother, and adapts the surfaces of its little mouth to exhaust the gland more effectively than all the mechanical skill of the philosopher could do.

790. *The operations of instinct being directed to such great ends*, it was necessarily given perfect from the beginning; it therefore required no extension, and it has received none. The swallow built its nest of the same materials, and after the same fashion, two thousand years ago as it does now; the sexes united in the great work of propagation at that time as at the present; the same dexterity and anxiety in searching out suitable food for the offspring, and equal care in protecting it or them from enemies, were manifested then as now; and when the young frame was fully developed, the same instinct which found it the means of shifting for itself, probably prompted the parents to abandon it to its own resources: we say probably, because we are not sure that some rationality may not be detected here.

791. *Pure instinctive manifestations* have, however, by some been altogether denied, both in man and beast; all such operations being, according to their theory, *principles* inherent in the minds of both. However favourable this may be to the subject we would advocate, that is, to *the rationality of brutes*, yet we consider it as an argument more absurd even than that which attributes all the varied phenomena exhibited in the actions of brutes to instinctive workings alone. Mr. Griffith thus ably illustrates the existence of unmixed instinct:—"It is a curious mathematical problem, at what precise angle the three planes which compose the bottom of a cell ought to meet, in order to make the greatest possible saving of material and labour. This is one of those problems belonging to the higher part of mathematics, which are called problems of *maxima* and *minima*. Maclaurin resolved it by a fluxionary calculation, which is to be found in the *Transactions of the Royal Society*, and determined precisely the angle required. Upon the most exact mensuration which the subject could admit of, he found that it is the very angle in which the three planes in the bottom of the cell of a honey-comb actually meet. 'Shall we ask,' says Dr. Reid, 'who taught the bees the property of solids, and to resolve problems of *maxima* and *minima?* It need not be replied, that they are as ignorant of these properties as the solids themselves, and as incapable of a problem as any inanimate body. The action in question is by a superior power, working through the instrumentality of the unconscious bee.' Mr. Addison on the same subject inquires, 'What can we call the principle which directs every different kind of bird to observe a particular plan in the structure of its nest, and directs all the same species to work after the same model? It cannot be imitation; for, though you hatch a crow under a hen, and never let it see any of the works of its own kind, the nest it makes shall be the same, to the laying of a stick, with all the other nests of the same species. It cannot be reason, for were animals endued with it to as great a degree as man, their buildings would be as different as ours, according to the different conveniences that they would propose to themselves.'" (*Animal Kingdom*, vol. iii. p. 366.)

792. *In the lower orders of animals the manifestations of instinct*, wholly unmixed with reason, are numerous in the extreme, and as clearly defined as they are numerous. "Caterpillars," it is affirmed, and we ourselves have observed the same, "when they are shaken off a tree in every direction, they instantly turn round towards the trunk and climb up, though they had never been on the surface of the ground. This is a striking instance of instinct; it is on the tree, and not upon the ground, the caterpillar finds its food; consequently, if it did not turn and climb up the trunk, it would inevitably perish. The bee and the beaver are both endowed with an instinct which has the appearance of foresight: they build magazines, and fill them with provisions; but the foresight is not theirs, for neither bees nor beavers know any thing of futurity. The solitary wasp digs holes in the sand, in each of which she deposits an egg: though she certainly knows not that an animal is to proceed from that egg, and still less, if possible, that this animal must be nourished equally with other animals, she collects a few small green worms, which she rolls up in a circular form, and fixes in the hole in such a manner that they cannot move; it follows, that when the wasp-worm is hatched, it finds itself amply stored with food destined for its support. The green worms are devoured in succession; and the number deposited is exactly proportioned to the time necessary for the growth and transformation of the wasp-worm into a fly, when it issues from the hole, and is capable of procuring its own nourishment. This instinct of the parent wasp is the more remarkable, that she feeds not upon flesh herself." (*London Encyclopædia*, art. Instinct.)

Sect. II. *The Rational Principle in Animals.*

793. *The reasoning powers of brute animals* are much less frequently questioned now than they used to be. It is only remarkable that any original thinker, or any accurate observer of nature, should ever for a moment have doubted the existence of a faculty analogous to reason in them; but, as Dr. Gleig very justly observes, "there are not many original thinkers." The greatest part even of those who are called philosophers, implicitly adopt

the opinions of certain masters, whose authority they deem sufficient to supply the place of close inquiry and deep research on their own parts; nor is it too much to conclude that such only think by proxy. We have authorities of the very first eminence, who were favourers of the rational principle in brutes. Locke remarks, that "it is as evident to him that brutes reason as that they have sense." Dr. Thomas Brown, who has been pronounced one of our most profound writers on intellectual philosophy, also considers the existence of reasoning faculties in these animals to be as unquestionable as their instincts. Cuvier, we have seen, acknowledges it fully. Dr. Fleming has also illustrated this interesting subject, by entering on an elaborate inquiry into the intellectual powers of animals generally, from the highest to the lowest orders. In fact, were we to quote only the names of those who have ably advocated the rationality of brutes, we should swell our pages beyond any reasonable limits.

794. *The evidences of reason in the brute mind,* in our opinion, are gathered from all such actions performed by them as are unconnected with either of the great instinctive principles of personal preservation and multiplication of their species. We are aware of the difficulty of separating many of the rational actions of brutes, which we might bring forward, from some mediate or immediate connection with instinctive impulses; notwithstanding which, we presume ourselves to be able to bring forward so many proofs of faculties in them, that cannot by any forced construction be considered otherwise than purely intellectual, as fully to establish our premises. We shall purposely avoid any attempt at a metaphysical dissection of the brute mind, even were we equal to it. Our aim is principally directed to the purpose of awakening attention and regard towards these humble dependants; and whenever we are found directing the attention to the extent of their intellectual phenomena, it will be to show as well the amiability as the rationality of the character which most of these mental workings bear.

795. *Fixed attention is seen in the brute mind,* and by our observations of it we are assured that the animal is intent on informing itself therefrom of the dangers to be avoided, or of the benefits to be derived; either of which intentions bepseaks reflection and association. How attentively the cat watches the hole, at which her nose informs her a rat or a mouse has entered, and from which her experience, *i. e.* her intelligence, informs her it must again emerge in search of food (*fig.* 133.). The spider will pass whole days and nights in death-like stillness, but the slightest vibration of one of the many hundred threads which compose her web calls her energies into action, and, in the fullness of hope, she starts out to view the scene; and, it may be observed, that she either retreats or advances, as she sees that her prey is likely to escape or to become firmly entangled. Many animals, when foiled in any scheme of plunder, rest for a while only to amend their purpose; they act anew, and commonly successfully. Watch-birds will let individuals, as a man, &c., approach much nearer to them than to the whole flock; for the watch-bird appears to know that it is a shot at the numbers, and not at the individual, that is the object.

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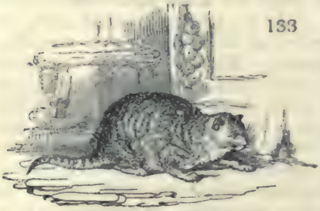

CAT WATCHING A HOLE.

796. *Perceptions are manifested by brutes in an infinity of ways.* Where is the sportsman who does not observe the deference paid by the veterans of a pack of hounds to the challenge of some particular tongue, while the tones of the babblers have passed wholly unregarded. And again, how keen must that perception be, and how fixed the attention in the old hound, that will distinguish the scent of the fox already pursued, and take no notice of the one just crossed on. Frequently this scent has to be traced over the numberless animal effluvia of a sheep-walk, or it has been unthreaded through a tan-yard, and very often through the crowded farm-yard. Attentive to one perception alone, steadily adhering to one determined purpose, the rabbit and the hare are passed unmolested, and even if one of these unfortunates should be *chopped,* it is usually by a newly entered puppy.

797. *Association of ideas is evident in brutes.* The best yard-dogs take not the smallest notice of passers-by, but if any person makes but a momentary stop, the alarm is immediately taken, and an outcry made. There is here evident association and ratiocination on the different probabilities of intention in those who pass by and such as linger on the way. We ourselves purposely visited a house where a large guard-dog had seized on a man in the night, who had made his way into a timber-yard. The dog had pulled the man down without injuring him materially; he then stood astride his body, and attempted nothing further, but at every effort the man made to free himself from his imprisonment, the dog shook his clothes violently, but purposely refrained from biting his flesh; and so he detained him for more than an hour, until a passer-by, who heard one of the scufflings, alarmed the master of the house, who, on getting up, found the dog astride the frightened but unhurt delinquent. Surely intellectuality was manifested here in the highest degree; and the act was as equally remarkable for an amiable forbearance as for determined courage. In the elephant the rational powers are observed to arrive at a very extraordinary degree of

development. This animal understands every look and every word of his keeper; he can be excited to the most wonderful exertions by promises of reward, and of such rewards (that of ardent spirits, for instance, of which this animal is fond) as in a state of nature must have been unknown to him; and, consequently, the hope must be completely *extra instinctive.* Careful as he is of avoiding danger, he may by the same means be urged to considerable enterprise. His wrath is terrible, but his affection is unbounded, and his obedience unconditional. Many striking instances of the rational powers of this vast animal have already been noticed by us in the *Huntings of the East;* but one other, which sets all the workings of mere instinct at defiance, and combines very high intellectual operations ot the mind, we cannot refrain from giving, as related by Mr. Griffith in his *Animal Kingdom of Cuvier*:—" It is the usual part of the performances of an elephant at a public exhibition, to pick up a piece of coin, thrown within his reach for that purpose, with the finger-like appendage at the extremity of the trunk. On one occasion a sixpence was thrown down, which happened to roll a little out of the reach of the animal, not far from the wall: being desired to pick it up, he stretched out his proboscis several times to take it; but it was even yet a little beyond his reach: he then stood motionless for a few seconds, *evidently considering* (we have no hesitation in saying *evidently considering*) *how to act;* he then stretched his proboscis in a straight line as far as he could, a little distance above the coin, and blew with great force against the wall: the angle produced by the opposition of the wall made the current of air act under the coin as he evidently intended and anticipated it would; and it was curious to observe the sixpence travelling by these means towards the animal, till it came within his reach, and he picked it up. This complicated calculation of natural means at his disposal was an intellectual effort beyond what a vast number of human beings would ever have thought of, and would be considered as a lucky thought and a clever expedient, under similar circumstances, in any man whatever. It was an action perfectly *intelligent*, and one that had no relation either to self-preservation or to propagation." (*Animal Kingdom*, vol. iii. p. 374.)

798. *A tenacious memory is a remarkable characteristic of animals.* A dog has been known to recollect a person after several years of total absence. The remembrance of places is never lost. An elephant, after an escape of two years, which had been passed in a wild state, recollected the voice of her driver, and immediately submitted to his commands. An old favourite horse of a resident in the Temple chambers, had been sold as unfit for his service. Some years afterwards a hackney-coach was admitted into the square, when the neighings of the old horse roused his former master from his breakfast; and we do not envy him his feelings, when he beheld the four-footed Nestor with outstretched neck recognising his former owner's domicile. A peregrine falcon, lost in the month of March, recognised its master when retaken in the month of September. Lord Maynard had a dog stolen from him on the Continent, which found his way back to his lordship's residence a year or two afterwards. Cows also have retentive memories.

799. *Dreams are but imperfect recollections of past events*, and combinations of others imaginary or real. But to dream requires cogitation, and dreaming is therefore, in itself, at once a sufficient proof of rationality in the animal in which it occurs. The infant sleeps and fancies itself at the mother's breast, as is evinced by its little lips performing the usual action of sucking. It is also worthy of notice, that this is not seen until some development of perception has been observed in the infant. In the same way puppies also dream: they appear to suck with their lips, and even bark; but, it is to be observed, that they are not seen to do either of these acts until their intellectual faculties begin to bud, which occurs as soon as the sentient organs are developed, *i. e.* when the eyes open. The adult dog continually dreams; he quarrels, he barks as in the pursuit of game, and is evidently fighting his battle o'er again, and following his prey once more in his slumbers.

800. *Experience is a result which springs from memory,* and it produces caution in animals on subjects to which in a state of nature they could never have been subjected. The rat avoids the trap set by the hand of man, and even poison is laid in vain for many of the older and more wily ones. We ourselves set up a human figure in our garden, and mounted it with a mock gun to frighten the sparrows, as other occupations would no longer allow us to continue to shoot among them to prevent their depredations. For three days this scarecrow did its duty; but, to our utter annoyance, on the fourth our eyes were greeted with the sight of four of these robbers, as though in errant mockery, sitting in a row to plume their feathers on the mock gun of our figure (*fig.* 134.); and, in fact, no device would deter them from marauding beyond two, or at most three, days. We knew a cockatoo, which, having picked his bone, called out for a favourite pointer to come for it; if the dog did not arrive, it then vociferated puss, puss, and when the cat appeared, it dropped the bone and chuckled: if neither came, the bird laid the bone in its trough, but would not drop it until one of these favourites had arrived.

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CUNNING OF BIRDS.

Experience had taught the bird that there were other "bone-pickers" in the family besides these selected ones.

801. *Fortitude and determination are exemplified in the mutilated bull-dog*, which continued to run at a bull with his feet cut off. We are not ourselves very partial to this kind of dog, which has sunk his generous qualities in his ferocity; but we think there are few persons who would not give the palm of brutality to the owner of the maimed dog, in preference to the dog himself. Dogs are sufficiently averse from encountering dangerous leaps; but we have heard of another brutal master who allowed the devotion of his dog to so overcome his fears, as to make him leap from a height of two stories to follow him. The poor animal, although he got a broken limb by the fall, yet followed the wretch with delight at having once more reached him. Of what stuff are some minds made?

802. *Animals mark time.* Plovers, curlews, and other birds, which feed on the molusca they find on the sea-shore, are driven, on the coming in of the tide, to seek edibles more inland. In Scotland, in Ireland, and in many of the remoter English counties, we have ourselves observed them retreat several miles inland to the moors, or to moist pasturage, from whence they invariably returned as soon as ever the tide, by receding, began to uncover the beds where these molusca were to be found; and as the ebbing and flowing of the tide altered every day, it is evident that for them to return as soon as their favourite food was to be found, they must mark time, and exhibit a just knowledge of the coming event. We have watched the regularity of their return with great interest, and it always took place as soon as the receding tide had allowed any food to appear. Mr. Southey, in his *Omniana*, relates two instances of dogs who had acquired such a knowledge of time as would enable them to mark the days of the week. He says, "My grandfather had one which trudged two miles every Saturday to cater for himself in the shambles. I know another more extraordinary and well authenticated example: — A dog, which had belonged to an Irishman, and was sold by him in England, would never touch a morsel of food upon *Friday*." Under the article Dog, in the *Library of Entertaining Knowledge*, we also find the following: — "The same faculty of recollecting intervals of time exists, though in a more limited extent, in the horse. We knew a horse (and have witnessed the circumstance), which, being accustomed to be employed once a week on a journey with the newsman of a provincial paper, always stopped at the houses of the several customers, although they were sixty or seventy in number. But further, there were two persons on the route who took one paper between them, and each claimed the privilege of having it first on the alternate Sunday. The horse soon became accustomed to this regulation; although the parties lived two miles distant; he stopped once a fortnight at the door of the half-customer at Thorpe, and once a fortnight at that of the other half-customer at Chertsey, and never did he forget this arrangement, which lasted several years, or stop unnecessarily, when he once thoroughly understood the rule." We have ourselves witnessed the faculty in horses in many instances almost equally notable. Carnivorous animals, which bury their food that they may have recourse to it at a future time, and the weasel tribe which hide eggs, and the squirrel who lays up a store of nuts for the same purpose, all mark a prospective sense of time. Was it ever known that one of them forgot the hiding-place? We believe never.

803. *Cause and effect* are within the range of the intellect of beasts and birds. Dr. Fleming says, "We have seen the hooded crow (*Corvus Cornix*), in Zetland, when feeding on the testaceous molusca, able to break some of the tenderer kinds by means of its bill, aided in some cases by beating them against a stone; but as some of the larger shells, such as the buckie (*Buccinum Undatum*) and the wilk, cannot be broken by such means, it employs another method, by which, in consequence of applying foreign power, it accomplishes its object. Seizing the shell with its claws, it mounts up into the air, and then, loosing its hold, causes the shell to fall among stones (in preference to the sand, the water, or the soil, on the ground), that it may be broken, and give easier access to the contained animal. Should the first attempt fail, a second or third are tried, with this difference, that the crow rises higher in the air, in order to increase the power of the fall, and more effectually remove the barrier to the contained morsel. On such occasions, we have seen a stronger bird remain an apparently inattentive spectator of the process of breaking the shell, but coming to the spot with astonishing keenness, when the efforts of its neighbour had been successful, in order to share in the spoil. Animals in general seem to have a tolerably correct notion of their own powers, as we do not often see them attempting to accomplish objects for which their strength is inadequate. Thus we have seen a pointer, which, if a hare was wounded, would pursue with the utmost keenness, but if otherwise, would witness her escape without exertion. It is the knowledge of the variety of power which sometimes makes a horse run away with a bad rider when he would not even make the attempt with a good one."

804. *The higher orders of animals understand the language of man addressed to them.* The elephant is encouraged to work by the most endearing expressions, and he is humiliated by being told that others do better than himself. It is most common to promise him some recompense for extra labour, and the effects which follow are too common to encourage any scepticism on the subject. We have ourselves, as a matter of ex-

periment, observed to a person present, in our ordinary tone, and without any apparent notice of a terrier lying in the room,—"That we should take a walk by and bye, but we did not intend to take *Pincher* to-day." This was always heard, though, as before observed, it was not addressed to the dog, nor spoken in an elevated voice; yet the effects were the same, for invariably the animal slunk to a remote corner of the room, where he laid himself down disconsolate. If we in a little time afterwards remarked in a similar tone,—"That we had altered our mind, and should take Pincher,"—poor Pincher was instantly at our feet, thanking us for the change. The following anecdote from an ingenious paper on the *Intellectual Faculties of Brute Animals* in the *Magazine of Natural History*, is to the same purpose:—"About the middle of last April I observed a young lamb entangled among briars. It had, seemingly, struggled for liberty until it was quite exhausted. Its mother was present, endeavouring with her head and feet to disentangle it. After having attempted in vain, for a long time, to effect this purpose, she left it, and ran away baying with all her might. We fancied there was something peculiarly doleful in her voice. Thus she proceeded across three large fields, and through four strong hedges, until she came to a flock of sheep. From not having been able to follow her, I could not watch her motions when with them. However, she left them in about five minutes, accompanied by a large ram that had two powerful horns. They returned speedily towards the poor lamb; and as soon as they reached it, the ram immediately set about liberating it, which he did in a few minutes by dragging away the briars with his horns." The anecdote is further illustrated by the following ingenious observations:—"Now, it may be asked, what analogy, even in the remotest degree, had the actions mentioned in the above anecdote to the operations of instinct? Was it an 'involuntary desire' that induced the sheep to endeavour to liberate her young one, when she observed it imprisoned amongst briars? Was she urged by an 'involuntary desire,' or did she act 'without motive or deliberation,' when she ran across three large fields, and surmounted four strong thorn hedges, in search of its relief, which, by these means, she must have known, or at least hoped, that she could obtain? Did the ram act 'without motive or deliberation,' when he returned with her, of course according to her request, and effected what she desired? Or, is it not infinitely more probable, is it not indeed indisputable, that these, and a thousand actions of a similar nature, which are daily observable in our domesticated animals, are 'perfectly free;' are the result of volition; are, in short, neither more nor less than the operations of reason? If we can entertain the contrary conclusion, our *reason* must have gone most wofully astray." (Vol. iv. p. 500.)

805. *The capacity for receiving instruction is great in the higher orders of animals.* The Duke of Devonshire's elephant, kept at Chiswick, had learned to make herself useful in many acts of labour. "At the voice of her keeper she came out of her house, and immediately took up a broom, ready to perform his bidding in sweeping the paths or the grass. She would follow him round the enclosure with a pail or a watering-pot, showing her readiness to take that share of labour which the elephants of the east are so willing to perform. Her reward was a carrot and some water; but previously to satisfying her thirst by an ample draught, she would exhibit her ingenuity in emptying the contents of a soda-water bottle, which was tightly corked. This she effected in a singularly adroit manner. Pressing the small bottle against the ground with her enormous foot, so as to hold it securely at an angle of about forty-five degrees, she gradually twisted out the cork with her trunk, although it was very little above the edge of the neck; then, without altering the position, she turned her trunk round the bottle, so that she might reverse it, and thus empty the water into the extremity of her proboscis. This she accomplished without spilling a drop; and she delivered the empty bottle to her keeper before she attempted to discharge the contents of the trunk into the mouth. She performed another trick which required equal nicety and patience. The keeper, who was accustomed to ride on her neck like the mahouts, or elephant drivers of India, had a large cloth or housing, which he spread over her, when he thus bestrode her in somewhat of oriental state. Upon alighting, which she allowed him to do by kneeling, he desired her to take off the cloth. This she effected by putting the muscles of her loins in action, so that the shrinking of her loose skin gave motion to the cloth, and it gradually wriggled on one side, till it fell by its own weight. The cloth was then, of course, in a heap; but the elephant, spreading it carefully upon the grass with her trunk, folded it up, as a napkin is folded, till it was sufficiently compact for her purpose. She then poised it with her trunk for a few seconds, and by one jerk threw it over her head to the centre of her back, where it remained as steady as if the burden had been adjusted by human hands." (*Menageries*, vol. i. p. 7.) The *Deserter* was acted throughout, some years ago, by dogs trained for the purpose in Germany. Plutarch also has left an account of a dog which he saw at Rome, at the theatre of Marcellus, which performed most extraordinary feats, taking his part in a farce which was played before the emperor Vespasian. Amongst other things he counterfeited himself dead, after having feigned to eat a certain drug, by swallowing a piece of bread: at first he began to tremble and stagger, as if he were astonished; and at length, stretching himself out stiff as if he had been dead, he suffered himself to be drawn and dragged from place to place, as it was his part to do; but afterwards, when he knew it to be time, he began first gently to stir, as if newly awaked out of some profound sleep, and lifting up his head, looked about him after such a manner as astonished all the spectators. There was even a more curious exhibition of this description at Paris in 1817.

806. *The teachable qualities of the dog* are particularly illustrated in that variety used by shepherds and drovers, of which the following, related to us by an eye-witness, is one among many examples. A butcher and drover of Hexham in Northumberland, whose business led him to take large droves of cattle to Alston market, which was many miles from Hexham, was on these excursions accompanied by a dog he possessed. This dog exhibited such extreme adroitness, that at length, to fulfil a bet made, he was intrusted alone with a mixed herd to take to this market, which he did without the smallest mishap. Arrived at the end of his journey, he drove the whole up the yard his master was accustomed to take his cattle

to, and there he delivered them up to the person who usually received them, by significantly barking at his door. What more particularly marks the extraordinary sagacity of this animal is, that the tract over which he had to take his charge was entirely an unenclosed country, known as Alston Moor, studded in many parts with grazing flocks. When these intercepted his progress, he had been seen to start forward, and, having stopped his own drove, to chase the others to a distance, that he might proceed without interruption or risk of intermixture. Satisfied of his ability and fidelity, he was repeatedly, after the first essay, thus intrusted alone, when circumstances rendered it inconvenient to the butcher to attend himself, and it was stated that he never lost one. We ourselves had no opportunity of seeing this dog, for a gentleman, hearing of his exploits, had bought him; but we purposely went over the ground he used to travel, and visited the yard in Alston to which he used to drive the cattle for delivery; and many with whom we used to converse in Hexham (where we then sojourned, for the purpose of moor shooting and fly fishing, both of which are here excellent), had seen him, and they all fully authenticated the facts as we have stated them. A very interesting account of similar properties in the tending of cattle in two dogs of this kind is related by Mr. Hogg, the celebrated Ettrick shepherd, in *Blackwood's Magazine*, and also in Captain Brown's *Sketches and Anecdotes*. The horse exhibited at Astley's was a surprising instance of docility; and Toby, the learned pig, astonished many persons by his performances. By what we now see of animals, it might be supposed to be a scheme to shame us by their superior intellectual manifestations for our former doubts on the subject. As in the opposite page, we see an instance of pure affection in the Newfoundland dog, we can also add one of another dog of the same kind: too brave to bite a cur which pestered him, he was seen to take him up by the skin of the neck, carry him to the river side, and drop him in.

807. *Birds have also been taught to do various tricks at command*, such as firing a pistol, feigning to be dead, &c. &c. The surprising parrot of Prince Maurice, and the equally celebrated one of Captain O'Kelly, which would sing a certain number of songs when bidden, and would also respond to certain questions with a promptitude and aptness that it is said occasionally startled even its owner, are among the instances of capacity for receiving instruction, and we have seen in London some astonishing exhibitions by canary-birds, &c.

808. *Of the attachment and fidelity of dogs, we have daily proofs.* Some very extraordinary but well authenticated ones are on record. The following was related to us by a gentleman on whose veracity we could rely, who had witnessed it. In the parish of St. Olave, Tooley-street, Borough, the churchyard is detached from the church, and surrounded with high buildings, so as to be wholly inaccessible but by one large close gate. A poor tailor of this parish dying, left a small cur dog, evidently inconsolable for his loss, for he would not leave his dead master — even for food; and whatever therefore he ate was forced to be placed in the same room with the corpse. When the body was removed for burial, this faithful attendant followed the coffin, but, after the funeral, was hunted out of the churchyard by the sexton. The next day he was, however, again found there, having made his way by some unaccountable means into the enclosure, where he had dug himself a bed on the grave of his master. Once more he was hunted out, and again he was found in the same situation the following day. The minister of the parish, hearing of the circumstance, had him caught, taken home, and fed, and he further endeavoured by every means to win the animal's affections; but they were wedded to his late master, and in consequence he took the first opportunity to escape, and regain his lonely situation. With true benevolence the worthy clergyman permitted him to follow the bent of his inclinations, but to soften the rigour of his fate, he built him upon the grave a small kennel, which was replenished once a day with food and water. Two years did this example of fidelity pass in this manner, when death put an end to his griefs; and the extended philanthropy of the good clergyman allowed his remains an asylum with his beloved master. We have also seen a healthy dog voluntarily take on himself the office of nurse to a sick one, to which he became a kind and diligent attendant, carrying him the choicest morsels from his own food. The following we can also venture to vouch for the truth of, for we received it from the owner of the dog, and the dog itself we also saw many times. A gentleman of fortune, a native of Germany, boarded and lodged with a clergyman with whom we were well acquainted. This gentleman had with him a large dog of the Newfoundland breed, of the most engaging qualities, and to which he was so attached, that wherever he went, whatever sum he agreed to pay for his own board, he always tendered half as much for that of his dog, that thereby he might insure him the treatment his fidelity so well merited. Travelling in Holland, the German one evening slipped from off the bank of a large dike into the water below, which was both wide and deep. Being wholly unable to swim, he soon became senseless; and when restored to recollection he found himself in a cottage on the opposite bank of the dike to that from which he fell, surrounded by persons who had been using the Dutch means of resuscitation. The account he received from two of them was, that, returning home, they saw a dog swimming at a distance, seemingly employed in dragging and sometimes pushing a mass he appeared to have much difficulty in keeping above water,

but which mass he at length succeeded in forcing into a small creek, and next drew it on land (*fig.* 135.). By this time the peasants had advanced sufficiently near to discover that the object of his solicitude was a man, whom the dog, exhausted as he must have been, immediately set about licking the hands and face of. The peasants hastened across by the nearest bridge, and having conveyed the body to a neighbouring cottage, and applied the usual Dutch means of resuscitation, the fleeting spark of vitality (thanks to the fidelity and intelligence of the dog) was soon restored to the full flame of life. It remains to add, that the body of our friend, when first stripped, was found to be deeply indented by the teeth of the dog, both in the nape of the neck, and in one of the shoulders, and these scars he used to show with much satisfaction; and nothing could shake his firm conviction, that his dog had first suspended him by the shoulder, but that, finding his head was not elevated above the water, he had shifted his hold to the nape of his neck, for the express purpose of so elevating it. And, however we may hesitate to attribute this change of position to a motive so intrinsically intellectual, yet we must respect his error if it was one; for where is the mind that might not be warped by such a debt? If our memory be correct, it was nearly a quarter of a mile that the dog had to swim with his master's body before any creek offered; and, when arrived there, he had still to drag it on a bank. The Marquis of Worcester did us the favour of sending for our inspection a large poodle, whose fidelity had gained him much notoriety. This deservedly prized animal was taken by force from the grave of his master, a French officer killed in battle. This sterling proof of affection and fidelity had gained him many friends, but his ferocity at any attempt to entice him away was so great, that, when it was determined to remove him, it was found necessary to throw a net over him, and thus drag him away, and by degrees to reconcile him to his loss. The cat seen in the well known portrait of the Godolphin Arabian, died of what is called "a broken heart," after the death of that celebrated horse. A partridge has also pined to death at the loss of a spaniel between whose legs she used to nestle, and for whose comfort the dog was unwilling to change his position, that he might not disturb the bird. How often has the horse been found grazing by the side of his drunken master whom he would not leave. We have seen a child of five years old purposely sent by the wife of the coachman to quiet an unruly and noisy coach horse, for to no other person would he yield such obedience; but a pat from her tiny hand, or her infantile inquiry, "What is the matter with you?" were either of them sufficient to allay every obstreperous symptom. But, we again observe, it was to her, and her only, he yielded such submission; for otherwise he was a high spirited, and really intractable, animal. Often has this child been found lying asleep on the neck of this horse, when he had laid himself down in his stall, and as long as she continued to sleep, so long the horse invariably remained in his recumbent position.

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DOG SAVING HIS MASTER.

809. *The stratagems of animals* to avoid danger to themselves or their young are interesting in the extreme. Among them we may notice the conduct of a partridge, who, to draw the dog away from her defenceless brood, affects to be so helpless as to encourage his pursuit of herself to a distance which will allow of the retreat of her younglings, and which is evidently an instinctive effort. But what shall we say of the art of the elephant, who, to avoid starving in an Indian tank into which he had fallen, dexterously built himself a platform by means of faggots handed down to him, which he placed one by one below him, until he became sufficiently elevated to step out; this surely was extra-instinctive, and altogether rational. Did our limits allow of it, we might trace other stratagems in which instinct has first impelled the attempt, but intelligence has directed the processes pursued, as is evinced by the improvements in the operations as experience has lent its aids. Thus it is that old beasts and birds are more wary than young ones, as the sportsman well knows. Some fish, which have long tenanted the waters, defy the utmost art of the angler, while the young ones fall a ready prey to them.

810. *The aptitude for domestication* which animals in general evince is among their moral excellences. We have already expressed our firm opinion that there is no animal whatever that may not be domesticated, and rendered, not only tame, but harmless and attached. We ground this conviction on the facts which have transpired relative to such as were heretofore considered wholly unconquerable in their natures. Witness the hyæna, — "the laughing hyæna" — of the showman, who vociferates his name and his qualities in the same breath as "the hanimal what has never been tamed;" and yet we have already shown the hyæna to be equally docile, obedient, and attached, when kindly treated. What would be our next selection? Probably it would be the tiger, that watchful foe, whose every movement is

marked with murderous intentions; and yet he likewise, in common with others of the *Felinæ*, has been divested of his ferocity, and even rendered affectionate; indeed, it is observed by a writer in *The Menageries*, "There appears to be no greater difficulty in rendering the tiger docile than the lion. As the sovereign of Persia has his tame lions, so have the faqueers, or mendicant priests of Hindostan, their tame tigers. These will accompany them in their walks, and remain, without attempting to escape, in the neighbourhood of their huts." The tigers in the English menageries also appear, with a few exceptions, to be under as complete control as the more generous leonine species; yet the melancholy death of the "Lion-queen" in one of these establishments not long ago, displays the uncertainty of the tiger's disposition. Mrs. Bowdich's leopard and Mr. Kean's puma are well-known instances of aptitude for domestication. The submission of the wildest and most formidable of animals to the renowned Van Amburgh is a matter well known to the sight-seers of London, and other capitals; and although he learned that they were not always perfectly free from sallies of temper or passion, his influence over them was, in general, absolute.

811. *The affections of the wolf also can be awakened, and his entire devotion to his master can be engaged.* We have already mentioned and illustrated (*fig.* 72. p. 104.) the history of a tame wolf, of which M. T. Cuvier gives a very interesting account. This wolf exhibited towards his master all the obedience and affection that the most sagacious and gentle of domestic dogs could possibly evince. He was brought up in the same manner as a puppy, and continued with his original owner till he was full grown. He was then presented to the menagerie at Paris, for his master was under the necessity of going abroad. For many weeks he remained so disconsolate at the separation from his master, that he would scarcely take any food, and was wholly indifferent to his keepers, although they tried to win him. At length, however, he became more attached to those about him, and he, even to them, seemed to have forgotten his old affections; but it was not so, as will appear. His master returned after an absence of eighteen months, and of course soon sought his former favourite; the wolf heard his voice amidst the crowd in the gardens of the menagerie, and being set at liberty, displayed the most violent joy. Again was he separated from his friend, and again his grief was as extreme as on the first occasion. After three years' absence his master once more returned. It was evening, and the wolf's den was shut up from any external observation; yet the instant his master's voice was heard, the faithful animal set up the most anxious cries, and the door of his cage being opened, he rushed towards his friend — leaped upon his shoulders — licked his face — and threatened to bite his keepers, when they attempted to separate them. When his old friend again left him, he fell sick, refused his food, and eventually pined himself to death, appearing as if he scorned any new friendships. The otter, it is well known, can be brought to be as obedient and faithful as the dog; the ferret has long been reclaimed also; the bear and the badger have been boon companions with man; and we at present know a gentleman whose chief pet is a rat, which we believe sleeps with him; it is at least at perfect liberty to do so. Sir John Carr it is, if we remember rightly, who relates his having seen a rat at an inn sleeping in company with a dog and cat. Of this trio, the landlord informed him the rat was by far the most useful, for since he had been domesticated, and wore a bell, the house, which was before infested with rats, was now entirely freed from them.

812. *At Chantilly, a crocodile used to be shown*, which was so tame as to express pleasure at the caresses of his keeper, and allowed similar notices from strangers with impunity. Several instances are detailed of the complete domestication of the seal, which also has become as tame and attached as a dog. We have also seen the common snake come when called for, when, winding itself round the leg of the person who called it, it made its way up his body, and, by insinuating itself between his waistcoat and coat, it reached his mouth, in which something was held that the animal was fond of, and which he received from thence. We witnessed this many years ago in Fore-street, Cripplegate, in a shop containing living and inanimate curiosities exposed for sale. A bell rung by the master brought forward the writhing snake and a trotting hedgehog. We doubt not that there are many others who remember the same.

813. *Birds are readily domesticated*, and it is remarkable that these aërial wanderers, which have the faculty of ubiquity more than any other animals, should of all others bear close captivity with the least apparent regret. It is true that this is not the case with all, but it is so with the majority. In many cases their domestication is so complete, that they do not accept liberty when offered. A linnet used to accompany its mistress into the garden, and while she worked or read it flew from tree to tree, but as soon as she made for the house it instantly was on her shoulder or work-box. Ravens and jackdaws have been known to fly by the side of their master, when on horseback, for miles, and waiting his return patiently, have accompanied him home the moment he returned. None are more readily domesticated, or more completely tamed, than sea-gulls. When at full liberty, the garden is the resting-place of these birds; and if the breeding season should draw them away, they return as soon as it is over into close domestication, dividing the fireside with the cat and house-dog.

814. *Fish also acknowledge their keeper and will come to his call, eat from his hand, and even allow themselves to be taken hold of.* We have ourselves thus fed the monstrous gold fish in the palace gardens of Rouen in Normandy, and we make no doubt but the same might be done to those of the Tuilleries likewise.

815. *Insects have a knowledge of persons, and are sensible of protection.* Bees particularly do this, and will even suffer some favoured individuals to take hold of them with impunity. They distinguish a stranger instantly from a whole family, and often perseveringly hunt him out. The spider, which became the companion of Lord Lovet when confined in the Tower, was at once a proof how every animal may be won, and how our own sympathies may be engaged to a humble object, when others are denied us. With these examples of the ties between ourselves and these companions of our mortal pilgrimage, can we do other than be impressed with feelings of regard towards them? And shall we not feel it to be our bounden duty to check, both in ourselves and others, all wanton cruelty towards them? Nay, are we not called upon, on all occasions, to minister to their necessities, to study their comforts, and manfully stand up for their rights?

816. *Of the instinctive means used by animals to secure them from surprise*, one interesting proof recurs to our recollection which we cannot even at this eleventh hour refrain from noticing. We have already remarked on the habit which congregated birds in fields and woods have, of posting sentinels to give them notice of approaching danger; but we have not yet pointed out the more bold and toilsome watchings of sea-birds, who, though exposed to the lashings of the surge, the force of the wind, and the bitter peltings of the snow and rain, yet maintain their station as scouts, and are ever on the look-out to warn their fellows of the approach of danger. In none of these marine tribes is this caution more apparent than in the shag, a species of *cormorant*, which frequents the Zetland or Shetland islands, of which Dr. Edmonston gives the following interesting account, and which we have further illustrated by an accurate representation of the spot alluded to — the *Noss Rock of Shetland* (*fig.* 136.). Precipitous, however, as these rocky heights are seen to be, and watchful as are the feathered sentinels posted on every projecting ledge, yet the craft and determined hardihood of the Shetlanders, we are told by the authority quoted, is such, that great numbers of these birds are occasionally taken while sleeping on the rocks, and the mode of accomplishing it is very ingenious: — "Large flocks settle for the night on projecting ledges of these rocks, but before they commit themselves to sleep, two, three, or more, of the number are appointed to watch. Until these sentinels are secured, therefore, it is impossible to make a successful impression on the main body; and to quiet them is, of course, the first object. With this view the leader of the expedition creeps cautiously and imperceptibly along the projecting ledges of rock, until he gets within a short distance of the watch; he then dips a worsted glove in the sea, and gently throws water in the face of the guard; the unsuspecting bird, either disliking the impression, or fancying, from what he conceives to be a disagreeable state of the weather, that all is quiet and safe, puts his head also under his wing and soon falls asleep. His neck is then immediately broken, and the party dispatch as many as they choose."

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NOSS ROCK.

PART III.

BRITISH FIELD SPORTS INDIVIDUALLY CONSIDERED.

817. *The direct limits* of the terms Field Sports, or Rural Sports, are somewhat difficult to define to the satisfaction of the entire mass of readers. For instance, some might allege that tennis and rackets, although extremely popular as games, yet being usually practised within an inclosure, and often under cover also, cannot, with propriety, be called either rural or field sports. Others might, by the same line of argument, contend that neither cock fighting, dog fighting, nor badger baiting ought to claim a place in our list. But however questionable the humanity or the respectability of these latter sporting exercises

may be, we, as professed chroniclers of the pursuits of the sporting public, are imperatively called upon at least to note them. We feel confident that we need no such excuse for having already dwelt somewhat more at large on the manly games of cricketing, archery, golfing, hurling, bowling, skating, wrestling, &c. : these we have already described somewhat at length; claiming, at the hands of our readers, forgiveness for many omissions, that, with all our care, are likely to have been made; and we also plead for a candid and liberal view of the extent of the matters treated on, their multifarious nature, which we hope may be considered as some excuse for any detected errors. With very few exceptions, the subjects have been not only studied, but witnessed by us also; yet we do not hold up the matter offered as perfect in its dress, although true to the letter in what it states. The subjects just noted, however we may consider them as necessary to make part of our sporting detail, yet they are a very minor part only. These being already finished, we shall now enter fully on the more important and popular sports of racing, hunting, coursing, hawking, shooting, and fishing.

CHAP. I.

THE BRITISH PRACTICE OF HORSE RACING.

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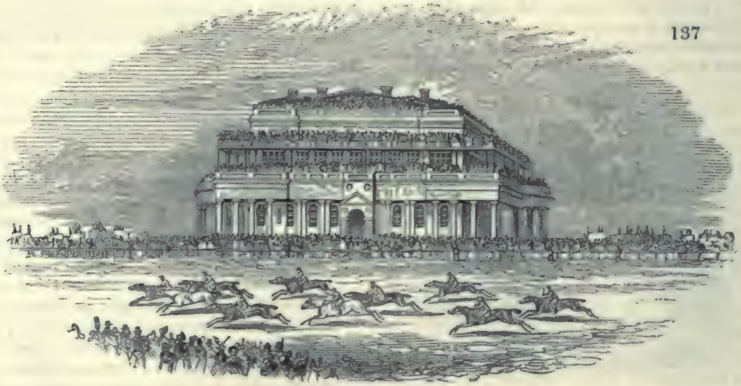

GRAND STAND AT DONCASTER.

818. *Horse racing has many important claims on our attention.* We are not to regard it for the mere pastime it affords of *railing* down to Doncaster to witness the Leger run for (*fig.* 137.); or of *tooling* our own *drag* to Epsom or Ascot, with other equally interesting exhibitions of ourselves and appurtenances; we have rather to view it as a legitimate bequest left us by the ancients, whose recorded feats on the Olympic course, thousands of years ago, have excited an emulous rivalry in our breasts to equal their achievements. We have also to consider its importance as being the principal agent in the improvement of the British horse, and as that which principally tended to bring him to a state that has made him a wonder and the admiration of the world.

Sect. I. *The History and Progress of British Horse Racing.*

819. *As to the direct origin of horse racing, history paces on somewhat uncertain grounds.* As trials of speed between man and man must have been almost coeval with his pristine state, we might naturally suppose that, when he had subjugated such beasts as are swift of foot, he would be led to promote emulous racings between them. The question therefore is, What were the primitive coursers? Were they asses, camels, or horses? We have already shown that the two former were the earliest subjects of domestication; and when the horse was enlisted into the service of man, it would appear from historical research that he was first trained to draught, and was not mounted until long after. Solomon had forty thousand stalls of horses for his chariots, and twelve thousand horsemen. (1 *Kings*, iv. 26.) It is also certain, that on very early Egyptian monuments the horse is seen in battle, and also under circumstances which denote long subjugation and much experienced training. To reconcile these seeming discordances, we must suppose that a correct chronological account had not been kept, however the main facts may be considered as correct. Monumental effigies, likewise, sometimes err, or their dates are erased.

820. *Chariot racings are probably, however, those in which the horse first distinguished himself as a courser,* and we believe our earliest notices on the subject point to those of Persia, which were practised at the sacrifices made to the sun, under the name of Mithras. This worship of the sun appears from the account of Dr. Hyde, *De Religione Veterum Persarum,* to have been the prevalent idolatry of almost, if not of all, the eastern countries, and to have been in early times no where accompanied with more ceremony than among the Medes and Persians. The Jews also, hitherto withheld by their theocratical form of government and their rigid fanaticism, from entering even into the innocent sports of other nations, fell at last into the same practices. Thus we read that Josiah took away the horses that the king of Judah had given to the sun, and burnt the chariots of the sun. (2 *Kings* xxiii. 11.) This occurred A. M. 3308, or B. C. 633. The sun, indeed, would seem to have been the first object of pagan worship; nor is it to be wondered at that the powerful influences of light and warmth derived from it, should have engendered veneration in uninformed man throughout the universe. Neither can it be uninteresting to the admirers of the horse to learn, that the swiftness and durability of his course being supposed to be emulative of that of the sun, occasioned him to be especially dedicated to that luminary. Thus Sol himself was represented, in the rude paintings and sculptures of those days, as riding in a chariot drawn by a set of fiery coursers, and performing a diurnal journey from east to west.

821. *The Mithraic festivals at which these chariot races were exhibited,* we are informed by Zoroaster, the great reformer of the religion of the Medes and Persians, were principally conducted in a cave, *aprico subdio,* called *antrum Mithraicum.* (*Dr. Hyde, loc. cit.* p. 117, 118.) In this cave the sacred fire was also kept; and it was, we may suppose, after the solemnization of the principal rites and ceremonies of the worship, that the chariot racings commenced. In Montfauçon's *Antiquities* may be seen representations of many sculptures of these sacrifices, and their symbolical accompaniments, which have from time to time been dug up in various parts of the east. This idolatrous worship, with its racings, its games, and revelry, spread itself over Greece, and from thence to Rome, whose mighty dictation sent it to Gaul. Sicily even instituted its *ludus Trojanus*; in Constantinople it was likewise to be met with; and it flourished in Britain during the Roman ascendency. It must, however, be remarked, that as there is a fashion in every thing, so idolatry multiplies, or changes, its objects of veneration as man becomes more imaginative: thus the Greek and Roman gods multiplied as new heroes started into notice, or new fables became popular. "The earliest festivals of the Greeks," says Horace Smith, "and indeed of all nations, were kept in the autumn, after gathering in the fruits of the earth, when gratitude prompted them to offer up sacrifices to heaven, and social festivities were the natural consequences of plenty. Ceres and Bacchus were therefore the chief primal divinities; spring and summer soon claimed their appropriate representatives and celebrations; and human heroes and benefactors next received the honours of the apotheosis, none of whom probably conferred such blessings on mankind by their living exploits (which could only affect a single age) as by their laying the foundation of a public festival to be enjoyed by long succeeding generations of a whole people." (*National Library,* p. 25.) This was fully exemplified among the Athenians, who, exclusive of vast numbers of stated holidays, on which public spectacles wers eeen, had "four great national festivals of the Olympian, Pythian, Isthmian, and Nemean games, each of which lasted several days, and all of which, from the narrow dimensions of the Grecian territory, and the universal truce observed during their celebration, were accessible to all classes, even in the midst of war." Of these the Olympian was the most popular, being dedicated to the Olympian Jupiter. It occurred every fifth year, and continued five successive days.

822. *The Olympic games, first practised in the city of Olympia,* attracted spectators, not only from every part of Greece, but even from countries far distant. The preparation for their celebration took up two or three years to complete. In these games various exercises were performed besides horse and foot racings. There were gymnastics, or the pentathlon, in which leaping, quoiting, wrestling, and darting were practised. The cœstus also formed a part of the sports, which was a species of boxing, rendered more savage and dangerous by the hands being weighted with lead or iron. The Olympic course was divided into the stadium and the hippodromus. The former was appropriated to foot racings and to combats, and extended over an elevated causeway, six hundred feet long; the hippodromus was much larger, and was the arena for the exhibition of the horse and chariot races.

823. *The foot races of the stadium,* as being the most ancient, were the most honourable, and the name of the principal victor was associated with the Olympiad itself, and handed down to posterity in the records of the games. On the last day of the festival, the various victors were decked with crowns of olive and branches of palm, while the multitude shed flowers over them. The horse and chariot races, though less ancient than either the foot races or gymnastics of the stadium, yet engaged men of higher rank, and were conducted with much more pomp and magnificence.

824. *The carriages employed were small low vehicles*, to which from one to four horses, abreast of each other, were attached, the charioteer standing up in the chariot to urge and guide his steeds (*fig.* 138.). Mules also were occasionally so employed. It would appear that, eventually, when riding on horseback became common, in addition to the driver, a man so mounted sometimes preceded the chariot; at others, one of the chariot horses was ridden by a postilion; but which, probably, only occurred when more than three horses were abreast, as was sometimes the case. Sculptured relics present us with the effigies of five so placed. Pliny, indeed (lib. xxxiv. cap. v. s.10.), notices six horses abreast. It was Clysthenes, the Sicyonian, who introduced the custom of coupling up the two middle horses, the rest being restrained by reins. Suetonius (N. 24.) notices Nero as himself driving at the Olympic games ten horses abreast!! The following vivid description of a chariot race on such an occasion, from the pen of Mr. H. Smith in the *National Library*, vol. v. p. 72., is too much to our purpose to be passed over: — "The richest individuals of Greece made a study and a merit of producing the species of horses best adapted for the course, thus accomplishing the original object of the institution, which probably had in view the improvement of the breed; and even sovereigns frequently enrolled themselves among the competitors, intrusting their glory to able horsemen and charioteers. At one festival, seven chariots were entered in the name of the celebrated Alcibiades, three of which gained prizes, and furnished an occasion to Euripides for inscribing a complimentary ode to the conqueror. Over a bar that ran across the entrance of the lists was placed a brazen dolphin, and upon an altar in the middle of the barrier stood an eagle of the same metal. By means of a machine, put in motion by the president of the games, the eagle suddenly sprung up into the air with its wings extended, so as to be seen by all the spectators; and at the same moment the dolphin sank to the ground, which was the signal for the cars to arrange themselves in order for the race. Besides the statue of Hippodamia, and the table on which were placed the crowns and palm-branches, there were several images and altars in the course, particularly that of the genius Taraxippus, who, as his name imports, was said to inspire the horses with a secret terror, which was increased by the shrill clangour of the trumpets placed near the boundary, and the deafening shouts and outcries of the multitude. While the chariots were ranged in line ready to start, the horses, whose ardour it was difficult to restrain, attracted all eyes by their beauty, as well as for the victories which some of them had already gained. Pindar speaks of no less than forty chariots engaged at one and the same time; and when we recollect that they had to run twelve times the length of the hippodrome, in going and returning, and to steer round a pillar or goal erected at each extremity, we may imagine what confusion must have ensued when, upon the signal trumpet being sounded, they started amid a cloud of dust, crossing and jostling each other, and rushing forwards with such rapidity that the eye could scarcely follow them. At one of the boundaries a narrow pass was only left for the chariots, which often baffled the skill of the expertest driver; and there were upwards of twenty turnings to make round the two pillars, so that at almost every moment some accident happened, calculated to excite the pity or insulting laughter of the assembly. In such a number of chariots at full speed pushing for precedence in turning round the columns, on which victory often depended, some were sure to be dashed to pieces, covering the course with their fragments, and adding to the dangers of the race. As it was, moreover, exceedingly difficult for the charioteer, in his unsteady two-wheeled car, to retain his standing attitude, many were thrown out, when the masterless horses plunged wildly about the hippodrome, overturning others who had perhaps previously escaped every danger, and thought themselves sure of winning. To increase the confusion, and thereby afford better opportunities for the display of skill and courage, there is reason to believe that some artifice was employed for the express purpose of frightening the horses when they reached the statue of Taraxippus. So great sometimes was their consternation, that, no longer regarding the rein, the whip, or the voice of their master, they broke loose, or overturned the chariot, and wounded the driver." The inquisitive, who wishes further information on this interesting subject, is referred to the *Greek Anthology* and to Anacharsis.

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CHARIOT RACING.

825. *Horse and chariot racings were next seen in Rome*, where they continued to be exhibited as a part of the festivities of Mithras. According to Plutarch, the Romans first practised this worship in the time of Pompey, after which it appears to have languished, but was at length restored with increased magnificence in the time of Julius Cæsar, when he figured as dictator, at which period the chariots of the sun must have formed a distinguished spectacle. Both these and the feats of the *equiria* have been greatly celebrated by all the

historians of those times. Although their equestrian spectacles were modelled much after those seen in the Olympic games of Greece, yet they exhibited some distinctive features. Thus, in lieu of the noble riders and charioteers of the Attic race, the horses of the Roman course and circus were more frequently ridden and driven by slaves, or persons hired for the purpose, than by the owners of the horses themselves. Yet the Romans were even more enthusiastic in their horse racings than the Grecians, both as jockeys and drivers of chariots: indeed, horse racing formed one of the principal amusements of the carnival at Rome; and in the first racings by the barberi, or Barbary breed of horses, instead of contests between the riders who urged their steeds, the racers were unmounted, and urged on, not only by their own emulation, but by the nodding plumes of feathers on their heads, and, most of all, by the shaking of small balls of lead having sharp points, these being attached to the horses' necks by means of straps.

826. *The mounted races of the certamina equestria* also became favourite exercises of the Romans; but as we have reason to suppose saddles were not yet in use, and stirrups we are certain were not yet invented (see *fig.* 139.), it excites some surprise how the riders could keep their seats, for we read that they were expected to exhibit extraordinary feats of agility, such as leaping up and down from their horses, lying at length on their backs, standing upright on them, or picking up small coins thrown by the spectators, &c., &c. The riders of these coursers were a hired set, called *desultores* or *leapers*, and probably resembled the riders at our theatrical circus. We therefore infer, the feats of the horsemen, rather than the speed of the horses, formed the entertainment. In the races, as well of the Grecian as of the Roman course, certain prescribed rules and regulations were to be strictly followed: the competitors were required to enter their names, and to send their horses to a given place, at least thirty days before the races commenced, where a species of training was imposed, not only on the horses, but also on the charioteers and riders. The longer courses, like our own, were appropriated to the aged horses, and the shorter to colts. Mares ran against mares, as at our Epsom Oaks' stakes, and they had their clerks of the course and judges, who took the direction of the whole. The victorious riders, or drivers, were liberally rewarded; but we do not hear that gambling formed a prominent feature of either the Grecian or Roman turf; on the contrary, we may suppose the entertainment of the spectators, and the approbation bestowed on the victors, were the principal objects contemplated.

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ROMAN HORSE RACING.

827. *The first races of the Romans were exhibited on the open plain*; the chosen spot was next enclosed within ropes or rails, to prevent interruption; and they continued thus until Tarquinius Priscus built the grand circus at Rome (A. M. 3344), where they were afterwards mostly exhibited. "How far the horses ran before they got to the last *meta* from the starting-place, is not expressed by historians; but we are informed that the above course was said to be about two thousand one hundred and sixty-seven Roman feet in length, and nine hundred and sixty broad; of a semicircular form at one end, the other ending in a right line. The races commonly ended at the seventh turn round the *metæ*. (*Propertius*, lib. ii. elog. 29.) The number and length of the heats, however, occasionally varied. The *missus*, or matches were generally about twenty-four, though sometimes a far greater number were exhibited; for Suetonius tells us that the Emperor Domitian presented a hundred matches in one day. The time when the races were to begin was anciently given by sound of trumpet. The horses being up at the line, ready for starting, the signal was given by *mappa*, or a napkin, hung out at the prætor's tent, or chief magistrate's seat, something like the ordinary mode of starting horses at country courses here. Hence Juvenal calls them Megalensian games — *Megaliacæ spectacula mappæ*. The origin of this custom is thus accounted for: — Nero was once at dinner, and the people making a great noise, desiring that the sport might begin, the emperor immediately threw the napkin he had in his hand out at the window, as a token he had granted their request." (*Anecdotes of Horse Racing*, p. 28.)

828. *The Roman jockeys rode as ours now do in different colours*, particularly the companies of charioteers, to distinguish themselves. There were, according to Kennet, generally four, viz. *prasina*, green; *russata*, red; *alba*, or *albata*, white; and the *veneta*, sky or sea colour; but green was generally the favourite colour, especially under Caligula and Nero. Suetonius tells us that Domitian (who was made emperor A. D. 81., and died A. D. 96.) added two more colours, viz. the golden or yellow, and the purple; but these were soon laid aside by the following emperors. Racing, indeed, appears to have been so favourite a diversion of the Romans, that they practised it with other animals besides horses. Asses were made coursers; and ostriches were competitors for the goal. The tyrant Heliogabalus made racing matches with elephants; four being attached to each chariot. He also employed camels for the same purpose.

SECT. II. *The History of British Horse Racing.*

829. *The first British chariot races* are supposed to have been introduced by the Romans after their invasion of this island. The Mithraic festivities certainly appear to have been practised in many parts of the kingdom during the Roman domination; sculptures in basso-relievo, similar to those of Greece and Rome, having been dug up in several places. One found in Micklegate, at York, is particularly noted. Stukely saw others at Chester and in Northumberland. This antiquarian thinks that the York sculpture was placed there in the time of Aurelian. Dr. Stukely supposes the races at York, celebrated in honour of Mithras, were on the neighbouring plain of Knavesmire, where the annual races are now run, or in that called Camplesham pasture; both of which localities are near Micklegate-bar, a little on the left hand going out of York, southward, not far from the cave where the sculpture of Mithras was found, and both present sites very convenient for the purpose. To this, however, it has been objected, that it could not be Knavesmire, which was then a mere boggy marsh; but that it was most likely to be Camplesham Pasture, which must have been a more eligible spot for the purpose. Stukely is, however, by others thought to be altogether wrong in his surmise, that any direct course for racing was made at York, inasmuch as no vestige is left of any, above or below the surface, in either of the supposed places.

830. *Were there, however, no horse racings among us previous to the appearance of the Romans?* is a very natural question, and one particularly to our purpose. The invaders found the Britons already in possession of war chariots, which they managed with a dexterity and effect fatal to their enemies. Is it not natural, therefore, to suppose that the Britons had already practised trials of skill and speed with their chariots and horses, for the purposes both of amusement and of exciting emulation among the horses and drivers? And though, according to the venerable Bede, the horses of those times were more signalised for their strength than their beauty or agility, yet it was not likely but that they would exhibit sufficient emulation, when urged by their masters, in trials of the relative speed of each against the other in their charioteerings; for it seems, from the general tenor of history, that riding on horseback was not common for many centuries after horses had been in general use for drawing carriages. To us, however, there always appears much difficulty in reconciling this with the more natural probability, that man would first use the horse as a beast of burden, that he would next mount him, and last of all he would attach him to a carriage. Nevertheless, the concurrent testimony of many authors goes to prove that such was not the case. Be this as it may, we may safely conclude that, wherever the horse was domesticated with man, an exhibition of his powers would become a subject of emulous rivalry with his owners; and we can therefore hardly doubt that the ancient British war chariots had been engaged in set trials of skill and speed long before they met the notice of the Romans.

831. *Mounted racings*, according to history, did not appear until the time of the Anglo-Saxons; and our first notice of what may be supposed to be something like regular horse coursing is drawn from an account of the application made for the hand of Ethelswitha, the sister of Athelstan, by Hugh, the head of the house of the Capets. Among other valuable presents sent by that prince to Athelstan were several "running horses," which we may suppose would be especially regarded by the Saxon monarch; who we know had already been at much pains to improve the British breeds by importations from the continental studs, particularly from the Spanish coursers as they were called. By these means a breed was produced that flourished from the time of the Crusades until the days of the Tudors, a period which has been called "the era of the great horse." This majestic race, we may safely conclude, was more signalised for strength and lofty action, than for anything like the speed of the racer of our times. Without question, however, the youths and sporting characters of those days occasionally matched their horses against each other, but without regard to fixed rules, long-continued training, or studied regard to prescribed weights, measurings, or other of the mysteries of the modern turf. Race courses were then unknown, and the goal was any given distance or point; something as was adopted in riding steeple chases on their first coming into vogue.

832. *The earliest authentic accounts of local racings* refer to a level piece of turf, situated on, or near to where, Smithfield Market now stands. This spot, even at the time we hint at, had been long used both as a horse market, and as the ground on which the tilting matches and grand military evolutions of the war-horses were exhibited. It was here, we are informed by Fitzstephen, a historian who lived in the time of Henry the Second, "that races were common, of which the gentry and wealthy citizens were very fond." These matches were, however, such only as were made up among the owners of the *hackneys* and *charging steeds* of those times, in trials of speed against the horses of each other. "When a race is to be run," says a writer of those times, "by this sort of horses, and perhaps by others, which also in their kind are strong and fleet, a shout is immediately raised, and the common horses are ordered to withdraw out of the way. Three jockeys, or sometimes only two, as the match is made, prepare themselves for the contest. The horses on their part are not without emulation; they tremble and are impatient, and are continually in

motion. At last, the signal once given, they start, devour the course, and hurry along with unremitting swiftness. The jockeys, inspired with the thought of applause and the hope of victory, clap spurs to their willing horses, brandish their whips, and cheer them with their cries." In the metrical romance of *Sir Bevis of Southampton* we learn that, at Whitsuntide, the knights

> "A cours let them make on a daye,
> Steeds and palfraye to assaye,
> Which horse that best may run."

833. *The Crusades* which followed this period, though favourable to the improvement of the English generally, yet did little for the advancement of systematic racing. The intercourse established by the crusaders with eastern countries was followed by the introduction of both stallions and mares from Asia; but in the selection of these it is probable the same attachment to the figure of the war-horse guided the choice. It therefore yet remained for after times to import the true eastern courser from Arabia, Barbary, &c.; for although, in the reign of Henry the First, an Arabian is said to have been imported, yet we have not records of any proceeds from him: and the numerous running horses of Edward the Third, being nearly all imported from Spain, were little other than the same stately charger, which could at once carry the cavalier and his massive accoutrements; and as long as the feats of the tilt-yard engaged the affections of the people, so long the racings were little more than exhibitions of the strength and endurance of their ordinary horses, rather than what we consider as "horse racing." It is to the want of speed in the horse of those times, as much as to the inequalities of the ground passed over, that we must attribute that conduct of the older sportsmen, which we of the present day consider most unfair. In those times, because neither the horses nor dogs were swift enough of themselves to run down the fleeter beasts, it was common to lie in wait, and to ambush the flying animal, to render its destruction more certain. We are therefore of opinion, that the more modern method of hunting and systematic horse racing are contemporaneous.

834. *In the middle ages* the nobility patronised horse racing during the holiday festivals, in which it was no uncommon sight to witness the owner riding his own match; but hitherto no particular spot, except that of Smithfield, seems to have been selected as the arena of these courses. During the reign of Henry the Eighth, horse racing becoming more and more encouraged by all ranks, turfed courses began to be formed. Randel Holme, a Chester antiquary, informs us that, on Shrove Tuesday, the company of saddlers of Chester presented "the drapers a wooden ball, embellished with flowers, and placed upon the point of a lance. This ceremony was performed in the presence of the mayor at the cross in the Roody, an open place near the city; but this year" (1540) continues he, "the ball was changed into a silver bell, valued at three shillings and sixpence, or more; to be given to him who shall run best and furthest on horseback before them on the same day, Shrove Tuesday. These bells were denominated St. George's bells; and we are told that, in the last year of James the First, John Brereton, innkeeper, mayor of Chester, first caused the horses entered for this race, then called St. George's race, to start from the point beyond the new tower, and appointed them to run five times round the Roody; and," says my author, (the younger Randel Holme), "he who won the last course, or trayne, received the bell, of a good value, eight or ten pounds, and to have it for ever; which moneyes were collected of the citizens for that purpose." By the author's having added that the winner of this race was to have the bell for ever, is implied, that it had formerly been used as a temporary mark of honour by the successful horseman, and afterwards returned to the corporation.

835. *The saying*, "*bear away the bell*," is by many supposed to have originated from the silver bell given to the victor at these races. From this time a very considerable period occurs during which little improvement took place as to the manner in which our ancestors carried on their hunting and racing pursuits; nor can this excite any cause of surprise, for what was there to bring about such improvement? The country remained nearly in its pristine state, nor was the breed of horses sufficiently improved to cause much alteration in the mode of using them in those days. "Hey to the forest" or the "woodland," was indicative of the chase; and it was not till those forests and woodlands began to be cleared, that the necessity of an improved and far speedier race of horses became apparent.

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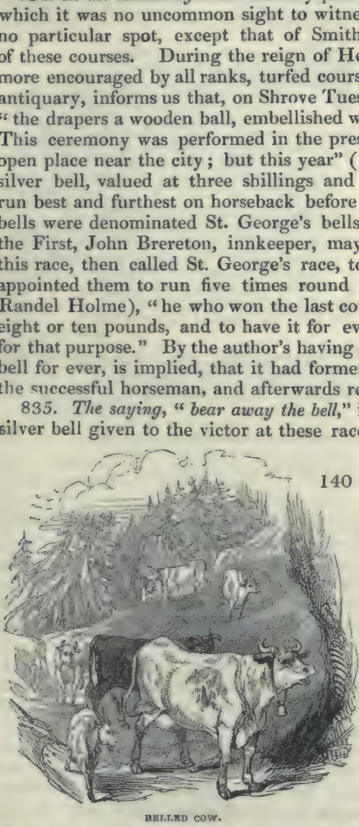

BELLED COW.

835. *a.* Our ancestors, though probably as keen sportsmen as ourselves, were so chiefly as regarded possessing themselves of the game they pursued; and this arose in great measure from the species of game they pursued, and we must allow that, exhilarating as we hold the chase of the fox to be, the possession

of a good fat buck was no bad finale to a day's hunting. To effect this, if the flying game outstripped the speed of hounds, he was brought down by a shot from an ambushed huntsman. The heavy horse of that day could go fast enough for the hunter's use. It is not, however, to be supposed that in such national pursuits as hunting and racing, no improvement took place; for as a nation becomes further removed from its original barbarity and ignorance, so does a certain degree of refinement in its sports and amusements also take place; and when, during a long course of time, and by almost imperceptible degrees, improvement has reached a certain pitch, the advance to that which closely approaches perfection is made with vast accumulated rapidity. Thus, far greater comparative improvement has been made in the mode of carrying on all field sports during the last hundred years than took place during a great number of centuries before.

836. *James the First greatly patronised racing*, and consequently it became very popular during this reign. Private matches between gentlemen who rode their own horses were already common. Public race meetings were also held at Garterley in Yorkshire, Croydon in Surrey, on Enfield Chase, and, if Sir Simon D'Ewes be not mistaken, an appointed race meeting had also been held near Linton in Cambridgeshire. In this reign it was that the turf, so called, first assumed a systematic dress, and became somewhat scientifically and methodically conducted. Attention was paid to the feeding and training of the horses; the jockeys were also trained and instructed; and though the weights carried were not yet properly adjusted to the ages and powers of the racers, some progress had been made thereto. It was however unfortunate, that though both stallions and mares of the eastern breeds were imported during this reign, none of them proved important acquisitions; nor was his majesty himself more fortunate in the Arabian he purchased at the price of 500*l.*; a sum equal to 1,500*l.* of our times. (See *History of the Thorough-bred Horse*, p. 258.) In consequence of this failure, the high expectations of benefit from Arabian blood received a check, and even the sport of racing itself languished. We pause, however, to offer the following quaint ditty in commemoration of a racing freak which took place at Garterley, or Gatherly, in its early turf exhibitions. (See *Drayton's Poly-Olbion*, song 3.)

"You heard how Gatherly race was run,
What horses lost, what horses won,
And all things that there was done,
That day.

Now of a new race I shall you tell,
Was neither run for bow nor bell,
But for a great wager, as it befell.
Men say

Three gentleman of good report,
This race did make, to make some sport;
To which great company did resort,
With speed.

To start them then they did require,
A gallant youth, a brave esquire,
Who yielded soon to their desire.
Indeed,

They started were, as I heard tell,
With, now St. George! God speed you well!
Let every man look to himsel,
For me.

From Sever-Hill to Popleton Ash,
These horses run with spur and lash,
Through mire and sand, and dirt, dish, dash,
All three.

Bay Corbet first the start he got,
A horse well known, all fiery hot;
But he full soon his fire had shot·
What tho'?

For he was out of graith so sore,
He could not run as heretofore,
Nor ne'er will run so any more,
I trow.

Grey Ellerton then got the lead,
A gallant beast, of mickle speed;
For he did win the race indeed;
Even so.

Grey Appleton the hindermost came,
And yet the horse was not to blame,
The rider needs must have the shame
For that.

For tho' he chanc'd to come behind,
Yet did he run his rider blind;
He was a horseman of the right kind,
That's flat.

For when the race was past and done,
He knew not who had lost nor won;
For he saw neither moon nor sun,
As then.

And thus this race is at an end,
And so farewell to foe and friend;
God send us joy unto our end.
Amen."

837. *The reign of Charles the First* commenced with decided marks of encouragement to racing. Newmarket was first made a favourite spot for turf exploits under his auspices, and it was he also who established races in Hyde Park; about which time he altered the racing prize from a silver or gold bell to that of a silver cup. It is to be lamented, however, that the political disturbances of his day prevented the whole of what was probably intended for the improvement of the breed of horses in general, and the sports of racing in particular, by this accomplished horseman.

838. *When Cromwell assumed the Dictatorship*, the fanaticism of the times made him discontinue all the established racing meetings, but he was too politic to neglect the improvement of the root of the sport, that of the horse himself; on the contrary, he kept up a stud of his own, and had in it some of the best blood-horses of that time.

839. *The Restoration*, which brought with it the blessings of peace, revived all field sports. The turf in particular received a new impetus, for the second Charles took it under his especial patronage. He established races at Datchet Mead, near his residence at Windsor, that he might more conveniently enjoy this favourite sport. He was also regular in his attendance at Newmarket, now boasting every accommodation for the training of horses,

with an excellent race-course; which, as the system progressed, was apportioned into distances, corresponding with the several ages and supposed powers of the horses. By this arrangement, as well as by a judicious appropriation of the different weights to be carried, according to similar circumstances, a scale of equality was kept up, highly to the credit of the turf regulations, and very favourable to the increase of its popularity. So enthusiastic was his majesty in his love of this amusement, that he entered his horses in his own name. Indeed, much of the arrangement, and most of the rules and regulations since in force, were formed about this time, and under the auspices of this prince. It would also appear, that at the house fitted up and kept for his use in Newmarket, he passed some of his most pleasant hours.

840. *William the Third*, although not professedly a votary to the turf, yet afforded it his royal encouragement, not only by continuing the former crown donations, but by adding also several others. Queen Ann likewise gave some royal plates, while her consort, George, Prince of Denmark, proved a personal admirer and frequenter of the sport, himself keeping an excellent stud, and encouraging the importation of racing stallions. The Curwen Bay Barb and the Darley Arabian were introduced in this reign.

841. *George the Second did little for racing*, but to substitute purses of one hundred guineas for the old royal plates. The turf however at this period had established itself so firmly in the public opinion, that it wanted no other protection than the hold it had on the people's estimation. This period is also marked by the number of foreign stallions of the very best breeds which were imported. (See *History of the Thorough-bred Horse*, p. 258.)

842. *George the Third likewise proved no turf-man*; nevertheless, on national principles, he encouraged the sport, and patronised the introduction of racing stallions, which, therefore, continued occasionally to be brought over, although in diminished numbers; for the breeding system in our own studs had by this time attained such perfection, that, had a certain number of English bred racers been selected, and matched against a similar number chosen from any other part of the world, there is little doubt but that our own would have proved superior, as well to their own primogenitors as to all others. Eclipse (*fig.* 141.) was an early turf ornament to the reign of George the Third, being foaled in the fourth year of it; and how many minor stars graced the course during its continuance, let the *Racing Calendar* testify. The Duke of Cumberland, the king's brother, also stands eminent at this period as a breeder for the turf: Marsk emanated from his stud, as did the more celebrated Eclipse just mentioned, who was a son of Marsk; Herod also, who, like Eclipse, was at once a most noted racer, and the sire of some of the best horses of that day, among which we may instance Highflyer. Mr. O'Kelly, the great turf-man of these times, became the fortunate possessor of Eclipse, and the breeder of Volunteer and Dungannon by Eclipse, who is said to have been the sire of no less than one hundred and sixty winning horses. The breeding stud of O'Kelly was immense, and his knowledge of turf affairs was equal, if not superior, to that of any of his contemporaries. To Earl Grosvenor the turf at this period was also greatly indebted; he bred largely, and his stock was the great support of the country races. His two mares, Meteora and Violante, will be long remembered. In proof, however, that racing even then was hazardous, it is said that Lord Grosvenor, though supposed to have won 200,000*l.* on the race course, was minus at last. Alas! is he alone? Unfortunately that honesty, which insures riches in most other pursuits, is almost certain to occasion loss in racing. As a promoter of the turf, the patriotic Duke of Bedford should not be passed over. His grace was in possession of Grey Diomed, notorious for his running at Newmarket with Escape and Traveller. This esteemed nobleman had at one time nearly thirty horses in training; but they could not save their master's cash, and he retired from the turf in disgust, a heavy loser. Racing also owned the patronage of many other noble dukes, as those of Kingston, Cleveland, Ancaster, Bridgewater, Grafton, Hamilton, and Northumberland. Of lords, we may mention names conspicuous as turf amateurs, among whom may be particularised Rockingham, Bolingbroke, Chedworth, Barrymore, Ossory, Clermont, Abingdon, and Foley. The names of Shafto, Meynell, Bullock, Panton, Ralph, Dutton, Smith, Barry, Wildman, and "last, though not least," the Honourable Richard Vernon, will all of them long remain fresh in our memories as friends and patrons of the racing of by-gone days; neither will the renown of Sir Charles Bunbury, as a staunch and judicious turfman, be speedily lost.

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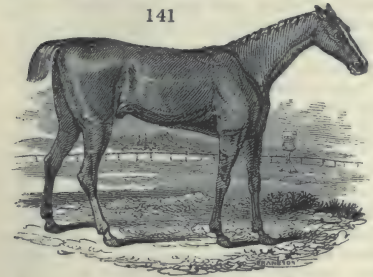

ECLIPSE.

843. *As a lover of the turf*, and as a general sporting character, the late Duke of Queensberry will ever stand conspicuous; and as his apotheosis could not be in better hands than those

of Nimrod, in the *Quarterly Review*, No. xcviii., we shall give it as it stands there: — "The name and exploits of the late Duke of Queensberry will never be forgotten by the sporting world; for whether we consider his judgment, his ingenuity, his invention, or his success, he was one of the most distinguished characters of the English turf. His horse Dash, by Florizel, bred by Mr. Vernon, beat Sir Peter Teazle over the six-mile course at Newmarket for 1,000 guineas, having refused 500 forfeit; also his late majesty's Don Quixote, the same distance and for the same sum; and, during the year 1789, he won two other thousand-guinea matches, the last against Lord Barrymore's Highlander, eight stone seven pounds each, three times round 'the round course,' or very nearly twelve miles. His carriage match, nineteen miles in one hour, with the same horses, and those four of the highest bred ones of the day, was undoubtedly a great undertaking, nor do we believe it has ever been exceeded. His singular bet of conveying a letter fifty miles within an hour, was a great trait of genius in its line. The MS. being enclosed in a cricket ball, and handed from one to the other of twenty-four expert cricketers, was delivered safe within the time. The duke's stud was not so numerous as some of those of his contemporaries on the turf, but he prided himself on the excellence of it. His principal rider was the famous Dick Goodison, father of the late Goodison, in whose judgment he had much reliance. But, in the language of the turf, his grace was "wide awake," and at times would rely on no one. Having, on one occasion, reason to know — the jockey, indeed, had honestly informed him of it—that a large sum of money was offered his man if he would lose —'Take it,' said the duke, 'I will bear you harmless.' When the horse came to the post, his grace coolly observed, 'This is a nice horse to ride; I think I'll ride him myself;' when, throwing open his great coat, he was found to be in racing attire, and, mounting, won without a struggle."

844. *George the Fourth and his royal brother, Frederick, Duke of York,* were illustrious and warm supporters of the turf. They both began their sporting career early in life; the former being only in his twenty-sixth year when he was a winner of the Derby. In the next season, 1789, he purchased Traveller, by Highflyer. Traveller ran the celebrated match against the Duke of Bedford's Grey Diomed, on which vast sums depended. The full brilliancy of the prince's sporting life was not of long continuance; it was shadowed by one of those events in turf speculations which are often shut up in impenetrable mystery. We allude to the last race of the notorious Escape, against the no less celebrated Grey Diomed, in which foul play was attributed to the prince; but, as the accusation was never satisfactorily proved, the Jockey Club was blamed for the notice they took of the matter. If they were convinced that there was something actually dishonourable in the case, we really think they compromised their own dignity in afterwards inviting his royal highness to appear again as a member; and we applaud his spirit in refusing the invitation. It was also greatly to his credit that he did not wholly withdraw his patronage from the turf, although he afterwards confined it principally to country races; particularly to those of Brighton, Lewes, and Bibury. When he mounted the throne of his ancestors he continued the same line of conduct. He was a warm supporter of Ascot and Goodwood, and kept up a stud of very good horses, most of which he purchased, breeding but few himself. Whiskey, Manfred, and Maria, his great favourite, were the most remarkable of those he bred.

845. *The Duke of York was not more fortunate in his turf speculations than his brother;* and it has been said of him, that he met no small portion of these expenses by selections from his grey carriage horses (of which he used to keep a large assortment in the highest possible state of carriage discipline and condition), and many of these he disposed of to an immense amount. Racing was not his forte, neither was he sufficiently wary; but, on the contrary, too confiding and unsuspicious for a turf-man. Nor was his judgment, as relates to racing and race-horses at all on a par with that of his elder royal brother, who was a judge far beyond mediocrity of such matters, and who, independent of this, got those persons about him as deeply versed in all the intricacies and mysteries of racing on every point as any man living. Not that any insinuation is contemplated that this prince wished to avail himself of the knowledge and experience of those persons for any improper or even equivocal purposes; but all turf men, even in those days, were not quite immaculate, and the prince found it absolutely necessary to meet the manœuvres of such men by proper caution. Racing is often ruinous to those who do this; but the loss increases manifold with such as do not, and, unfortunately, the Duke of York was one of those. Some fortunate sales of his admirable grey carriage horses might have paid a portion of the cost of his racing stud, but he lost far too heavily on the turf for his expenses to be materially lightened by these resources.

846. *The late Earl Fitzwilliam was a distinguished supporter of the turf,* particularly of the northern courses of York and Doncaster. Among the number of first-rate racers which he owned (too many for our limits to specify), we cannot omit the celebrated Orville. The list of eminent horses reared by the Earl of Derby is also great; but his Sir Peter Teazle, for which he had refused 10,000 guineas, is alone sufficient to perpetuate his lordship's fame as a breeder. The late Duke of Dorset likewise joined in himself the qualities

of an admirable judge of a race-horse, with a politic method of making his engagements. When he was Lord Sackville, he was probably the best gentleman *jockey* on the turf, in which character he often officiated at Bibury for his majesty King George the Fourth. The Duke of Grafton was also a well known patron of racing, and always possessed an excellent stud, which he managed with such judgment as to be a great gainer by his engagements, when thousands of reputed judges were losers. He was a winner of the Derby stakes at least once, and of the Oaks six or seven times; besides being in for very many of the best pickings at Newmarket. It would appear invidious, even in this slight sketch, to omit the names of the Duke of Portland, Lord Exeter, the Earls of Egremont, Burlington, Jersey, Orford, Chesterfield, Sefton, and last, but not least, Earl Grosvenor. Lord Egremont especially deserves mention, and also General Grosvenor. Some of these although gone to their long homes, yet live in our memories and regrets. Our limits have not allowed us to do more than to notice the names of some, and to trace the mere outline of the characters of others, who grace the page of sporting history; but we would refer the reader for further information to the masterly article in the *Quarterly Review*, already quoted. to which it will be evident we ourselves are much indebted; and if the eminent writer of it stands accused of some few errors in his statements, how shall we hope to escape. Take it for all in all, no such comprehensive account of the statistics of racing had hitherto appeared as that to which we allude, and to which we would direct the reader's attention.

847. *Of the public racing men of his day,* Nimrod draws the following lively picture:— "Of Messrs. Crockford, Gully, Ridsdale, Sadler, the Chifneys, &c., we need not say much, their deeds being almost daily before us. But, looking at the extraordinary results of these men's deeds, who is there that will not admit racing to be the best trade going? Talk of studs, talk of winnings, talk of racing establishments — our Graftons, Richmonds, Portlands, and Clevelands, with all their 'means and pliances to boot,' are but the beings of a summer's day when compared with those illustrious personages, and their various transactions and doings on the turf. Here is a small retail tradesman, dealing in a very perishable commodity, become our modern Crœsus in a few years, and proprietor of several of the finest houses in England! Behold the champion of the boxing ring, the champion of the turf, the proprietor of a noble domain, an honourable member of the Reformed Parliament, all in the person of a Bristol butcher! Turn to a great proprietor of coal mines, the owner of the best stud in England, one who gives 3,000 guineas for a horse, in the comely form of a Yorkshire footman! We have a quondam Oxford livery-stable keeper, with a dozen or more race-horses in his stalls, and those of the very best stamp, and such as few country gentlemen, or indeed any others, have a chance to contend with. By their father's account of them (see *Genius Genuine*, by the late Sam. Chifney), the two Messrs. Chifney were stable-boys to Earl Grosvenor at 8 guineas a-year and a stable-suit. They are now owners of nearly the best horses, and, save Mr. Crockford's, quite the best houses in their native town. There is the son of the ostler of the Black Swan, at York, betting his thousands on the heath, his neckerchief secured by a diamond pin. Then, to crown all, there is Squire Beardsworth, of Birmingham, with his seventeen race-horses, and his crimson liveries, in the same loyal, but dirty, town, in which he once drove a hackney coach. Taking for granted that all this is done honestly, why should we despair of having the gratification to see the worthy little devil who trots with this sheet to the printer's, appear some fine morning on Newmarket heath with his seventeen race-horses, his crimson liveries, and his diamond pin?" (*Loc. cit.* p. 429.) The very names of most of these men suffice to show that racing is, and has long been, a speculation of loss and gain. Improvement in the breed of horses is mainly lost sight of; but fortunate is he who can meet with one that can run fast enough to carry away the money of his owner's antagonist, particularly when his speed has remained unrevealed to all the world but such owner and his trusty trial groom. Neither is amusement the object of the great majority of turf frequenters; they go to the course as merchants go to the exchange, and many of them interest themselves no more about the objects around them than the others do about the stone figures which embellish the niches of this celebrated quadrangle. Speculation is the object of both, and the transfer of pounds, shillings, and pence equally absorbs the one and the other. We shall have occasion, when we treat of racing as a speculative concern, again to notice these eminent turf characters, and the means by which their vast fortunes were gained.

CHAP. II.

THE NATURAL HISTORY OF THE HORSE.

848. *The early history of the horse is involved in so much obscurity* as to leave us in uncertainty relative to his pristine form, qualities, and first location. It is true we have some accounts of congregated multitudes of horses, which have been considered as *indigenæ*, but many of these we know to be descended from such as have once been domesticated; and

when we consider the surprising changes which are operated on animal bodies by the agencies of temperature, food, and discipline, we are at a loss to satisfy ourselves as to the true characters of the original type.

Sect. I. *The History of the Horse of Early Times.*

849. *Numerous and indeed conflicting* have been the opinions of the most learned of our naturalists as to how nearly the horse genus approximates to other animals, or they to him. Linnæus placed him in the order *Belluæ;* Cuvier at first assigned him and his congeners to a separate order termed *Solidungulæ*, but afterwards included him in the *Pachydermata.* Deep has been the research, and abstruse the study, of many authors on this subject — one most interesting to the naturalist; but as we do not consider lengthened quotation from the opinions of different authors on this head necessary to the present work, we abstain from making such; for interesting though it might be to decide how far the ramifications of the genus of the horse extend, it is of far greater import to science than to the interest of the generality of mankind. The sportsman who holds the ass, zebra, quagga, and even mule, in sovereign contempt, if compared with his favourite, the horse, could hardly be expected to perceive any affinity to him in animals much further removed, in point of form, from his general appearance. However much certain anatomical peculiarities might warrant the idea with the scientific, we allow that where the distinctive characteristic of the hoof does not exist, we consider any proximity to the horse to be little obvious.

850. *The several members of the equine family* are the horse, *E. Caballus;* the ass, *E. Asinus;* the quagga, *E. Quagga;* the zebra, *E. Zebra;* the dziggtai, *E. Hemionus;* and the daw, *E. Montanus.* (On the dziggtai, or Tartary horse, see Mr. Swainson, in *Lardner's Cyclopædia*, vol. lxxii. p. 184.) The generic characters of this group consist, first, in having the phalangeal portions, which form the toes and fingers of other quadrupeds, united into a single finger and toe (with rudiments only of two additamentary ones) to each extremity, which is surrounded with a firm, but elastic, nail or hoof; secondly, in the number and nature of the teeth, of which there are six indented incisors or nippers, above and below; two canine teeth, tusks, or tushes, to each jaw, but common to the male only; and twelve molar or grinding teeth, above and below, with indented coronary surfaces. These dental masses fill up the branches or jaws, as we shall take further occasion to notice.

851. *The specific characters of the horse* are such as elevate him greatly above the other members of his family. His flowing mane and tail add a superior dignity to his form and carriage; while, in his size and the symmetry of his general figure, he has no competitor amongst them. Nor do we fear the subjecting ourselves to any accusation on the score of partiality, if we rank him (taking all his attributes into consideration) as by far the most noble and perfect of all quadrupeds. We allow to others all the merit of some qualifications they possess in greater perfection. The elephant, rhinoceros, and many others, exceed him in bodily strength; and the first mentioned animal has given instances of what may be termed intellect that the horse does not possess, or which at least have rarely, if ever, been shown by him. All the feline race greatly exceed him in agility; and with the generality of horses, the deer, greyhound, and hare exceed him in speed. The racehorse, indeed, is perhaps the fleetest animal we know of. The dog exceeds him in general, natural, and acquired sagacity; though we must not give credit to all classes of dogs for such decided superiority of this endowment: for instance, the greyhound, Italian do., and the pug. That the dog generally shows greater attachment to man, we allow; and his education and domestic association greatly conduce to this; but for combination of noble qualities, the horse ranks above all animals known to man. Among profane writers, also, the horse has always met with eulogists. Their poets have exhausted their stores in his praise, and their prose writers have embellished his history with all the beauties of language. Job, one of the most ancient of the inspired writers, has dwelt on his qualities in all the figurative and expressive language of the East. The portrait of Jupiter, by Mr. Gerrard (*fig.* 142.) is well calculated to illustrate the prophet's sublime description. The kings and princes of former times identified themselves so much with this noble animal, as to think it an honour to be called *Ἱπποδαμος*, or horsebreaker. Ovid places him in elysium; and Virgil's animated descriptions of his qualities are familiar to the classic scholar.

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JUPITER.

852. *The horse is considered to have been originally native to what is called the Old World,* and by the industry of man to have been planted in the New. There are, however, some who consider the horse indigenous to most countries of the globe. Without stopping to

examine this point, we shall consider the varieties of the horse to be derived from one common stock, and that the vast disproportion between their several sizes and characters is the result of accidental circumstances, as geographical distribution, peculiarity of food, varieties in habits, &c. Certain it is that of different species which belong to this genus, some appear to be strictly aboriginal to the elevated plains of Central Asia, while others own the southern parts of Africa as their hereditary station.

853. *Whether the horse was first planted in Asia or Africa*, or in other words, whether it was first known in Arabia or Egypt, is a matter in dispute between those who favour the opinion of an individual type. The author of the *History of the Horse* in the *Farmer's Series*, asserts that, "From Egypt the use of the horse was propagated to other and distant lands; and, probably, the horse himself was first transmitted from Egypt to several countries; and such alteration as may have taken place in his original form, probably arises from climate and treatment. The truth probably is, that the Thessalians, the first and most expert of the Grecian horsemen, and likewise the inhabitants of Argos and of Athens, were colonists from Egypt. The Bible appears to imply that Arabia, by whose breed of horses those of other countries have been so much improved, was not the native place of the horse. Six hundred years after the time just referred to, Arabia, according to Holy Writ, had no horses. Solomon imported spices, gold, and silver from Arabia, but his horses he procured from Egypt." (2 *Chron.* i. 17.; ix. 14.)

854. *Arabia, nevertheless, is maintained by some to have given origin to the horse*, and these persons assert that from thence Egypt, and other approximating countries, were supplied. A very ingenious writer in *The Veterinarian* (Mr. Karkeek of Truro) advocates the claims of Arabia to this honour; and, in answer to the author of the *Farmer's Series*, replies "Arabia possessed horses in great numbers at a very early period of the world, and has, we consider, stronger claims to be entitled the primeval seat of those animals than any other country." Mr. K. also grounds his probability of this origin from the extreme antiquity of the Arabs, whom he regards as the most ancient people in the world, and at the same time among the most rich and powerful of early times, notwithstanding their present debasement. He further adds, —"Almost every traveller, or naturalist, who has written on the subject, gives Arabia the credit of being the genuine and original country of the horse." "It is a climate," says Gibbon, "the most propitious, not indeed to the size, but to the spirit and swiftness of that generous animal." Buffon, D'Arvieux, and Niebuhr, coincide in this opinion: the last-named author, the most judicious of any of our Syrian travellers, says, "Some (animals) appear to be originally natives of the country (Arabia), for they are not common through the other regions of the east; they retain their primary instincts in higher perfection, and are more eminently distinguished by strength and beauty here than elsewhere; such are the horse, the ass, and the camel." Mr. Pennant appears likewise of a similar opinion, as we may judge by an observation in his *Zoology*,—"That with some authors Ethiopia has the credit of having originally furnished Arabia with its fine breed of horses; but we," he says, "believe the reverse: they were introduced into that empire by the Arabian princes, whose lineage to this day fills the throne." To us, notwithstanding these authorities, it appears difficult to reconcile the plenitude of horses in Arabia with the scriptural account that, when Saul, who became king of Israel, B. C. 1095, made successful war against this very country, his plunder consisted of camels, oxen, sheep, and asses only, no mention being made of horses.

855. *Cuvier is silent on the original planting of the horse*, but Mr. Griffith, the ingenious translator and commentator of his *Animal Kingdom*, is of opinion that the horse was aboriginal in Asia, and particularly in Great Tartary. Almost every country has, however, its peculiar breed of horses, so distinct as to be easily recognisable: the chief exception is, that no animals of the equine race are native in the islands of the southern ocean. Pennant notices that vast herds are to be met with around the lake Aral, and in Siberia, as well as in the Mongolian deserts, and among the Khalkas, to the north-west of China. In the plains which border the river Don, there are also numerous herds of horses, which live and propagate in a wild state. These, however, are tolerably well known to have been originally derived from Russian cavalry, which had been turned loose for want of forage at the siege of Azov. The wild horses of America are also, without doubt, descended from such as were introduced by the Spaniards. "Vast troops," says Mr. Griffith, "of wild horses are found in the immense and thinly-inhabited plains, which extend from the shores of La Plata to the country of the Patagonians. Each inhabits a canton or district peculiar to itself, which it defends from all foreign intrusion, as its own especial property; nor will it ever abandon it, except when compelled by hunger, or some enemy of very superior strength. These wild horses march in serried columns, and when disturbed by any object, they approach it within a certain distance, having the strongest individuals at their head, and examine it attentively, describing one or many circles around it. If it does not appear dangerous, they approach with precaution; but if the chief recognise any danger, and give an example of flight, the entire troop instantly follow. The instinct which induces horses thus to congregate renders it very dangerous for travellers to fall in with these

wild troops; for it exposes them to the liability of losing their own horses for ever. The moment these hordes perceive any domestic horses, they call to them with the utmost eagerness, approaching as near them as prudence will permit. If the others are not guarded with the utmost care, they will take to their heels, and it is utterly vain to attempt to catch them again. A curious fact, if true, is, that these wild horses can be tamed and brought back to a domestic state with great facility, even though they are adult when caught. The South Americans are extremely dexterous in taking them with long cords, or, as they are called, *lassos*, which they throw with wonderful address and precision, and thus entwine in a noose the animals which they are desirous of possessing. Those of the wild studs are watched by men in the districts they inhabit, appointed for this express purpose, and who have no other occupation. They are mounted on some of those horses which have been already tamed, and they reconduct the troop to the lands of the proprietor whenever they happen to wander. These men are also employed to catch them when there is a necessity. They mount on horseback; summon the troop to a quarter from which it cannot escape; mingle among them, provided with the instrument above mentioned; they fling it on the neck of the animal, which, finding itself caught, fastens the knot still tighter by its endeavours to break loose. He falls at last, when respiration fails: the men throw themselves upon him, bind him, and put a strong halter round his neck." (*Animal Kingdom*, vol. iii. p. 441.)

856. *The size and figure of the wild horse*, wherever he is now found, are not those of the cultivated races of our own times; neither are they altogether those which their primogenitors may be supposed to have presented. After the horse escapes from the culture of man, he lessens in size in each succeeding generation; he also loses the elegance, lightness, and grace, which had before characterised him. This result of returning to a wild state being well established, would lead to a conclusion that the original type was of a medium size, with a coarser head, and with limbs somewhat stouter than are seen in the domestic breeds. The mane, tail, and coat, were undoubtedly long, as guards to the person. Such form would however vary according to the locality it occupied, and thus the indigenous horse of every country presents some specialty of conformation." Malte Brun is however of opinion, that there were on the Old Continent at least three original races of horses. The first he supposes to have come from Great Bucharia, Persia, or Asia Minor; the second, the Mongolian or Scythian breed, distinguished, as he says, by their dwarfish size, appears to have originated in the steppes of Kirguises; the third is the Arabian courser. The varieties exhibited in these different kinds are attributable to climate alone. It seems almost certain that there are no wild horses in Arabia; and Mr. Bruce says he never heard any person of veracity assert they had seen them." (*Brown, on Horses*, p. 37.)

857. *The early accounts of the horse* are so obscured by poetic fiction, that we can pretend to little certainty in our details previous to the advanced period of the Grecian history. Some prior facts, however, appear to be clearly established; such as, that the Egyptians were very early in possession of the horse, and that, at a remote period even, his close domestication and culture had advanced greatly. We have every reason to believe also, that when the Egyptians invaded Greece, by making Thessaly the principal scene of their conquest, they planted this animal in a situation so favourable to his future improvement, that the Thessalians became celebrated as equestrians, as well as for the excellence of their breed of horses. That disputed character, Ericthonius, by some esteemed a king, and by others a celebrated horse-breaker, appears to have been a Thessalian, to whom it was fashionable, in the epic poems of those times, to attribute the first adaptation of the horse to charioteering. Thus Virgil, as translated by Dryden, is made to say, —

> " Bold Ericthonius was the first who join'd
> Four horses for the rapid race design'd,
> And o'er the dusty wheels presiding sat," &c. &c.

Mr. Bracy Clark, who is well known to have spent much of his time in literary research, thus remarks on this questionable character: — " Those have erred widely who have derived this name from the Greek language, since the Egyptian appears to be the natural clue to it. *Erictho*, the ancient Egyptian word, of which the Greeks made *Erictheus* and *Ericthonius*, as of Apollo they made Apollonius, is composed of two parts, *eri*, *facere*, *vel rei alicujus auctorem esse*, and *chto* or *ichto*, *equus*, the horse, and hence *Erictho*, *autor equitatus et equorum*, the occupation constantly ascribed to Ericthonius, as in the preceding lines of Virgil. Aristides and others confirm this by observing, that he first tamed the horse, and then applied him to the chariot. It was on this account that he was placed among the constellations under the name of *Auriga*, *Agitator*, or *Heniochus*, the driver or charioteer.

858. *Chiron*, poetically surnamed Centaur, or half man and half horse, because his medical skill was equally directed to human and brute medicine, was, it is conjectured, a Thessalian. Æsculapius, by whom the practice of human medicine is especially considered to have been first based on solid principles, was his pupil, as was likewise Podalirius and Machaon. The inhabitants of Thessaly appear to have devoted themselves so assiduously to the care and culture of the horse, that they came, by way of distinction, to be called Centaurs. Thus, Sir Isaac Newton writes,—" The war between the Lapithæ and the people of Thessaly, called Centaurs."

859. *In following the horse into Greece*, his history paces on more certain grounds; for Xenophon, at once a warrior and philosopher of great renown, has deigned to enter on the subject. To him we owe the best treatise on the management of that animal which ancient times produced. By this we learn that his culture and treatment were rapidly progressing; indeed, many of the remarks made, and the rules then laid down, would not disgrace the writings of more modern times. He also left a *Treatise on Dogs and Hunting*, which was long the *vademecum* of the sportsman of those days.

860. *The decline of the Grecian empire* gave to Rome, for a long succeeding period, the future culture of this animal, and the fame of his glory. The Romans improved on all the equestrian arts of the Grecians, and extended, by their writings, these improvements to other countries. Numerous works of this nature are known to have been so dispersed; some of which have outlived the ravages of the dark ages and the destruction of the Alexandrian fire. The most eminent Roman authors on rustic affairs invariably introduced incidental notices regarding the diseases of the horse, and the remedies to be applied. Such are seen in the works of Marcus Portius Cato and M. Terentius Varro. The veterinary works of Cornelius Celsus, we are informed, were very valuable; but they appear most of them to have been lost: those of Columella consisted of twelve small books, six of which treat on domestic animals: Palladius is another Roman rustic writer who notices the treatment of the horse, both medical and non-medical. In the fourth century, Vegetius flourished, whose work being wholly confined to veterinary subjects, renders it of paramount interest and importance. This celebrated author has pursued a very excellent method of avoiding the omission of any disease then known, by commencing his medical detail of the head, and proceeding regularly to the feet.

861. "*Vegetius*," says Mr. Bracy Clarke, "divides the horses of Rome into three classes: for war, the circus, and the saddle. For war," he observes, "the Huns, Turingian, Burgundian, and Frigiscian horses excel; next, the Epirotic, Samarican, and Dalmatian: for chariots, the Cappadocian. In the circus, the Spanish horse excels all others, and also the Sicilian, although the African horses of Spanish blood are the swiftest of any. For the saddle, above all, the Persian horses, being the easiest in carriage, and most soft in their step; afterwards come the Armenian and Sappharenean; nor should the Epirotian or Sicilian horses be despised, though not equal to them in their deportment, manner, and form." (P. 27.) Virgil, who flourished during the usurpation of Julius Cæsar, although the most celebrated writer of his day on rural affairs, confines his observations on the horse principally to his agricultural uses.

SECT. II. *The Modern History of the Horse.*

862. *There are few parts of the world that do not now possess horses*, except such as are beyond the limits of his physical powers of maintaining life. We propose to offer an outline of the principal varieties, as they exist in the four quarters of the globe, commencing with Africa, without any intention of mooting the question of the immediate quarter which gave birth to the original, but because it first introduces to our notice that breed to which we owe our earliest, if not our most important, improvements in what may be called blood-breeding.

SECT. III. *The Horses of Africa.*

863. *The varieties of the horse which occupy this quarter of the globe are*, without doubt, numerous, and exhibit distinctive characters in form, size, and qualities, as will be glanced at in our detail. We shall commence with that variety which derives its name from Barbary, a breed to which we owe much.

SUBSECT. 1. *The Barbs of Africa.*

864. *The barb, one of the most celebrated of the African racers*, is to be met with throughout Barbary, Morocco, Fez, Tripoli, and Bornou. It seldom exceeds fourteen hands and a half in height; the countenance is usually indicative of its spirit, and the facial line, in direct contradiction to that of the Arabian, is often slightly rounded; the eyes are prominent; the ears, though frequently small and pointed, are occasionally rather long and drooping; the neck is of sufficient length; the crest is generally fine and not overladen with mane; the shoulders are flat and oblique; the withers prominent, and the chest almost invariably deep; the back is usually straight, the carcass moderately rounded only, the croup long, and the tail placed rather high; the arms and thighs being commonly muscular and strongly marked; the knee and hock are broad and low placed, the back sinews singularly distinct and well marked from the knee downwards; the pasterns rather long, and the feet firm, and but moderately open.

865. *The barb requires more excitement to call out his powers than the Arabian*, but when sufficiently stimulated, his qualities of speed and endurance render him a powerful antagonist, while the superior strength of his fore-hand enables him to carry the greater weight of the two. The horses of Bornou, we are informed by Mr. Tully, are also excellent, and unite all the valuable properties of the barb and Arabian. Those of Morocco are likewise good; but those of the southern and western parts of Africa are of an inferior kind, being small, weak, and ill-shaped.

866. *The Godolphin Barb*, which was imported from France about five and twenty years after the Darley Arabian, was one of those most worthy of note. He was of great size as a barb, being near, if not quite, fifteen hands high, with corresponding strength and great symmetry of shape, with the exception of his crest, which rose to a degree of monstrosity (*fig.* 143.). This horse was long considered as an Arabian, and to this day is so called; but, independently of his figure, which bears the barb stamp, it is considered certain that he was imported into France direct from Barbary. It is also related of him, although we cannot credit the account, so little was he valued in France, that he was there actually employed in the drudgery of drawing a cart in the streets of Paris. Be that as it may, it is certain he was brought into England by Mr. Coke, who gave him to Mr. Williams, proprietor of the St. James's Coffee-house, who afterwards presented him to the Earl of Godolphin. In 1731 he was teaser to Hobgoblin, but that horse refusing to cover Roxana, she was put to the Godolphin Barb, and produced Lath, one of the best racers of his day, and considered by the judges of that time to be superior to any that had appeared at Newmarket for many years previous, Childers only excepted. It is also a remarkable fact, that there is at this period hardly one first-rate horse on the turf which has not a cross of the Godolphin blood in him. There is an original portrait of this remarkable horse by Seymour, in the collection of the Marquis of Cholmondeley, at Houghton Hall, Norfolk, and another picture of him and his favourite cat in the library of Gog-Magog, in Cambridge, where he died in December 1753, aged twenty-nine, the property of Lord Godolphin. It appears that the enormous crest which the figure displays was correctly portrayed by Stubbs; and further, that the same peculiarity has been seen in some others of this most noble breed of Barbary. The Duke of Portland is said to have been once in possession of a horse with a crest equally elevated. It is worthy of note, likewise, that between him and the cat seen in his portrait there existed a warm attachment for many years, which on the part of poor puss must have been most ardent, for after the death of the barb, she was never herself again, but pined away, and evidently died of grief for his loss. Hear this ye stable men, and never more employ your terriers in tearing out the vitals of an animal that can be thus faithful and devoted! The Godolphin Barb appears to have rivalled the Darley Arabian in the importance of his get. He was the sire of Lath, Cade, Babraham, Regulus, Bajazet, Tarquin, Dormouse, Sultan, Blank, Dismal, and many other horses of racing note; and without doubt the English blood-breeds were more indebted to the Darley Arabian and the Godolphin Barb, than to all the other eastern horses which had previously entered the country.

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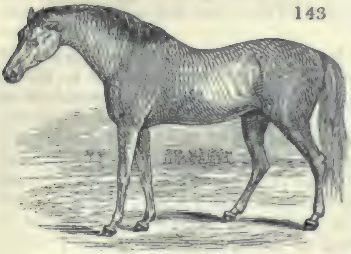

THE GODOLPHIN BARB.

867. *Among other Barbs of some notoriety*, introduced in the eighteenth century, we may mention the Thoulouse, the Curwen Bay, Old Greyhound, St. Victor's, Tarran's Black, Hutton's Bay, Cole's Bay, and Compton's Barb. The Moors are violent but not systematic trainers of their horses, appearing to be totally unacquainted with lunging in the ring, or even the restraint of the cavesson: on the contrary, they are tamed by subjecting them to excessive fatigue, by long journeys over mountainous countries. They are however in the end well disciplined, apt in battle, and they also make showy riding-horses for the Moorish gentry.

868. *The Nubian and the Dongola breeds are of a very large size*, particularly the latter. Bosman affirms that they are likewise symmetrical in shape, and perfect in their action. They occasionally fetch monstrous prices; one was sold at Grand Cairo for a sum equal to 1000*l*. The present race of Egyptian horses are very inferior to those of either Barbary or Arabia; and it is even said that the great men of Egypt, instead of making use of their own breeds, supply themselves from those countries.

SECT. IV. *The Horses of Asia.*

869. *The horses of this quarter of the globe* vary much from the extent and diversity which mark its vast boundaries, presenting as they do the extremes of heat and cold, and of sterility and fertility. Yielding to these variable agencies, the Asiatic horses of different localities of necessity differ much in size, form, and qualities; nevertheless, it is to this quarter that we owe the progressive improvement of our own breeds to their present state of unrivalled excellence.

SUBSECT. 1. *The Arabian.*

870. *The Arabian is the most celebrated of the Asiatic horses*, both for figure and action. He differs from the barb principally in greater lightness of frame, and is thereby fitted for more rapid progression; and if he be somewhat less bony and muscular, he appears to make

up the deficiency by an increase of fire and spirit. It is however to the union of these qualities, by ingrafting the Arab on the barb stock, that we owe that decided superiority over all the horses of the world, which characterises what is known as the *English thoroughbred horse.* The head of the Arabian is even more expressive, and somewhat squarer than that of the barb; his facial line is often somewhat concave instead of convex, as we have already observed in many barbs; his skin is also finer, his withers are equally high, and his shoulders are as oblique, but they are thin in a majority of instances, and less muscular than those of most barbs. His chest is deep but flat, and his carcass is apt to be somewhat small. The Arabian's croup, however, is almost invariably long and fine; and the setting of his tail nearly on the line of the back. It must at the same time be taken into the account, that no general description of form will tally with every Arab that we meet with, however well authenticated his Arabian origin may be; for although the majority will present some characters in common, yet sufficient variations will occur in the soil and nature of different parts of this extensive country, to diversify the external frame of its horses. The more arid soils will tend to contract the bulk, while the purity of the air, and the little resistance offered to quick progression, will give spirit to the mind of the animal, vigour and elasticity to his frame, and singular firmness to his feet. Of this kind was the celebrated white Arabian stallion, of which Buonaparte was so fond, that it was usually kept in the Jardin des Plantes, on which spot the author took the portrait represented by *fig.* 144. This horse, it is evident, was small; but it is otherwise with such as are bred where vegetation is more luxuriant and abundant from prevailing moisture. These will expand in bulk, and become more rotund, but will probably move with diminished rapidity. Notwithstanding what they lose in actual fleetness, they may gain in grandeur of appearance, and capability of bearing weight. It was thus with the Wellesley Arabian, one of the most majestic specimens of oriental breed that was ever imported; and if, in reality, he were a true Arabian, of which there is some doubt, his specialty of appearance, and particularly his expanded hoofs, could only be attributed to a particular locality of birthplace, and most probably a moist one. Experience teaches us, that spots which are only a moderate distance from each other may present very different quantities and qualities of herbage, and may also vary much in aridity and moisture, consequently, are likely to produce breeds very dissimilar. The Yorkshire wolds and the Lincolnshire fens are not widely separated, yet the indigenous horse of the one differs much from that of the other.

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BUONAPARTE'S ARABIAN CHARGER.

871. *The native Arabian horses are divided*, as we are told, into two distinct breeds, the Kadischi, or mixed, or unknown breed, and the Kochlani, Kohejle, or Kailhan, or pure unmixed breed; by which is understood horses whose pedigrees are known, as they report, for two thousand years; and which race, the Arabs aver, are traceable in a direct line to the vast studs of King Solomon. "Individuals of this breed," Mr. Griffith observes, "have been sold at such enormous prices as, without authentication, would appear almost incredible. The Arabs boast that these horses are capable of performing the most wonderful journeys, of sustaining the greatest fatigues, and passing entire days without nutriment; and of their impetuosity in attacking the enemy, and their fidelity and attachment to their masters, many marvellous tales are related." However, it must be taken into the account, that the extravagances of the Arabians on the subject of their horses know no bounds; and travellers have perpetuated so many of these equine wonders, that we are at a loss to distinguish between truth and fable. Thus, M. Rosetti says, the Arabians have five distinct breeds; and that some of these horses are so sensible as never to suffer themselves to be delivered up to a purchaser until the ceremony has been completed by the seller, of having received a little salt and a morsel of bread! We presume this breed must be somewhat like that sold weekly at Smithfield, where it is customary and almost imperative, to insure "good luck," that the seller should treat the buyer with something more potent and palatable than salt. We have heard of two of these chapmen, who invoked good luck by such potent libations to the jolly god, that they at length quarrelled on the subject of their several identities; the original seller fancying himself the buyer, and the real purchaser as stoutly maintaining that he was the seller. Some humane friend to the parties (it seems Smithfield abounds with such), by walking off with both the horse and the purchase-money, ended the dispute, which convinces us that their Bacchanalian patron must have been offended either by the scantiness or the ill use of their offerings. The most inferior horses of Arabia are known by the conventional term of Attechi, as owning no distinct pedigree whatever; but, on the contrary, as being the intermixtures of all the inferior varieties. A writer who appears to have some knowledge of the matter considers, that among the shades of difference which will exist even among the best breeds of Arabia, the

Montific is the most symmetric in its proportions, the Nedgedde is the largest, and the true Bedouin the most powerful.

872. *The Kochlani are principally reared by the Bedouin Arabs*, who devote almost their whole attention to the development and preservation of the qualities required to assist them in their wandering predatory life. Doomed to rove over a sterile country by necessity, as well as by habit; living by levying contributions on travellers, it becomes imperative on them that they breed, train, and habituate their horses to such a rate of speed as shall enable them either to overtake others, or to escape themselves from pursuit. In the vast tracts they traverse, it is absolutely necessary that their horses should be capable of enduring the longest marches with little, and often entirely without, food; and when we consider how soon, and how sensibly, our horses show the effects of privation, we cannot but admire the extent to which the Arabs have carried the physical powers, as well as the education, of their horses.

873. "*In the breeding of the Kochlani horses*," Mr. Griffith observes, "The Arabs use the utmost precaution to avoid being deceived on the point of genealogy. The mares are covered in the presence of a witness, who remains near them twenty days, to make sure that they are not dishonoured by any vulgar stallion. The same witness must also be present at the accouchement; and a certificate of the legitimate birth of the colt is made out within the seven first days subsequent to that event. Whenever all the prescribed formalities have not been rigorously performed, the colt is considered to be *Kadischi*; and whatever advantages he may possess, his owner is a serious loser in consequence of the non-authentication of his birth. These precautions prove how amazingly jealous the Arabs are of preserving their better race of horses in the most untainted purity of descent." Stallions of the Kochlani breed may be obtained, though it must be at very high prices. Mares of this breed, on the contrary, can only be procured by fraud, excessive bribery, or some extraordinary chance. It is to the mare that the transmission of the purity of the race is consigned; and it is from her that the pedigree of the progeny is traced. Should a mare, by accident or design, breed by a Kadischi stallion, the colt ranks only as a Kadischi: if, on the contrary, a Kadischi horse should cover a Kochlani mare, the produce bears the rank of the mother. This opinion of the superior power of the mare, in stamping the form and qualities of the produce in this self-taught people, might with propriety be attended to and observed in our breeding establishments. It must be remembered that the whole powers of this rude people being directed to one object, enables them to mark with precision the results of the various operations connected with the improvements of their horses with an accuracy that can hardly be expected of us, whose observations are liable to be distracted by so many other circumstances; and most certain it is that we must look well to the sire also.

874. *The docility and good temper of the Arabian* is much insisted on by many writers, and the account rendered by the popular *Treatise on the Horse*, in the *Library of Useful Knowledge*, will tend to confirm such a character in the opinion of the public. Major Denham's account of one, whose loss he mourns with unfeigned regret, tends likewise to this conclusion. " There are," observes the major, " a few situations in a man's life in which losses of this nature are felt most keenly, and this was one of them. It was not grief, but it was something very nearly approaching it; it was several days before I could get over the loss. Let it, however, be remembered, that the poor animal had been my support and comfort, — nay, I may say, companion — through many a dreary day and night; had endured both hunger and thirst in my service; and was so docile that he would stand still for hours in the desert while I slept between his legs, his body affording me the only shelter that could be obtained from the powerful influence of the noon-day sun; he was yet the fleetest of the fleet, and ever foremost in the chase." Bishop Heber also, under the same impression, in his *Indian Tour* says, " My morning rides are very pleasant. My horse is a nice, quiet, good-tempered little Arab, who is so fearless, that he goes without starting close to an elephant; and so gentle and docile, that he eats bread out of my hand, and has almost as much attachment and coaxing ways as a dog. This seems the general character of the Arab horses, to judge from what I have seen in this country. It is not the fiery dashing animal I had supposed, but with more rationality about him, and more apparent confidence in his rider, than the majority of English horses." We have no inclination to dispute these facts. Some mild and gentle Arabian horses, without doubt, are to be found. With the mares tractability may be more general, from the closeness of their domestication; and it is from them probably that this general docility and tractability of the Arabian character is derived; for we think it cannot be denied, that the majority of Arabian stallions brought to this country have been fiery and impatient; some of them have proved extremely vicious. Indeed, we are assured from the most authentic information, that the Arabian horses imported into India are usually vicious. The Chillaby Arab, the property of Mr. Jennings, imported into England, was peculiarly so; which probably occasioned his passing into the hands of Hughes, the riding-master; whose discipline, however, so far conquered his savage nature, that he was afterwards exhibited at the Circus in the equestrian spectacles of that theatre. Our illustration of the Arabian mare (*fig.* 145.) is a portrait of the beautiful white one presented to his late majesty, William IV., by the Imaum of Muscat.

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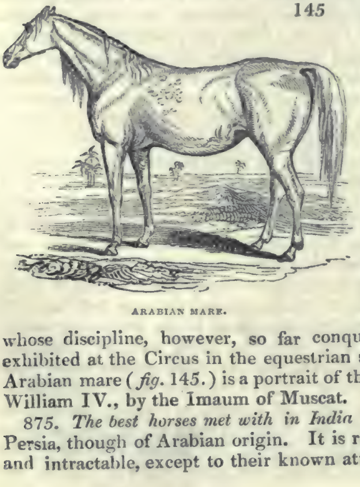

ARABIAN MARE.

875. *The best horses met with in India* are most of them, it is said, derived direct from Persia, though of Arabian origin. It is remarkable that these also are in most cases vicious and intractable, except to their known attendants, to whom, notwithstanding, they yield an

obedience, the very reverse of the savage nature they display to others. A general officer of the Royal Artillery related to us an anecdote of an Arabian, for which he had given a very large sum during his military service in India. This horse was always forced to be held by two coolies for his master to mount him; and it was always necessary also that the coolie, to which the horse was most attached, should be present at his dismounting, to prevent his being attacked by the horse. One day, the general having prolonged his ride beyond his accustomed hour, on his arrival at home thoughtlessly dismounted, and ran up stairs to the drawing-room, without waiting for the coolie. The consequence was, that he had not entered the room many moments before the horse made his appearance, but evidently without any vicious intent, for he immediately on seeing his master knuckered with pleasure. Of course, with a horse of such value, it was a subject of consideration how he was to be got down again. However, when the coolie arrived, he appeared to make light of the matter, and, taking the horse by his bridle, with little trouble and no ill consequence, safely led him down the stairs; and from that time, by some strange caprice, the animal showed as much personal attachment to his master as to the favourite coolie.

876. *The treatment which the Arabian horses receive* presents a singular mixture of kindness and barbarity. "Having no other dwelling but a tent," says Bewick, "the Arabian and his horse live upon the most equal terms. His wife and family, his mare and her foal, generally lie indiscriminately together; whilst the little children frequently climb without fear upon the body of the inoffensive animal, which permits them to play with and caress it without injury. The Arabs, it is said, never ill-treat their horses; they, on the contrary, speak to, and seem to hold friendly intercourse with them; they hardly ever whip them, and seldom, but in cases of necessity, make use of the spur. Listen, our countrymen, and do ye likewise! The agility of these horses in leaping is said to be wonderful, and if the rider happen to fall, they are so tractable as to stop instantly in the midst of the most rapid career." The inconsistency of this attachment is, however, exemplified in other parts of the conduct of their masters towards them, which appears to us cruel in the extreme, although without doubt thought to be essential to their education. "The severest treatment which the English race-horse endures, is gentleness compared with the trial of the young Arabian. Probably the filly has never before been mounted; she is led out; her owner springs on her back, and, as it is said, goads her over the sand and rocks of the desert, at full speed, for fifty or sixty miles, without one moment's respite. She is then forced, steaming and panting, into water deep enough for her to swim. If, immediately after this, she will eat as if nothing had occurred, her character is established, and she is acknowledged to be a genuine descendant of the *Kochlani* breed." (*Library of Useful Knowledge*, art. Horse.) We must remember, however, that most of these extraordinary accounts are furnished by Arabs themselves.

877. *The mounting of the Arabian*, we are informed by Captain Lyon, takes place at a year old; the owners never castrate their horses: they esteem a large belly as a mark of great beauty; but they object to chesnut horses, because they have soft, tender feet. Captain Lyon further observes, that the credulity and superstition of these people force them to reject white-legged horses, however well bred and well shaped, if the white markings follow a particular distribution, as being ill-omened: on the contrary, white legs, with a different distribution of the markings, are sought for, as carrying about them omens of good fortune.

878. *Of our obligations to the Arabian for the improvement of the British breed of horses*, there can be no doubt; but it must at the same time be acknowledged, that not only are some Arabians defective in speed, but that the progeny direct from the Arabian stock does not always answer the expectations raised of it. On the contrary, many experienced breeders maintain, that the immediate produce of an Arab horse and an English mare is seldom of a "high form." It must also be taken into the consideration, as before observed, that in a country which is upwards of eighteen hundred miles in length, there must be such variations of climate and soil as to influence the breeds very materially; and that such is the case, we are assured by all travellers. In the district which surrounds Mocha, the Arab horse is thick and almost punchy; and consequently, from such a source, but little improvement to our racing stock could be expected. We are likewise too often left at the mercy of an interested merchant in our purchases of Arabians, and the original buyers are themselves also liable to be the victims of fraud, by the production of forged attestations of qualities and performances, and fictitious pedigrees. It is more than probable that it is to some of these sources of error, that we are to attribute the ill fame which the Arabian blood fell into from the failure in the racing qualities of the stock got by Markham's unfortunate purchase. We are warranted in this conclusion by the fact, that subsequent importations, and a more general and continued trial of this blood, has fully established its pre-eminence, as well as the principal share that it has had in the production of a breed unrivalled throughout the world.

879. *Of the celebrated Arabians* which have been introduced into this country, our limits will allow us to do little more than notice some of their names. We have already alluded to that introduced into Scotland by King Alexander, which is supposed to have been the first that entered Britain, as that purchased by Markham, in the reign of James the First, is considered the first which had appeared in England. We are inclined on this subject to pay some attention to a remark made in the *Turf Expositor*, which runs thus: — "As to the wonder expressed, that Arabian horses should not have been brought earlier into England, it is merely perhaps that the name was omitted, as Arabs were generally sold in those markets of the Levant where horses were purchased for Europe; and there can be but little doubt, that the Arabian breed was dispersed throughout Europe centuries previous to the reign of James." The Darley Arabian, we believe, followed Markham's; and fortunately his progeny so redeemed the credit of this blood, that Arabian horses were after-

wards zealously sought for. This celebrated horse was the sire of Almanza, Brisk, Aleppo, and others; but, above all, he was the sire of Childers, whose descendants fully maintained the credit of the stock. The Wellesley Arabian, however, if really of Arab origin, must have been native to some of the moister localities, where an excess of herbage existed. His figure, as may be seen by the portraits extant, was more bulky, and his hoofs were also more expanded than those of the genuine Arabian usually are. Neither were his own performances, nor the performances of his produce, such as to warrant the supposition, that he was an Arabian of the desert. Nevertheless, had he been stinted to strong bony mares, we should probably have obtained a race of the most magnificent chargers and blood carriage horses ever seen. The Alcock Arabian succeeded him, and, besides producing other good stock, he was the sire of Crab, the best horse of his day. We have also to notice Honeywood's Arabian, the Cullen, the Damascus, the Oglethorp, Lonsdale Bay, Wilson's Chesnut, the celebrated Newcomb Bay, Mountain Arabian, the Coombe, Bethell's, the Northumberland, Bell's, and the Brickfoot Arabian, as being all of them getters of stock which have signalised themselves. Notwithstanding the excellence of our own breeds, native Arabian horses are even yet occasionally imported and used as covering stallions; and there is also some reason to hope for a continuance of the custom; for, by so doing, we shall defeat the deteriorating agencies of our climate, if such really exist, in the compounded produce.

Subsect. 2. *The Horses of Persia.*

880. *These horses have been long celebrated for their excellence,* and to the mixture of them with our own, about the reign of Elizabeth, we are indebted for some of the earliest improvements of our breeds. Viewed as an object of early cultivation, the Persian horse is entitled to our particular attention, inasmuch as the most ancient records are full of his praise, and the histories of his country teem with accounts of the importance in which he was held both abroad and at home. Alexander the Great received a Persian horse as a present of the highest value; and the sacrifice of one of these horses to the Parthian gods was supposed more likely to insure their favour, and avert their anger, than any other offering. Sir Robert Ker Porter thus describes the horses of this country at the present day, and the sporting uses made of them: — "The Persian horses never exceed fourteen or fifteen and a half hands high, yet certainly, on the whole, are taller than the Arabs. Those of the desert and country about Hillah run very small, but are full of bone and of good speed." On the occasion of a royal race he tells us, "The rival horses were divided into three sets, in order to lengthen the amusement. They had been in training for several weeks, going over the ground very often during that time; and when I did see them, I found so much pains had been taken to sweat and reduce their weight, that their bones were nearly cutting the skin. The distance marked for the race was a stretch of four and twenty miles, and that his majesty might not have to wait when he had reached the field, the horses had set forward long before, by three divisions, from the starting point (a short interval of time passing between each set), so that they might begin to come in a few minutes after the king had taken his seat. The different divisions arrived in regular order at the goal, but all so fatigued and exhausted, that their former boasted fleetness hardly exceeded a moderate canter when they passed before the royal eyes."

881. *The Toorkoman or Khorasan breed of horses, obtained from South Tartary,* are also in very high estimation, as well among the Persians as neighbouring nations. According to Captain Fraser's account, however, though large, they are not so well shaped as their reputation would indicate. In his *Journey to Khorasan* he describes them as "Having bodies long in proportion to their bulk; they are not well ribbed up; they are also long on the legs, deficient in muscle, falling off below the knee; narrow chested; long necked; head large, uncouth, and seldom well put on. Such was the impression I received from the first sight of them, and it was not for some time that their superior valuable qualities were apparent to me."

Subsect. 3. *The Tartar and Calmuck Horses.*

882. "*The horses of Central Asia, and some part of European Russia,* are little removed from a wild state: they are small and unsightly, but are capable of supporting the longest journey, and most rapid pace, on the scantiest fare. The foals, from the earliest period, are exposed to the inclemency of the weather, have little to eat, and follow their dams in the longest excursions, and therefore soon acquire a very great power of sustaining fatigue; indeed, all those met with must be hardy for another reason: the Tartars live much on the flesh of horses; and, consequently, those animals that are unable to support the labour of their frequent rapid emigrations are soon destroyed, and only the more vigorous preserved. The horses which range at large over the plains, are divided into herds; at the head of each herd are placed two or more stallions, who carefully prevent them from intermingling with each other; and it is rarely that a foal is lost. On the approach of a strange herd, the stallions drive their own into a close body, place themselves in front, and, if necessary, attack and drive off the others. As the stallion-foals grow up, they are driven away from the herd, and are seen straggling about at a distance, until they are strong enough to form herds of wild mares for themselves." (*Library of Useful Knowledge*, art. Horse.)

883. *The Turkish horse is without doubt descended from the Arabian,* but what intermixtures it may have received are not known to us. It is said to be longer in the body, and more elevated in its hind quarters, than the Arabian. Mr. Evelyn's description would however present this breed as faultless; and certain it is, that our own horses were greatly improved during the seventeenth and eighteenth centuries by an inter-breeding with them.

884. *The Byerly Turk was the sire of many excellent runners of early racing days.* The Darcey Yellow Turk, and the Darcey White Turk, produced also good stock. The Lister Turk, which was introduced during the reign of the second James, proved an excellent stallion, and horses of his get were deservedly in repute. The Helmsley, the Belgrade, the Selaby, the Strickland, Place's White, and the Holderness, are among the number of Turks to which we have obligations for the improvement of our native breed of horses.

885. *The present fashion of decrying the Arabian stock.* — Is it founded on fact or prejudice? We apprehend that the wonderful improvements of our own breed has had more to do with it than any demerits of the Arabian. It is true that our blood-horse is now unrivalled; but it should be remembered he owes as much of his excellence to the eastern blood which flows in his veins, as to the culture he has experienced. The Arab, on the contrary, is suffered to remain in his original state; and if in this country he cannot compete with our most reputed horses, it is not because he is deteriorated, but because the size of our horses gives them so much additional advantage. What the Arab racing qualities are, is exemplified by Captain Gwatkin, who, as superintendent of one of the Honourable India Company's studs, in the *Old Sporting Magazine*, vol. xxiv. p. 12., New Series, gives the following account of the performances of the best Arab horses then in India: —

RUN AT BENGAL.

Years.	Name.	Weight.		Time.		Distance.
		st.	*lbs.*	*m.*	*s.*	
	Patrician	9	0	5	34	280 yds., less three miles.
1807	Antelope	9	0	6	4	2¾ miles.
1809	Patriot	9	6	6	46	3 miles, 325 yards.
	Sulky	9	0	8	25	3 miles, 325 yards.
1818	Sir Lowry	7	4	4	0	2 miles.
1820	Nimrod	8	10	4	6	2 miles.
	Sultan (not 14 hands)	8	12	6	16	3 miles.
1826	Paragon	11	0	4	20	2 miles.
	Esterhazy	11	7	3	42	1¾ mile.
	Cavalier (not 14 hands)	8	7	4	4	2 miles.
1827	Champion	11	7	3	44	1¾ mile.
1828	Barefoot	8	4	6	7	Second heat of three miles.
	Chapeau de Paile	8	3	2	53	1½ mile.
	Red Gauntlet	9	3	5	6	2½ miles.
	Botherem	9	3	2	58	1½ mile.

886. *The powers of speed and endurance in the Arabian* therefore are not, according to the above authentic report, at all diminished; and, as Captain Gwatkin observes, when we consider the average height of these diminutive racers (fourteen hands, one inch); and the want of tenacity in the sandy soil of India, we cannot but be struck with their performances. Being ourselves very frequently in company with officers on leave from regiments serving in India, and almost every one of these being ardent pursuers of the chase, and experienced judges of the horses they ride, our inquiries of them of course have been much directed to the field sports generally of India. From their accounts, and the sketches they have shown us, we consider that *fig.* 145. p. 246. presents a good likeness of the hunter used in India, which is usually of Arabian descent.

Subsect. 4. *The Horses of India.*

887. *The influences of soil and climate in the development of the animal frame* are well exemplified in the horses of this country, which, as long ago as the time of Herodotus, were remarked for their diminutive size.

888. *The native breed of Indian horses* completely resist any great increase of size, as well as any great improvement in figure and qualities; and, however intermixed, they invariably exhibit a tendency to degenerate to the original stamp. (See *Effect of Climate on Quadrupeds*, p. 208.) We were ourselves once officially consulted on the possibility of enlarging the breed of horses in this vast peninsula. The opinion we gave was, that without the agencies of a temperate climate, and food at once succulent and highly nutritious, it would be in vain to attempt any material increase in their size. The well known resistance which has defeated every attempt to effect this enlargement of them by others, to any considerable degree, justifies the opinion we then gave. Mr. Moorcroft, we believe, thought differently, and he was induced to make trials with this end in view, but he failed. India, we are convinced, must be content to import from other countries all her well-bred horses of a height at all equal to our own. But by a continual intermixture with Arab and British blood, even India may always be well supplied with fair-sized and fleet horses.

889. *The present races of horses native to India* are, first, the *Tazee*, which appears to have been long native to the country. It is low in the back, and consequently easy in its gait and lofty in its carriage, but in other respects is indifferent, and very generally vicious.

The *Iranee* is altogether more compactly made, as well as stronger and more enduring. "The *Cozakee*," according to Captain Brown, "is a breed much valued on account of its gentle and docile disposition, for its powers of long continued exertion and endurance of fatigue, which highly fit these horses for the extensive journeys so frequently performed in India. The *Cozakee* is deep-chested, strong-loined, and muscular in the fore-arm, but his hind limbs are very much cat-nammed; his head is large and heavy." (*Captain Brown on Horses.*

890. *The Toorky may be considered as the best of the Indian horses:* originally derived from the Toorkoman, or Persian, or from a mixture of both, it possesses much gracefulness of action, with vast spirit and fire, which in many cases are accompanied with tractability, but in others with a degree of vice which renders them troublesome. With an elevated crest, lofty action, and withers near or quite fifteen hands high, they make showy parade-horses, and not despicable hunters. It is remarked, that most of the Indian horses are defective in the placing of the flexor tendons, or, in horsemen's language, are "tied in under the knee."

891. *Many Arabian, as well as Persian, horses* are annually imported into India, for the use of the men of rank and wealth. Some English horses of full blood are likewise sent from hence every year, between which and the Arabians, racing matches are common; but, hitherto, always to the advantage of the English thorough-bred horse. (See *Sports of India*, p. 38.).

Subsect. 5. *The Horses of America.*

892. *The horses of South America are descendants of Spanish horses*, which the first discoverers let loose there. Immense multitudes run wild on the plains; altogether they are rather useful than handsome; heads not clumsy, though not elegantly shaped; body tolerably round, but croup often low; legs, though slight, firm and well placed. The horse of Texas, called the *mustang*, claims a similar origin. Mustangs are seldom seen in larger herds than from forty to fifty, and are so shy from being frequently hunted, that it is difficult to approach them. They are taken by the *lasso*, or driven into an inclosure, or sometimes arrested by a shot in the neck, which, when judiciously planted, soon heals, and leaves the horse fit for service.

893. *The horses of the United States are also of every variety*, because this enterprising nation imports them from every country. The Americans breed useful hackneys, which very often excel in the trot; of which we have of late years seen some extraordinary examples among us. It has likewise lately become fashionable to countenance racing in America, which is the dawn of a new equestrian era, and the certain harbinger of still greater improvement in their native breeds. The Americans have since imported numbers of valuable stallions from this country.

Sect. V. *The Horses of Europe.*

894. *The European horse*, it may be supposed, was originally derived from the East, being introduced by the ancients, either when they made predatory incursions, or when, to lessen an overwhelming population, they sought a new location, and thus brought with them their flocks, herds, &c.

Subsect. 1. *The Horses of Spain.*

895. *What is known as the Peninsula was the portal whereby many horses from the East entered Europe.* The Moors and Barbarians made early incursions into Spain, and at length established their dominion, not only throughout the Peninsula itself, but also in others of the countries around. The Straits of Gibraltar, the ancient Calpe, offered a ready channel for transporting horses from Africa; and we see that such of the barb breed, as were preserved with strict attention to their purity, would, after they had been acted on by climate, form the jennet. Vegetius and other writers impute the jennet to this source: on the contrary, where an intermixture was allowed between the barb and such native horses as already existed in the country, or were received from other sources, a cross would result, from whence sprang the Andalusian charger; which, like the dressed or managed horse we read of in the Duke of Newcastle's celebrated work on *Horses and Horsemanship*, was large, supple in action, lofty in carriage, and a fit bearer of the romantic knight of chivalrous times.

896. *Thus the jennet*, a smaller horse than the Andalusian, much resembled its prototype the barb; but, under the agencies of climate, it had somewhat increased in bulk, and a little degenerated in elegance of figure, particularly in the head. There is, however, no doubt that some of the early amelioration of our breed of horses is attributable to the jennet, which, though considered Spanish, was of Arab descent.

897. *Astley's Spanish horse* still lives in the memory of the veteran. "This docile animal," Captain Brown, in his *Anecdotes*, informs us, "was accustomed, at the public performances

in the amphitheatre of Astley, to ungirth his own saddle, wash his feet in a pail of water, fetch and carry a complete tea equipage, with many other strange things. He would take a kettle of boiling water off a flaming fire; and acted, in fact, like a waiter at a tavern or tea garden. Mr. Davies, late proprietor and manager of the Royal Amphitheatre, had the greatest regard and attachment for this horse, from his wonderful tractability and extreme docility. When, from age, he had lost all his teeth, and he was unable to masticate his corn, he was fed upon bread: at last, nature being exhausted, he died at the great age of forty-two years. Mr. Davies, with an idea to perpetuate the memory of so valuable an animal, caused his hide to be tanned and made into a thunder drum, which stands to this day on the prompter's side of the theatre; and, when its rumbling sounds die on the ears of those who are acquainted with its history, it serves as his parting knell."

Subsect. 2. *The French, Flemish, German, and Hungarian Horses.*

898. *The native horses of the Continent*, with a few exceptions, are not of a very high stamp. As regards what we call the blood-horse, all attempts of the continentalists at rearing it to that perfection seen among us for many years totally failed; which may be attributed to a variety of causes, as a climate less favourable, a treatment less judicious, and food less nutritious. Thus Napoleon, with all his endeavours, was unable to make any considerable improvement in his breeds, although he liberally diffused the English, and even the Arabian, blood throughout the principal French departments. France is therefore yet under a necessity of importing horses from England, to keep up a superior stock for racing and hunting, as well as for the carriages of persons of rank and wealth. Inferior hunters and good hackneys are bred in Limousin, and a smaller variety is found in Auvergne and Poictou. Common coach-horses, and some cavalry-horses, are bred in Boulonnais and Franche Comté. Brittany furnishes a light hackney also; but by far the best native horses of France are those of the heavy draught breed of Normandy, teams of which, gaudily covered with fancy trappings, we have followed with admiration. A breed from the neighbourhood of Bordeaux, formerly in some repute, has declined with the increased demand for mules for the Spanish markets.

899. *Flanders produces an equally powerful breed of draught-horses*, the luxuriant pasturage of this country tending greatly to an extra development of the frame of all the *Graminivora*. Many of the best draught-horses seen in our drays and coal waggons are imported from hence.

900. *The native horses of Germany*, in the more fertile parts, incline to become large and somewhat heavy; and their action being generally lofty, they are slow in their paces; they however figure as parade horses, and shine in the *manège*. The heaviest breed of German horse is nearly equal to the Norman and Flemish for weighty draught. Throughout all the Germanic states the breed of horses is every day improving by care in the selection of parents, by judicious crossings, and luxuriant pasturage. In the agricultural pursuits of the smaller farmers in many parts of Germany, mules are more used than horses, on account of their superior hardihood; asses are also more common there than in England. The gipsies of Germany (*ziguener*) are, as a body, very great dealers in asses, mules, and inferior horses, and are not a whit behind the same fraternity in England in trick and knavery.

901. "*Hungary has long been celebrated for a light, active, and spirited breed of troop-horses*, on which were mounted their hussars, so well known during the struggles with France for their superior horsemanship and dexterity in broad-sword exercise. It is said to have been the practice in that country, especially in Transylvania, to slit the nostrils of their horses, for the double purpose of giving free passage to the breath, and of preventing them from neighing, which they consider an inconvenience in war. The breeding of horses in Hungary is principally confined to the Comitati, or counties of Pesth, Varasdin, and Torontal, in which they are extensively reared, and especially in Szanad, where a most extensive imperial breeding stud was established in 1783, at Mezöhegyes, upon four commons, containing forty-two thousand *joch*, employing about five hundred men." (*Loc. cit.* p. 487.) (Of the great and judicious attention to the breed of horses in Germany of late years, some further account may be seen by a reference to the *Field Sports of Germany*, p. 86., and since then improvement has gone on with far more rapid strides.)

Sect. VI. *The Horses of Great Britain.*

902. *The early records of our island* inform us that, when Cæsar landed on the British shores, our scythed chariots, drawn by horses in a high state of discipline, excited terror throughout the proud legions of this conqueror; and that, on his return to Rome, he was most careful to carry with him some of these war-horses to mix with his own. This account has raised many conjectures as to the kind of horse the ancient Britons then possessed. The indigenous breeds, as the ponies of England and Wales, the shelties of Scotland, or the hobbies of Ireland, could hardly supply animals that could infuse terror among disciplined troops, or overturn whole ranks of the Roman army. It is still less likely that either of these varieties would be taken away to improve the cavalry of Rome. It would seem probable that the Britons had already a breed in the southern parts of the island different from the small indigenous breeds, and which were most likely allied to the Belgian or Flemish horses. That the horse was, at a very early period of our history, an important animal among the natives of our isle, we judge by the fact, that some of the most ancient British coins are stamped with a king on one side and a horse on the other. Nor is the supposition entertained by some at all correct, that the Britons must at this period have had very few horses; for we find that, when Cassibelaunus, their king, dismissed the main body of his army, he retained four thousand of his war chariots to harass the Romans. It followed that, after the Romans had completely established themselves in Britain, their horses would become mixed with ours; and although they actually took over our horses to Rome, to show the discipline of the British war chariots, it is natural to suppose that, as they had drawn so liberally on the stores of Greece, and had such intercourse with Barbary, the mixture of the Roman breeds with our own was infinitely in our favour, as to the improvement of the native English races. Indeed, the first considerable amendment in the British horse of early times must have been thus achieved, as the second was that brought about by the northern hordes. Athelstan particularly distinguished himself in attending to the improvement of the horse, as well as to prevent such benefits from being extended beyond

our own shores, by prohibiting the exportation of English horses; which, judging by the value of money in those days, were prizable articles. "In a document, bearing date A.D. 1000, we have an interesting account of the value of the horse. If a horse was destroyed, or negligently lost, the compensation to be demanded was 30*s.*; a mare or colt, 20*s.*; a mule or young ass, 12*s.*; an ox, 30*d.*; a cow, 24*d.*; a pig, 8*d.*; and it strangely follows, a man, 1*l.*! In the laws of Howell the Good, Prince of Wales, passed a little before this time, there are also some curious particulars respecting the value and sale of horses. The value of a foal not fourteen days old is fixed at 4*d.*; at one year and a day it is estimated at 48*d.*; and at three years, 60*d.*" (*Library of Entertaining Knowledge*, art. Horse, p. 23.)

903. *The Norman Conquest* brought with it a great accession of new blood to our breeds; and the settling of the Norman barons on the British plains was the means of introducing among us the fine cavalry breeds of Normandy, Picardy, and Flanders. Roger de Belesme, Earl of Shrewsbury, likewise brought with him Spanish stallions, of whose progeny high mention is made both by Giraldus Cambrensis and Drayton. These horses appear to have been of a tall bony breed, and well calculated to shine in the tilts and tournaments of those times.

904. *The Cleveland bays* (*fig.* 146.) are somewhat of this kind, and they are known to owe their most valuable properties to early crosses with the race-horse of those times with the best of the above heavy breeds; but the Cleveland bays have gradually fallen into disrepute. They used to be reared to a great extent in Yorkshire, the farmers of which county had been long remarkable for their knowledge in every thing that relates to this species of live stock. For the large London carriages formerly in use this breed had no superior; and capital slow hunters were often produced by putting full-bred stallions to mares of this sort; but as the style of our harness horses has now materially changed, the original genuine Cleveland bred horse is more confined to the farmer's use. With lighter carriages and improved roads a higher bred horse has been substituted. Indeed, many country families who formerly made their carriage horses do occasional duty in the cart, now make the saddle horses do duty in the carriage, and in a general way they are all the better for it.

CLEVELAND BAYS.

905. *In the reign of Henry the First,* A.D. 1121, the first reputed Arabian made its appearance in Great Britain, it being recorded that Alexander, king of Scotland, presented to the church of St. Andrews an Arabian horse with costly furniture, together with a large estate. The estate might well become the Scotch church; but the gift of the horse bespoke, we think, an odd taste in the giver, or, otherwise, very sporting propensities in the receivers.

906. *The crusades which followed,* were likewise the means of introducing many eastern horses, whose value could not have been altogether unknown to the English merchants, who in early times traded in oriental countries, and who, in all probability, occasionally brought

horses back with them, but we are not warranted by history in concluding that either barbs or Arabians of any great value were among them. The jennet of Spain we know was introduced in these early times; and, subsequently, trained cavalry stallions were derived from Germany. It is also known that, as improved agriculture gave a new stimulus to exertion, importations of heavy draught stallions were made from Flanders and the whole of the Low Countries, which importations were especially countenanced by Edward the Second.

907. *Edward the Third purchased fifty Spanish horses* of such value that he interested the kings of France and Spain to give them safe convoy. These we suppose were of a lighter form than others previously imported; for we find the prevailing taste had altered, and that the heavy war-horse was now giving way in public estimation to one of diminished bulk and greater activity. Unfortunately, however, the cumbrous armour of the cavalry soldiers of these days still imposed a necessity of maintaining a greater number of the weighty breed for many succeeding reigns.

908. " *Henry the Eighth,*" *says the author of the Farmers' Series,* "a tyrannical and cruel prince, but fond of show and splendour, was very anxious to produce a valuable breed of horses; and the means which he adopted were both perfectly in unison with his arbitrary disposition and very little calculated to effect his object. He affixed a certain standard, below which no horse should be kept. The lowest height for the stallion was fifteen hands, and for the mare thirteen hands; and even before they had arrived at their full growth, no stallion above two years old, and under fourteen hands and a half, was permitted to run on any forest, moor, or common, where there were mares. At 'Michaelmastide' the neighbouring magistrates were ordered to 'drive' all forests and commons, and not only destroy such stallions, but all 'unlikely tits,' whether mares, or geldings, or foals, which they might deem not calculated to produce a valuable breed. He likewise ordained, that in every deer-park a certain number of mares, in proportion to its size, and each at least thirteen hands high, should be kept; and that all his prelates and nobles, and 'all those whose wives wore velvet bonnets,' should keep stallions for the saddle at least fifteen hands high." (P. 27.) The love of the spectacles of tilts and tournaments which marked these times, however, occasioned a still more powerful and warlike stamp of horses than those last portrayed to be encouraged among the native breeders of horses, and such were also obtained from the breeders of Germany, Flanders, &c. (*fig.* 147.)

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GERMAN HORSE.

909. *The arbitrary enactments of Henry the Eighth,* however, certainly tended to improve the breed of horses, so long as they were accompanied by the example of a court, and with a pageantry and splendour which encouraged the tenantry to rear them of such a stamp as should insure a ready sale and high price: but as this ostentation lessened in the subsequent reigns, the demand for good horses decreased, when these enactments proved burthensome in the extreme, and the unfortunate agriculturists, restive and oppressed, altogether avoided rearing horses of figure and value, trusting for their common supply to the accidental productions from forest breedings, and stolen leaps among their own agricultural teams. Thus we find Blundevill speaks of the horses which followed this reign in the most contemptuous terms, as being neither suited for heavy nor light purposes. The scarcity of even tolerable horses appears to have become so great, as already noticed, that three thousand were all that Queen Elizabeth could muster throughout the kingdom to oppose the threatened invasion of Philip of Spain, and these were of little worth. This memorable lesson was not however without its benefits, by awakening the country at large to the evils of neglecting the national cavalry breeds. Young men of spirit began also to encourage racing matches between their horses; and a new impetus was likewise given to the cultivation of a superior breed by the invention of coaches, which were first introduced by Fitzallan, Earl of Arundel; riding on horseback having previously been the only mode of travelling by the highest ranks. Even Queen Elizabeth proceeded in state to St. Paul's mounted behind her master of the horse. Carriage riding, however, became suddenly so fashionable, that it was even attempted, though ineffectually, to restrain it by an act of parliament. Nevertheless, for a long time, the judges continued to ride on horseback to Westminster Hall; and even King Charles the Second, at the Restoration, rode thus between his two brothers, the Dukes of York and Gloucester, attended by a numerous and very splendid cavalcade.

910. *The reign of James the First was characterised by a great encouragement of the turf,* but it proved in some measure unfortunate towards the improvement of the breed of horses to be engaged in racing, in consequence of the introduction of an Arabian by this prince, for which he had given 500*l.* to a merchant of the name of Markham. This horse, being easily beaten by every English racer which ran against him, brought the Arab

blood into disrepute for a long series of years, as will be seen in our future detail. It is, however, necessary to remark, that this prejudice was greatly increased by the reports of that celebrated author on equitation, the Duke of Newcastle, who was evidently leaning to military equitation. This check to the introduction of Arabian blood proved the more unfortunate, because the Turkish and Barbary breeds, already intermixed with our own, had not hitherto produced that marked improvement in figure and action which had been expected, and which was eventually gained from the Arab cross.

911. *Cromwell, fanatic as he appeared to be,* was too politic not to fall in with the reigning taste of the day in favour of horses; he encouraged their improvement by a mixture with foreign stock. In addition to his other horses of this kind, he purchased of Mr. Place (afterwards his stud-master) the celebrated White Turk, and likewise some valuable brood mares of eastern blood; one of which was known as the Coffin mare, from being found in a vault, when search was made for Cromwell's effects at the Restoration.

912. *Charles the Second proved a considerable breeder of horses from the eastern stock,* and a warm patron of the turf. He sent his master of the horse abroad, purposely to select both stallions and brood mares from Barbary. The latter, from this circumstance, have been distinguished as the "royal mares," and are so recorded in the stud-book. One of these was the dam of Dodsworth, bred by the king, which has been considered by many as the first "thorough-bred race-horse," properly so called, that we have on record. Either in this or the next reign, the Helmsley Turk, the Taffolet Barb, the Lister Turk, the White-legged Lowther Barb, &c. &c. all of them horses of well authenticated pedigree, made their appearance, and added to the improvement of the stock.

913. *William the Third was a soldier and a sportsman, and consequently favourable to the improvement of the horse.* Among other stallions introduced in his time, the Oglethorpe Arabian and the Byerly Turk stand conspicuous.

914. *The consort of Queen Anne, Prince George of Denmark, kept a fine stud of his own,* and many valuable stallions were imported during this reign; among which may be instanced Croft's Bay Barb, the Curwen Bay Barb, the Leeds and Woodstock Arabians, the Honeywood White Arabian, Cole's Barb, St. Victor's Barb, as well as the celebrated Darley Arabian.

915. *The Darley Arabian deserves particular mention among the improvers of the British horse breed.* It is to be regretted that no authentic portrait is extant of this celebrated animal. He however lives in his progeny, of which, were there no others, it would be sufficient to name that wonderful horse Childers, usually called, from his immense speed, "Flying Childers." The performances of Childers, as well as those of the other descendants of the Darley Arabian, are sufficient certificates of his own local origin, and the unmixed purity of the descent of the sire. It may be said of this celebrated horse, that it was he that removed the last shades of prejudice against Arabian blood, occasioned by the failure of that introduced by James the First. From this time it not only became the endeavour to obtain Arabians of undoubted purity of blood at any price, but occasion was taken from the circumstance, to call most of the horses imported from the Levant Arabians, whether their origin were Egyptian, Turkish, Syrian, or Barbary. This kind of deception, without doubt, has much confused the real pedigree of even our best horses; and although we may know them to be of true eastern descent, we are much less certain as to what immediate oriental province they are derived from.

916. *In the reigns of George the First, Second, and Third,* the beneficial effects of the intermixture of the south-eastern breeds, particularly of the Arabian, as well with each other as with our own improved native breeds, but more especially with the Cleveland bays (themselves an improved breed from crossings with foreign blood), became apparent throughout all our horse stock. The amendments on the introduction of oriental blood here stated, consisted in more symmetrical proportions of body, with courage, endurance, and vast powers of rapid locomotion. It is thus that the British horse is now more highly prized than that of any other country; and is even sent eastward, to ameliorate that blood which was borrowed from thence. Our improvement indeed is such, that no Arabian, barb, or any foreign breed of horses whatever, can compete with what is conventionally known as the "British thorough-bred horse."

SUBSECT. 1. *The Progress in Britain of the Knowledge of the Horse, as shown in the Writings of British Authors, and in the Translations of Foreign Works.*

917. *After the fashion of the ancients,* in the early periods of our own history, we find that all published directions relative to the treatment of the horse are mixed up with agricultural matters in general. We see this instanced in *The Boke of Husbundry*, by Sir A. Fitzherbert, a judge of the Common Pleas, which appeared in the reign of Henry the Eighth. In later times the sanative code became incorporated with the arts of the *manège*, and farriery was either practised and taught by the professor of equitation, or it descended to the forger of his shoes. Of these additamentary arts we shall say little; nor will our limits allow us to do more than to specify the most popular of the works dedicated to the medical treatment of the horse particularly, and to his non-medical treatment generally. One of the first and oldest works on farriery was printed in 4to. by Wynkin de Worde, about the year 1500, under the title of *The Propertys and Medycines for an Horse.* The next on record was published in 1609, during the reign of Elizabeth, in small 4to. black letter, entitled, *The Four Chiefest Offices of Horsemanship*, that is to say, the office of the breeder, of the rider, of

the keeper, and of the farrier, by Master Blundevill. About the middle of the seventeenth century, Leonard Mascal also published in 4to., and black letter, *The Government of Cattle;* which treats of horses, oxen, sheep, goats, and dogs, with approved remedies for most of their diseases. We have next Gervase Markham's *Masterpiece;* which, although it went through many editions, was nevertheless a sorry performance: it was divided into two books, — the first on *Cures Physical;* the second on *Cures Chirurgical.* The year 1650 brought to light the work of Thomas de Grey, Esq., entitled, *The Compleat Horseman and Expert Farrier.* De Grey talks of preserving the horse from disease by vomit, it is true, but his work is not without merit. His treatment of the feet, and his directions on breeding, have many good points in them. In the seventeenth and eighteenth centuries, equitation became much studied in Britain; and numerous works by professors of the *manège* and of riding were imported; and no less numerous were the French, German, and Italian authors, who wrote on those subjects, whose works were read by us in their native languages, or were translated for our instruction: among which we may particularise, *La Gloria del Cavallo*, by Pascal Cariacollo; *L'Escuirie* de M. De Pavari, Venetien. De Winter also and Mangen Sautern are veterinary writers of the sixteenth century. Of a later period, Mr. Clarke points to the learned treatise of Peter a Naaldwyck, *Liber Phillipicorum; sive, De Equorum Natura, &c.*, Leyden, 1631. About this time, also, the celebrated book of the Duke of Newcastle made its appearance, and was soon followed by La Guiriniere and by De Saunier, and later, by Berenger's *History and Art of Horsemanship.* We retrace our steps however to observe, that in 1686 *The Gentleman's Recreation*, by Robert Blome, gent., was brought forward, and excited much attention. This work, for the time it was written in, was a very respectable performance, and embodied most of the sporting knowledge attainable at that period. It is divided into two parts: the first presents, *A Encyclopedy of Arts and Sciences;* the second treats of *Horsemanship, Hawking, Hunting, Fowling, Fishing, and Agriculture;* to which is appended, *A Short Treatise on Cock fighting.* The sporting part of this work is candidly acknowledged by the author to be founded on a translation of a French work, entitled, *La Ruses Innocente.* In 1686, Snape's *Anatomy of the Horse* was published; and though a very imperfect work, it was not without its interest, as it directed the attention to a very important part of the knowledge of the horse — the structure of his frame.

918. *About the middle of the eighteenth century*, a translation of Sollysel's *Parfait Marêchal*, by Sir William Hope, became very popular; and, indeed, for a long time, it was the *vademecum* of horsemen of every rank. In the latter part of Sollysel's work, there appear some instructions connected with the turf — the training of horses being treated of rather largely. Michael Baret's *Hipponomie*, or *Vineyard of Horsemanship*, likewise appeared about this time. We have never met with this work, but Mr. Clarke observes, that it contained "more learning and mathematical reasoning than any work of this nature and date." The well known treatise of Gibson soon followed. Gibson had been originally surgeon to a regiment of cavalry; from which situation, it is probable, he was first led to turn his attention to the diseases of the horse; and by the same means he was, at length, enabled to present the best treatise on farriery that had appeared in the English language. It is said he afterwards lived in Duke-street, Grosvenor-square, where he practised with great reputation. He appears to have written several other books; but his principal work was published in 4to. with anatomical plates, copied from Snape or Ruini, and called *The Farrier's Guide.* Of Gibson's work it is but his due to remark, that, although his anatomical details were incorrect, and the functions and economy of the organs were overlooked by him, yet his treatment of the diseases of the horse was generally very judicious, and his account of symptoms accurate and interesting. Guided mostly by his own observation, he became the best writer and practitioner of his day. Contemporary with him lived the celebrated and eccentric physician, Dr. Bracken, a man of considerable erudition, a sportsman, and a wit of a peculiar cast. Bracken's veterinary works have been as much admired and read for the peculiarities of the style in which they are written. as for the real information they contain. Bartlet, who was a successor to the two former, was likewise a surgeon. He formed himself on the model of Gibson and Bracken, and he gave the sum of their medical instructions in a much more compendious and practical form. To him succeeded Osmer (a *ci-devant* human surgeon also), who practised as a veterinarian with great reputation in Oxford-street. His *Treatise on the Lameness of Horses*, with *An Improved Mode of Shoeing*, is most deservedly esteemed; and his *Forge Practice* was adopted, with some slight alterations, by the late Mr. Morecroft.

919. *Mr. Clarke of Edinburgh*, the king's farrier for Scotland, is the next luminary in the veterinary hemisphere. His excellent works were a treatise on *Shoeing and Diseases of the Feet, and the Prevention of the Diseases of the Horse.* To these succeeded the able dissections and engravings of the *Myology of the Horse*, by Mr. Stubbs, the professional horse painter, who, to high excellence in his art, added a very considerable knowledge of the general anatomy of the animal. Mr. Taplin next occupied the public attention; but, it must be confessed, not very profitably for the cause he was engaged in, nor eventually for himself.

920. *The establishment of a national school for the promotion of the veterinary art* will ever remain a memorable epoch in the sporting annals of the country. The Veterinary College of London was founded in 1792, under the superintendence of M. St. Bel, a Frenchman, who possessed some knowledge of the anatomy of the horse, but more of the arts of the *manège.* The compiler of this work was added to this establishment as assistant teacher of anatomy and demonstrator, but quitted it after a twelvemonth's residence. M. St. Bel's publications were, *An Essay on the Geometrical Proportions of Eclipse; Lectures on the Elements of Farriery; The Art of Horse Shoeing and Diseases of the Feet;* and a volume of posthumous works, collected for the benefit of Madame St. Bel, his widow. The treatise on *The Geometrical Proportions of Eclipse*, which gained its author many admirers, owed much to the embellished style of the accomplished Mr. Penn: the subject-matter itself may be seen, with little alteration, in the first volume of Bourgelat's *Elemens d'Hippiatrique*, published at Lyons in 1750: nor can M. St. Bel's *Lectures on the Elements of Farriery* claim any greater originality, being mostly servile copies of La Fosse's writings.

921. *On the death of M. St. Bel*, the public attention was engaged in considering on whom the vacant professorship would devolve: some eyes were directed to ourselves, and many others to Mr. Clarke, of Edinburgh, who however refused it. Mr. Morecroft, then in practice as a veterinary surgeon, appeared next the most eligible person. Mr. M. was originally a student of human medicine, but he had lately studied veterinary medicine in the French schools, and was thought to possess extensive information on the subject. Mr. Coleman, a medical pupil of the Borough hospitals, who had much distinguished himself by some physiological inquiries, and by some experiments on the diseases of the eyes of the

horse, was likewise brought forward, although his designs had never, we believe, reached further than this, nor had his attention at that time ever been engaged beyond that point. The fitness of Mr. Morecroft was, however, so nicely balanced by the interest of Mr. Coleman, that it was determined to unite them in the professorship; and, with the practical knowledge of the one, and the investigations of the other, every thing was to be hoped from the association. Unfortunately for the institution, Mr. Morecroft, finding that he had quitted a profitable concern, soon seceded; and Mr. Coleman, who successfully applied himself to fill up by his own talents the loss of his colleague, was appointed sole professor; and an able one he made, in spite of all his enemies can allege against him. The increasing concerns of the college required, in a few years, additional teachers, and Mr. Sewell was appointed assistant professor. In this gentleman, also, the art found an able and zealous promoter of its interests; and, subsequently, a Mr. Vines was added to the list of active and useful assistants. Mr. Coleman's professional works, since his succeeding to the college chair, have been, first, a pamphlet on *The Formation and Uses of the Natural Frog of the Horse, with a Description of a Patent Artificial Frog.* The principle on which this invention was founded, was the necessity of extended pressure to the well-being of the foot; but the application of the instrument was found too inconvenient for general adoption. Mr. Coleman's second veterinary publication, whether we consider the importance of the subject, the ability displayed in the anatomical execution of it, or the splendid manner in which it was got up, reflected upon the author the greatest credit; it was entitled, *Observations on the Structure, Economy, and Diseases of the Foot of the Horse, and on the Principles and Practice of Shoeing*, in 2 vols. 4to. Of the benefits which have been derived from the establishment of a veterinary school, we need offer no other proofs than the eminence to which many of the pupils educated there have attained in their profession, and the celebrity which many of the works published by them have gained, as well in other countries as in their own.

922. *In order to complete our account of the principal writers* who have contributed to improve our knowledge of the horse, we must now retrace our steps. In 1796 an elegant work in 4to. appeared, by Strickland Freeman, Esq., an amateur professor of the arts of the *manège*, entitled, *The Description of the Structure and Economy of the Foot*, accompanied with a set of highly-finished engravings, by Skelton, of dissections made under the inspection of Sir Everard Home. That well known and voluminous writer, Mr. John Lawrence, commenced his career about the same time by *A Collection of Extracts* from St. Bel, Osmer, Clarke, and Lord Pembroke: the year 1798 brought out his *Philosophical and Practical Treatise on Horses*. In this work, the general treatment of this animal is in most respects ably handled; and in him, humanity towards brutes has found a most able and popular advocate. The later works of this author are all of them highly instructive in rural matters; and some of them, intimately connected with the topics most interesting to the sportsman, have been deservedly well received.

923. *In the beginning of the nineteenth century* appeared Mr. Morecroft's *Cursory Account of the Various Methods of Shoeing Horses.* Mr. White's voluminous works on farriery also attracted much public attention. Mr. Richard Lawrence, of Birmingham, likewise brought out a quarto volume of much elegance and interest. The pages of Feron's *New System of Farriery*, and Mr. Ryding's *Veterinary Pathology*, were immediately followed by the *Veterinary Dictionary* of Mr. Boardman, a compilation of much labour, and of general utility, considering what at that time was the state of our knowledge of the subject. Our own *Anatomy of the Horse*, published in monthly numbers of a folio size, with coloured plates, next attracted the public attention. That lover of the horse and patron of field sports, George the Third, was graciously pleased, personally, to recommend the author to continue the work, and to permit it to be dedicated to himself. The work met with much public support, but the expenses which attended the engravings and colouring of the plates so far exceeded the receipts, as to force the author to discontinue the publication. A few years after he however again essayed the perils of authorship, by publishing his *Veterinary Outlines*, which have passed through several editions, and have been translated into most continental languages. The author's other works were, *A Treatise on the Distemper in Dogs; A Domestic Treatise on the Diseases of Horses and Dogs;* and lastly, *Canine Pathology, with a Critical Inquiry into the Origin of the Dog, and a Copious Detail of the Rabid Malady*, all of which have gone through several editions.

924. *In* 1809 *Mr. Bracy Clark*, one of the earliest pupils of the Veterinary College, published his well known *Dissertation on the Foot of the Horse, with Experiments on Shoeing.* The object of this elaborate work was to prove the hurtful effect which the present system of shoeing has on the feet of horses, and "to recommend one less prejudicial." Mr. Clark is also the author of *A History of the Bots of Horses*, a work that deservedly gained him much notice among naturalists; *A History of the Horse*, a treatise of much research, and replete with interest. Several other tracts, exhibiting equal ingenuity, emanated from this gentleman's pen. In 1814 Professor Peal, of the Royal Dublin Society published an excellent work, entitled *Observations, chiefly Practical, on some of the more Common Diseases of the Horse, his Stable, Management, Diet, &c.* Mr. Goodwin, late veterinary surgeon to George the Third, about the same period presented to the public his *New System of Shoeing Horses, and the Various Modes practised by different Nations.* To this ingenious writer, the public are indebted for many improvements, as well in the theo-

retical, as in the practical part of this art. Shortly after appeared Mr. Percival's *Elementary Lectures on the Veterinary Art*, of which it is not too much to say, that these as well as his *Anatomy of the Horse*, and his *Hippopathology* (works of later date), will carry down his name to posterity as one of the greatest contributors to veterinary science. A few years afterwards Mr. John Rydge offered to the public *The Veterinary Surgeon's Manual.* This gentleman, if indeed there be such a person, certainly does the author of this work the honour of lauding his writings, and then pirates them into every page of his work. Since this time, and from the same *mart*, a still more meagre compilation has appeared, entitled *The Village Farrier*, by Ephraim Blaine. The united endeavours of the author of this review, and of his friends, have failed to discover such a person as Ephraim Blaine; and if the publisher of *The Village Farrier*, from motives of cupidity, has attached a name he cannot personify, the work alluded to can be no other than a fraud on the public. We have to notice an important addition to our veterinary catalogue in a *work* on the *Navicular Disease*, by Mr. James Turner, of Regent-street. The Messrs. Turner, both of Croydon and London, are well known practical veterinarians of much repute, and this work has added much to the reputation of its author. Mr. James Turner has distinguished himself in acute physiological inquiries.

925. *The Veterinarian* by Messrs. Percival and Youatt, a monthly publication devoted to the extension of every kind of knowledge relating to the horse, greeted the opening of the year 1828. A periodical journal of any art is an encyclopædia, which contains not the acquirements of one individual only, however talented, but the knowledge and experience of the many, and in one important particular it is even superior: the encyclopædia rests as it is; the journal marches with the art it commemorates: it is a register of facts more than of opinions; and, by its means, many a spark is fanned into a flame, and many a brilliant but slothful genius is stirred up to appear in a page, who would sicken at the prospect of a volume. Neither is it one of the least of the benefits likely to accrue from the work in question, that it will prevent many of the more remote practitioners from falling into the narrow and empirical practice of pretending to secret modes of treating disease, and the employment of infallible nostrums. On the contrary, it will beget a habit of inquiry from every accredited source, and an equal readiness to give and receive information; and when in the company of his professional brethren, to endeavour to form a scientific pic-nic, to which every one will be happy to contribute his mite or his meal; and which, like the bread cast on the waters, will eventually return enlarged tenfold. As authors of minor veterinary publications, the names of Orme, Denny, Pursglove, Hodgson, and some others also, appear. Mr. Cherry has produced a small work on the *Treatment of the Feet of Horses*, of which report speaks very favourably. Mr. Vines' *Treatise on Glanders* has added to the celebrity which that gentleman's dissections and experiments have already gained him. Of a later date are the very ingenious and useful *popular* treatises of Mr. Stewart of Glasgow; and more recent still is a work on the foot of the horse, by Mr. Miles, and a very cleverly written and clearly illustrated treatise on the horse's age by Mr. Mayhew.

SUBSECT. 2. *Conventional Terms in use among Horsemen.*

926. *In the horseman's vocabulary are found horses, mares, and geldings.* In common parlance the term *horse* applies equally to each of these; but, more strictly speaking, it implies a stallion or uncut horse, frequently also called an entire horse. The *gelding* designates a horse which has been cut; and as castration is so common among British horses, this term is a very familiar one. Besides the race-horse, hunter, hackney, and shooting poney, there are coach, chariot, and gig-horses; chargers or troop-horses, and heavy draught-horses. We measure the height of a horse by hands, each *hand* being equal to four inches. A horse under fourteen hands, or fifty-six inches high, is called a galloway; if under thirteen hands, or fifty-two inches, it is a pony. *Thorough-bred* is used of a horse, which boasts a long descent from Arabian or barb parentage. The term *cocktail*, now become common on the turf, is applied to any horse of racing stamp and qualities, but decidedly not thorough-bred, from a known stain in his parentage.

927. *Blood-like is said of a horse where a show of blood predominates;* and as such the term will apply to a pony, there being many blood-like ponies. The *welter* horse is by no means a modern term, but is of uncertain derivation, and characterises either a racer or hunter that is equal to a heavy weight. Mr. John Lawrence says, "The degrees of blood in an English horse are thus expressed:—half-bred, three-parts, and seven-eighths, which last term, probably, I supplied. The first, or half-bred, being the produce of a racer and a common mare, or *vice versâ* (the last cross not so frequent, nor deemed so successful); the second of the racer and half-bred, and the third, of the racer and the three-part-bred mare."

928. *The popular names used to designate the external parts of the body of the horse* are too familiar to every horseman to render any detail of them necessary here. We have already fully exemplified them by figure and description in Mr. Loudon's *Encyclopædia of Agriculture*, to which we would refer if it be required.

Sect. VII. *The Racer, or thorough-bred Horse.*

929. *The term racer, or race-horse,* is sufficiently definite, at least it is conventionally so; inasmuch as it is intended to characterise a horse appropriated to run racing matches (*fig.* 148.), either against time, or, as is more common, against some other horse or horses.

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RACE HORSE.

930. *The term thorough-bred,* as relating to a horse, unfortunately for the sporting world, is neither critically nor conventionally definite. In fact, there are scarcely any two persons who are exactly agreed as to the real import of thorough-bred; neither indeed is it very likely that they should, seeing that the origin of our most reputed breeds is veiled in the obscurity of olden records, and in the nefarious traffic in false pedigrees. The critic might also assert that, strictly speaking, it is doubtful whether we have any horses which so well deserve the term of thorough-bred, as our Exmoor pony, the sheltie of Scotland, and the shaggy diminutive of Zetland, p. 207. These are clearly so, if we mean thorough-bred to imply an unmixed breed, which we do not in the case of race-horses.

Subsect. I. *The Origin of the British thorough-bred Horse.*

931. *The thorough-bred British race-horse therefore,* to which we now mean to confine our attention as regards its direct origin, is yet, and probably long will remain, a subject of dispute. The stud-book, an acknowledged authority, implies, that all thorough-bred horses should be able to trace their origin to eastern sires and dams, proved by proper authority to be of unmixed descent. When this cannot be done, it is more than hinted that we must content ourselves as to the uncertainty of the very early parentage, provided the pedigree can be clearly traced to eastern stock to a *certain extent.* But what that *extent* is, has never been conventionally agreed on; none being contented with less than eight generations, while others declare they can detect the cross as far as the sixteenth. All, however, are inclined to agree that, provided the search ends in a well known racer of full-blood, such a horse may be considered as thorough-bred. We are therefore in the very outset constrained to encounter uncertainty; and when we reflect how much reason we have to suspect that, in the early breedings of the English race-horses, our own mares were employed as dams, we must be aware that the term thorough-bred becomes almost hypothetical. With the exception of the royal mares of Charles II., and of two or three others of later date, the dams of our most reputed breeds were supplied from the indigenous breeds of our own country; at least the greater number of our racers cannot boast of other or better origin. The opinion of Mr. John Lawrence we here quote in his own words, from his well known attention to these subjects: — "The species of horse used in Great Britain for the purpose of racing was, from the beginning, the silken-haired courser of south-eastern Europe, the origin of which was African, either Arabian or barb; and this apparently without any, save fortuitous and accidental admixtures with the indigenous breeds of this country." Lord Harley, the ingenious writer known as the Old Forester, gives on the other hand the following historical view of the origin of the race-horse: — "That the English, so called thorough-bred, horse is descended from pure eastern blood is impossible. On the extinction of the house of Tudor,

when defensive armour became less cumbersome, a lighter sort of horse became necessary for our cavalry troops. James the First imported a vast number of what were called royal mares and stallions, chiefly from Barbary. A strong dash of English blood was thrown in, but purified by again breeding in and in with the eastern horse, till at last the English race-horse was produced."

932 *The Germans of late years* have shown a very laudable emulation to rival us in their breeds of horses, and their writers have entered minutely into the origin of the English race-horse, as a prelude to a more ready method of obtaining a similar breed. Previous to 1815 the German horse amateurs considered our thorough-bred horses to have originated from a continued series of intermixtures of the best English mares with eastern stallions. At length in 1815, Mr. Justinus, the director of the imperial stud at Vienna, advanced an opinion to the following effect, that the English thorough-bred horse had sprung from a conformable cross of the barb and Arabian; and that, even if any other had intervened, it was of some other eastern horse. It followed, therefore, that even originally our racer was of pure eastern extraction, both by the *dam* and *sire's* side; and that afterwards it had been propagated without any mixture, now and then only being refreshed and ameliorated with eastern stallions. A similar opinion was upheld by Count Veltheim, a well known equestrian, in his *Remarks on English Horse Breeding*, published in Brunswick in 1820. A little time afterwards, however, another German work appeared on the same subject, from the pen of M. de Burgsdorft, landetallmeister in the emperor of Russia's service, who gives it as his opinion that the thorough-bred horse (from which all the improvements of the English country breeds have proceeded) had been created through an eight-fold improvement of the English country horse with eastern stallions. Who shall decide when doctors disagree? may indeed be here asked. After all, however, we think the matter resolves itself into this, that among our acknowledged racers of the stud-book, there are some whose origin may possibly be traced in an undeviating line of purity to south-eastern parentage. Again, there are others whose figure and performance have so blazoned their titles, that the slight early intermixtures of native blood are lost sight of in a long subsequent descent, confined to the purest breeds of our own studs, judiciously crossed with each other, so as to gain in the future descendants, as near as possible, the united excellences of the whole.

933. *The crossing of blood all know to be important in improving the races of animals;* but how readily, to a practised eye, the various lineaments and qualities of the different parents are traceable in the offspring, through a long line of descent, is fully appreciated by those only of very close observation. If such be the case, it is evident not only that strict attention to blood or breed is required, but it is also equally necessary that we attempt to correct the defect in any breed by a judicious selection of parents which exhibit superior excellence in the qualities imperfectly manifested in the breed which we desire to improve.

Subsect. 2. *The supposed Degeneration of our present Racing Breeds.*

934. *Are our thorough-bred horses degenerated from their original high form and qualities?* On this, as on most matters relating to the turf, there are conflicting opinions. Mr. N. H. Smith, in his *Observations on Breeding for the Turf*, presents us with the following remarks applicable to this subject: — "The style of racing now is totally different from that of former days. At present they run (except at country races) with light weights and short distances, where speed only can excel: formerly they ran with high weights and long distances, where bottom or stoutness was equally necessary; and hence it may be presumed that the horse, possessing qualities which might have brought him into distinction then, would not be calculated to obtain now an equal fame at Newmarket. It is, therefore, very natural to suppose that this difference in our style of racing may, in a certain degree, have altered the character of our racing stock. By a reference to former sporting publications, it appears that the horses were then smaller (most likely shorter in the leg) and, no doubt, capable of carrying higher weights, and *running in* better, than the present racers; which most probably are, generally speaking, longer in the leg, with less substance. It must be allowed that the horse that can go a good distance the best with high weights, is for all general purposes (and particularly for giving a value to any intermediate breed between the racer and draught-horse) the best sort of horse to resort to as a stallion; but there is something inhuman in the former practice of running four-mile heats with twelve stone weight, which must reduce the speed of the best horse in the world to a pace to which a race-horse ought never to be reduced. It is not racing, but a severe trial of constitutional strength, of the most distressing nature to the poor animal, and better calculated to gratify butchers and hawkers than the taste and feeling of gentlemen." Nor has any alteration in the practice of racing tended so much to redeem its character from the charge of cruelty, as the almost total abolition of three and four-mile courses. Happily, in this respect, we differ from some that have gone before us, who have been used to run their horses six and eight miles, and, as it is recorded, on even longer courses. "This difference, then, between the former fashion in racing, renders it very difficult to form any accurate opinion of the relative speed or goodness of the horses, and the inference probably is, that the horses of the present

day are best calculated for the present mode of racing, since every man on the turf has naturally made every exertion to arrive at the *same goal.*"

935. *The breed of hunters, and indeed of saddle-horses generally*, is by some also thought to be much degenerated, at all events decreased. This may be attributed to the greater profit derived from breeding draught and agricultural horses, which come into remunerative work at such a much earlier age. Horses of all sorts were never dearer or in more demand than they are at the present time (1857); but the saddle-horse has never formed a distinct department of breeding, and the prejudice that exists against mares operates seriously upon the supply. As regards hunters or hacks, we look upon the objection to mares as ill founded; but fashion is a formidable opponent to contend with. At all events it cannot be denied that if a good-shaped mare meets with an accident she is always valuable for the stud, while a horse at best will only come on as a supernumerary at the farm.

Sect. VIII. *The exterior Conformation of Horses generally, and of the Blood Breeds particularly.*

936. *The exterior form of the horse differs much, as the uses he is put to vary.* That which would approach perfection in one variety would be deformity in another. The finest framed racer that ever bounded over the turf at Newmarket, would cut a sorry figure in a London coal waggon; while one of Barclay's splendid specimens of the heavy draught-horse would be even more misplaced if entered for the Derby. To be able to form a tolerably correct estimate of the capability of each variety of the horse to perform the duties required of it, from a view of the general figure, constitutes the very feather in the cap of the horse amateur. But to accomplish it requires much experience, with a long habit of observation, comparison, and reflection.

937. *Reducing the proportions of the horse to an arbitrary scale of measurement* was a favourite practice with the French school. It was particularly so with the celebrated Bourgelat. Some English veterinary surgeons also, after the manner of their neighbours on the other side of the channel, have taught that the horse (leaving the head and neck out of the question) presents a quadrangular figure; not, however, one strictly equilateral, but one whose horizontal limits somewhat exceed the perpendicular; and in general cases this scale is admissible. Nature will, however, not be restricted to any artificial proportions, as we see in many excellent horses, which defy the plumb and line. There are in the animal machine such compensating powers for apparent aberrations from any fixed mensural scale of perfection, as to forbid our placing much dependence on it.

938. *A comparative scale of proportions between the several parts is*, however, useful for the guidance of artists, and particularly for such as have occasionally to introduce horses in their works, but who have not always the means of immediate recourse to the living animal. Such persons are under obligation to the late Mr. Richard Lawrence, at once an artist and veterinary surgeon, for the proportions of Buckfoot, an Arabian of "high form," which may be met with in the first number of the *New Sporting Magazine.*

939. *To exemplify the different proportions of horses*, we have introduced the figure of a thorough-bred horse and that of a cart-horse in one square (*fig.* 149.). Had each occupied an appropriate square, the linear measurement of the racer would have extended his square horizontally, as that of the cart-horse would have increased his vertically. Nevertheless the exemplification of their different proportions is more strikingly displayed by this method than by any other. It will at once be evident how varied are the proportions of these horses, insomuch that, independent of differences in bulk, no degree of fining down could make the cart-horse approximate to the figure of the racer. The head of the blood-horse, his shoulders, the length of his body, and the angular construction of his limbs, are all decidedly different. The bones of the cart-horse, as we have already noticed, appear immense; but they are, in fact, proportionally weaker than those of the racer, because the osseous portion is less condensed, while the muscles and tendons also of the racer are in proportion much larger and more condensed. Our observations on the organology of the horse will of course apply to every variety of this valuable family; but they are particularly directed to those more generally employed in field sports, as the racer, the hunter, and the hackney; in each of which celerity of motion is required, though in somewhat different degrees and kinds, but in all a capability of continuing the exertion, or, in horsemen's language, "stoutness," or "bottom," is essential.

Sect. IX. *General Proportions of the Race-horse.*

940. *The proper height of a race-horse is greatly dependent on the nature of the work required of him*, consequently, no standard measurement, under these considerations, can be insisted on; and most good judges, we believe, admit this. Darvill, one of our best authorities, is of this opinion; but he at the same time observes, that if a standard height must be named, that of *fifteen hands, two inches,* would probably be better than any other He how-

ever, in this standard, appears rather to bend to what he considers the popular opinion than to express his own; for he says, "I prefer one moderately low, as *fifteen hands*, or *fifteen*

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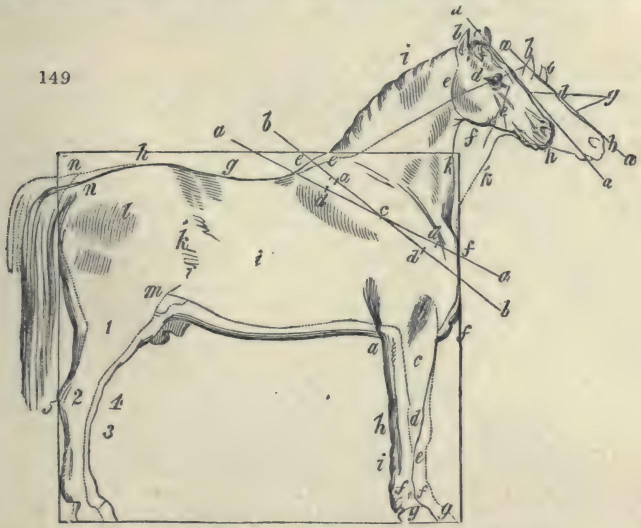


DIFFERENT PROPORTIONS OF A THOROUGH-BRED HORSE AND A CART-HORSE.

and an inch at most." But, as already observed, the *racing height* must depend on the *racing work.* Some full-bred horses attain so great height, as even seventeen hands; but sixteen hands, two inches, is by no means uncommon. Thorough-bred horses of this height are the produce of the southern warm-sheltered parts of the country, where the pasturage is luxuriant, and where the attention of the breeder is particularly directed to the development of the animal form. Such horses attain a very considerable height at a very early period; and at *two* and *three years old* are more particularly engaged, to use the words of Mr. Darvill, "to go into those great stakes run for at Newmarket, as the 'Two Thousand,' the 'Riddlesworth,' and other valuable stakes and matches, almost all of which are run over straight courses of short lengths, as across the Newmarket Flat." These horses, at this early period, have already gone through full training; and nothing but the very high condition they are in can carry them through these engagements, and those of the Derby and Oaks at Epsom. Here, therefore, is one *particular* sort of racing work which we have hinted at; and as racing is now a trade, here we have also a *particular* sort of horse bred for the purpose. Of course the well-being of the animals is quite a minor consideration; and therefore, before four years have passed over their heads, the severity of their training and running exercises has unfitted the majority of them for any thing but being *turned to the stud.* Thus it is that even our sports now become a trade. Tattersal's is our Turf Exchange, where both *bull* and *bear* figure at the West-end equally as they do in the East, in the vicinity of Threadneedle-street. Consols for account, and the odds on the Derby, are equally important as *betting, buying,* and *book-making,* can make these enormous ventures.

941. *The more compact and moderate-sized race-horse,* under these views at least, is therefore to be preferred for such racing purposes as more immediately come within the early intentions for which racing was first encouraged, *i. e.* that of yielding rational amusement, and improving the breed of horses. Such racers, if they do not exhibit sufficient speed in their colthood to vie with the tall lengthy breeds, yet afterwards, becoming fully furnished, they are able to make not only a good run, but a long one, even under high weights. Further, to use the turf phraseology of Darvill, horses of this class are then fit to run "over any sort of course, whether hilly or otherwise; and a horse of this description being, as he mostly is, a round-goer, will in all probability be tolerably handy at his turns; and therefore, whenever such an one is found running in the company of long-striding horses on a small 'cock-pit,' or 'whip-top' sort of a course, he is almost certain to be a winner." If Mr. Darvill shone in one particular more than another, in our opinion it was his judicious appropriation of the work, and the locality to work on, of the different horses he describes. Indeed it should be borne in mind by all practical turfites, that each racer should be sized, framed, and trained according to the particular work he is intended for, in which sound judgment is displayed, and the advantage of the

horse himself is consulted as far as racing is concerned; and, were this to be followed out, our race-courses also would be so made as to best suit the display of the powers of the race-horse to their fullest extent, at the least possible risk of injury to the animal. But were even these discrepancies all removed, it is yet to be feared that the trickery, which unfortunately adheres to the intermediate practices, and sometimes pursues the winning horse to the weighing-house, would, with "cloven foot," step in.

942. *The form required in the race-horse*, independently of all but legitimate views, is that which best fits him for great quickness in the use of his limbs, and capability of extending them over a large surface, united with sufficient powers of endurance to maintain his pace, as long as is necessary to complete his task. A comparative view of the race-horse with other quadrupeds notoriously speedy, will greatly assist in directing our attention to the leading points on which the described qualities mainly depend. The greyhound and hare are both familiar and notable instances of what we assert, and of what we wish to exemplify. The former has a long taper head set on a tapering neck, which is connected with the chest in such a manner as to reduce the air-passages almost to a straight line during rapid progression, tending to assist respiration and to lessen resistance. The hare also, although her head be less slender and pointed than that of a horse, yet during her running she so places it as to accomplish both these purposes; while the obliquity and placing of her fore limbs, when acted on by the strength of her hind quarters and length of hinder legs, enable her to make her progression almost saltatory. Viewing the hare and greyhound together, we cannot fail to observe the strong loins of both these animals, their angular and well furnished thighs, with the length of the real leg in both, which approximates the hock with the ground, in like manner as the knee is placed before; these are all equally important objects of comparison. Treating the subject generally, we may observe that the racer of the present time is not altogether the compact and bony animal of former days, although equally well bred. Our present stock are bred lighter, that their action may be more rapid, though less lasting. To produce early development of their racing powers, they are more corn-fed and but little grassed; they are also trained early, which of itself tends to a quicker consolidation of their form, although it is at the expense of its attaining such lasting qualities as might be expected by pursuing the older methods.

943. *The head of the racer particularly*, for obvious reasons, should be small and light. An extra pound placed so far from the centre of motion must occasion a loss of power, and how small an addition to the weight borne has operated injuriously, many experiments in racing have proved. The head should also be angular, the forehead wide, and its beauty is greatly increased when it tapers elegantly to the muzzle, presenting a full-sized mouth, thin lips, and capacious nostrils. Our figures, presented within a square at p. 261. contrast these differences in the facial character between the blood-horse within the dotted line and the cart-horse within the coarse line. The facial line, and that of the forehead in the thorough-bred horse, is seldom arched, in the direct descendants from the eastern breeds, both barb and Arabian, but particularly in the latter, the arching is sometimes slightly reversed. The facial angle of the blood-horse is about 25°, whereas, in the heavy breeds, it is usually 23° only (*a a, a a*). This placing of the head is favourable to progression, as well as in the greyhound and hare, by enabling each, when at the top of his speed, to carry his muzzle almost on a line with his neck and chest, which must greatly facilitate respiration, the grand aid to speed. A similar form, it must be evident, is also favourable for the hunter, and subordinately so for the hack likewise; but in neither of these ought such placing to be carried so far as to diminish the true action of the bit on the bar; as a light and obedient mouth is as necessary to the hunter as it is to the hackney. "The throat of the racer, all good judges allow, should be clear and fine from the root of the ear downwards, presenting a good space between the jaw bones (*e f, fig.* 149.), which should be thin. This hollow between the jaws in some racers is strikingly fashioned like the same parts in a game-cock: an attachment to this form of throat has given some of our turfites a prepossession in favour of what is called the cock-throttled neck in a racer; we cannot, however, agree with them.

944. *The ears* (*b b, fig.* 149.), according to our ideas of beauty, should be small and pointed; and in most of the improved breeds they are so; occasionally, however, and especially in the near descendants of the barbs, they are seen large and somewhat pendent. They were so most particularly in the Godolphin Barb (*fig.* 143. p. 244.). It was to remedy this unsightly appearance in horses that cropping was first employed, until at length it became fashionable. Better sense and better feeling at length banished the cruel practice. The ears are criteria of the spirit, as well as of the temper: we have seldom seen a horse which carries one ear forward and the other backward during his work, that was not hardy and lasting. Being not subject to early fatigue, he is attentive to every thing around him, and points his ears in different directions, to collect sound from every quarter. They are also indications of temper, and a horse is seldom either playful or vicious but his ears are laid flat on the neck. It is fortunate that we are provided with such a warning by an animal that neither wants craft to surprise us, nor strength to render his resentment terrible.

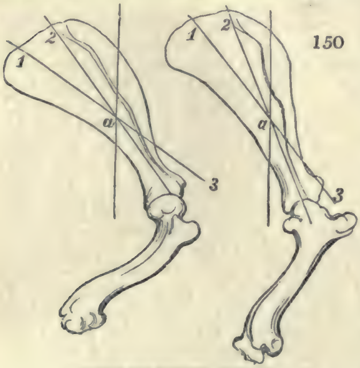
945. *The neck should be rather thin than thick upwards*, but it should be at the same time muscular. Our turf-men are not favourable to high crests in racers; Mr. Darvill even prefers them "a little ewe or deer-shaped." It is, however, essential in all, that the channel of respiration may be as rectilinear and as free as possible. In most thorough-bred horses, nevertheless, the neck is slightly arched, but as it unites with the withers it makes a considerable dip with most horses when in racing form, and more particularly in the aged horse. If, as it is said, the cock-throttled neck be not unfavourable to speed, we object to it in the hunter and roadster, as not only being very unsightly, but also because a reversed neck presents but an indifferent *appui* against the hand, which in the hunter is always a very important point, and in the hackney is indispensable.

946. *The withers* (*e e*, *fig.* 149.) are formed by the long transverse processes of the dorsal vertebræ (*y*, *fig.* 111. p. 172.), and as their use is to serve as levers to muscles which elevate the fore limb, so their length, which is commensurate with the height of the withers, must be of great advantage to the progression of the racer. In the slower gallop, and in the trot, it is this form that carries horses well above their ground. "The shoulders of the racer," Mr. Apperley (Nimrod) says, "should go into his neck at the points *unperceived*, and his back should sink a little behind his withers, for horses with a straight back are generally deficient in their fore quarters." This, we conjecture, few will deny. Mr. Darvill however says, "for a saddle-horse," by which we presume he means a hunter or hackney, "this may be all very well; but for a race-horse, to have strength and liberty of stride, the back should be straight and moderately long." To the hunter and hackney, elevated withers and obliquely directed shoulders are equally favourable to the safety of progression, and also to its rapidity, by increasing the powers of the levers, which elevate the fore limbs preparatory to the propulsion of the body forward by means of the hinder extremities. It has however been thought, that a fore-hand, somewhat lower than the croup, is favourable to speed, though unfavourable to its safety; and a comparison with the formation of the fore parts in other animals of rapid progression, certainly shows a general tendency to increased height of the hinder parts. The greyhound and hare are so formed, the latter in a remarkable degree; and Eclipse (*fig.* 141. p. 237.), among horses, is a notorious instance of disparity in height between the fore and hind parts. The stag may also be brought forward, as an animal remarkable for his swiftness, where this peculiarity prevails. In the kangaroo the disparity between the fore and hind quarters amounts to a monstrosity, were we to measure it by an equine standard; but the principles of speed are illustrated as well in the one animal as in the other. It is the uniformity of the progression that suffers, which is affected in the degree of the departure in the formation of the animal from the common standard we have noticed. We shall have other occasions of elucidating these points still more particularly, when we treat of the paces of the horse: what we have now advanced is not to be construed into an admission that sufficient height in the fore-hand generally is unimportant even in the race-horse; but that it can be better dispensed with in him than in any other variety of saddle-horses, because the stridings of the racer being usually confined to smooth turf and a limited length of exertion, it follows that, provided his shoulders are broad and obliquely situated, a moderate height of fore quarters only will often be found sufficient to receive the propelling force of the more powerful and more extended hinder extremities. For the hunter and hackney, on the contrary, elevated fore-quarters are necessary, for there safety in progression is as important as speed in action.

947. *The shoulders* (*a a*, *b b*, *fig.* 149.) are apt to be confounded with the withers, a circumstance which often leads to much error in justly appreciating the power and operation of the fore quarters. The withers may be high, at the same time that the shoulders may be narrow, straight, and altogether badly formed. The shoulders, to be perfect, should be muscular, but by no means heavy with extraneous cellular matter; for it is by the muscles of the shoulder that the action of the fore limbs is principally effected. It is, therefore, of much consequence that the muscular markings and prominences should be strong but not puffy. Immense muscular power is also necessary for the suspension and connection of these parts, as well as for their motion, the shoulders in the horse not being connected with the body by any bony articulation, but wholly by a muscular union. Large fleshy masses unite the broad expansive shoulder-blade by its upper and inner surface to the chest, while other powerful muscles below suspend, as it were, the machine between them; by which admirable contrivance perfect elasticity is preserved. The uneasy seat we experience when riding on or near the croup of the horse, where the hinder limbs are connected with the body wholly by a bony union, will illustrate the difference between the elasticities of the one connection and the other. When the body is propelled forward, its tendency to the centre of gravity is counteracted by the fore extremities, which then receive the mass: had the shoulders, therefore, been articulated like the thighs, the machine at every motion would have experienced a powerful and hurtful shock; but, formed as they are, the strong muscles of these parts receive and sustain what the hind quarters force on them during their action. This connection of the shoulders with the body, it may likewise be observed, is not rendered strong by the power of the muscular masses alone, but also by the geometrical situation of the

scapulæ or shoulder-blades themselves, which being approximated above, form a kind of elliptic arch, which receives the trunk within the expanse of its arms; consequently, the greater the force applied, either by gravitation or impulsion, within certain limits, the greater will be the capability of the shoulders to support the weight thrown on them.

948. *Obliquity in the situation of the shoulder is essential to the speed of every animal,* where the pace employed is uniform and continuous, as in the running of the race-horse, the coursing of the hare by the greyhound, and of the hare herself to distance the dogs; in each of which the general inclination of the shoulder is considerable. Examples of an *oblique* and of an *upright* shoulder-blade are represented in *fig.* 150. In each the centre of motion is denoted by *a*, as the varying lines (1, 2, 3) mark the different degrees of motion or extension which is allowed to each limb as it rotates more or less on *a*, its centre of motion. By this view it is not difficult to understand how the angularity of the position of the shoulder-blade should also elevate the whole limb, and thus render the progression safe: it also increases the speed of the pace, by necessarily advancing the whole limb farther forward. On this subject, the author of the *Treatise on the Horse* in the *Farmer's Series* well observes, "The slanting direction of the shoulder accomplishes another very useful object. The muscles extending from the shoulder-blade to the lower bone of the shoulder, are the powers by which motion is given to the whole of the limb. The extent and energy of that motion depend much on the force exerted or the strength of the muscle; but there are circumstances in the relative situations of the different bones which have far greater influence. Let us suppose that, by means of a lever, we are endeavouring to raise a certain weight; the point of the shoulder, the shoulder-joint, is the pivot or centre of motion; the leg attached to the bone of the arm is the weight; the shoulder-blade being more fixed, is the part whence the power is exerted. These lines approach much more nearly to a perpendicular in the oblique than in the upright shoulder. In the upright shoulder, the shoulder-blade and the bone of the arm are almost in a straight line, and the real action and power of the muscle are most strangely diminished. In this point of view the oblique shoulder is most important: it not only gives extensive action, but also facility of action; the power of the muscles is more than doubled by being exerted in a line approaching so much nearer to a perpendicular." (P. 231.)



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OBLIQUE AND UPRIGHT SHOULDERS.

949. *The lower portion of the shoulder-blade articulates with a bone,* which constitutes the true arm of the horse, but which is short compared with the human arm, and is so concealed by muscles, and by the obliquity of its situation, as to be apt to be overlooked. The consequence of this is, that what is known among horsemen as the arm of the horse is, in fact, the fore-arm. The humerus, or true arm bone (*m, fig.* 111. p. 172.), it will be seen, forms an angle with the shoulder-blade, and extends obliquely backward as the arm bone inclines forward; and, usually, the degree of inclination of the one regulates that of the other. The motions of this bone are necessarily confined to a removal from its inclined point backward to the perpendicular line of the body. When this bone is too long, it carries the fore-legs too much under the animal; and if this defect is united with a shallow upright shoulder, the evil will be increased. It however fortunately happens, that both the angle and extent of these two parts are usually regulated by each other.

950. *The arm of the horse, popularly so called* (*c, fig.* 149.) by a reference to the *Skeleton,* will be distinctly seen to be the fore-arm. It will also be observed to be at first formed of two bones, but which unite together by age. The upright portion is called the radius (*o*); the shorter and hinder bone is known as the ulna, which terminates upwards in a projecting portion that forms the elbow (*n*). Length in this portion of the limb is very important, where much speed is required. It can hardly therefore in the race-horse, nor even in the high-bred hunter of the present day, be too long. We have already pointed out analogical proofs to show how instrumental this formation is in accelerating motion, by drawing the attention to the same part, both in the hare and greyhound. A negative proof also of its importance may be brought forward, by the preference given by manège masters to a short arm, where the cadences of the school require that a round and graceful port of the whole limb should take the place of speed in a series of flexions and extensions, rather perpendicularly than horizontally directed.

951. *The importance of the muscularity likewise of these several parts must be apparent,* by a slight consideration only; and hence, although we first breed, and then train the race-horse until he is as free from superfluous weight as possible, we yet require in his structure

as much bone, muscle, and tendon, as we can get; all of which are necessary to enable him to continue his vast exertions beyond the velocity of a start. The graceful swell at the lower part of the shoulder marks the capability of the extensors of the true arm, in acting to great advantage, implanted as their tendons are into the point of the elbow. The arm below likewise requires to be equally muscular, wide, and well set out from the chest.

952. *The knee (d, fig.* 149.) *of the horse corresponds with the human wrist.* Like the joints, generally, it should be large, by which the surface of muscular and ligamentous contact becomes increased, and the stability of the limb in proportion augmented. By this form also the tendinous insertions are further removed from the centre of motion, whereby their power is greatly increased. The knee of every horse, preparatory to purchasing, should be carefully examined, to see whether the skin has been broken by falls; and great caution is necessary in this examination, for the hair sometimes grows so well over the scar as to leave it hardly discernible, and horse-dealers also contrive to hide the blemish by blackening the part. It does not however follow, that a mark or scar always indicates a stumbler, and persons are too apt to forget that the safest horse may, by an unavoidable accident, fall; which circumstance will never influence his future manner of going, unless the cicatrix should be of such extent as to interfere with the motion of the joint: if, therefore, the arm and fore-arm be strong, the fore-hand high, and the horse show good action, he should not be rejected wholly for an accidental blemish.

953. *The canon, or shank (e, fig.* 149.) carries the limb down to the pastern elegantly light, straight, and strong. Much stress is deservedly laid on the necessity that this part of the leg should be wide when viewed laterally. Viewed in front, its being thin is favourable, because, made up as it is principally of bone and tendon, any addition to it beyond these must consist of useless cellular matter, or otherwise of matter worse than useless, as being placed there by disease. Any thickening of the part, generally or partially, should be looked on with suspicion; as, if natural, likely to interfere with motion without adding to strength, or, if accidental, as a mark of acquired injury, the effects of which are likely to remain. In the bony skeleton may be seen, within and behind the knee, an apparatus in a protuberant bone, destined to remove the acting ligaments and tendons from the centre of motion, by which great advantage is gained by its strengthening and facilitating their flexions. It is a defect in this conformation that occasions horses to be *tied in under the knee*, as this defect is usually termed. The limb below the knee in this case, instead of proceeding downwards of an uniform width, is seen to become suddenly narrow, immediately on parting from the knee. Such horses are invariably found to bear exertion badly, their legs at an early period become bowed or arched, and totter on the slightest exertion. Some few speedy race-horses, it is true, are seen with this formation; but such invariably either break down, or become irrecoverably strained. In both the hunter and the hackney it is also, for the same reasons, a very serious defect, and one never to be overlooked. Proceeding downwards we have to remark that, in the degree that length is required in the arm, in such degree should the canon be short. The knee of the hare and the greyhound, as the sportsman well knows, are placed low in the limb; and if he would have either the racer, the hunter, or his hack, to show only his tail to his antagonist, he will learn to appreciate rightly a short canon.

954. *The pasterns of the racer (f, fig.* 149.) should be long and sufficiently oblique to afford elasticity, without danger of rupturing the tendons, which accident will nevertheless too often occur, be they as strong as they may. Length of pastern distributes the gallop of the racer through a more extended line; and while it lessens concussion, it probably converts the foot into something of a prehensile organ, by implantation of the toe in the ground. It is thus that the greyhound with cut claws is always rendered less speedy. In the hunter, it is evident that long pasterns are somewhat less desirable; and particularly where a welter weight is to be carried by a horse with long pasterns during a long and a sharp burst, breaking down is too likely to occur. The contrary defect is however equally objectionable, and an upright pastern proves injurious to the horse, unpleasant to the rider, and a bar to speed in every pace, but particularly in the gallop.

Subsect. 1. *The Feet of Horses.*

955. *The feet of the descendants of the eastern horses* are usually small in their diameter. It is rare to see a racer with a wide open foot; and where it has been of this form, it is apt to be correspondently low in most cases: and it must be apparent that such a horse, by losing an inch at each stroke of his gallop, would, in a four-mile heat, be much disadvantaged against another with feet of the usual height, A firm, well formed, and full sized foot is, however, essential to the hunter and hackney; for the small foot sinks deep into moist ground, and is but too apt to be tender likewise from contracting thrushes or corns.

956. *The feet of horses present in their united functions a series of springs with great complexity of structure.* An unreflecting observer considers only the horny box, and perhaps attaches as little merit to its mechanism, as he would to the well turned wooden leg of a Greenwich pensioner: but a little examination will convince him that all the complexity,

all the admirable mechanism displayed in the assemblage of four fingers and a thumb, are concentrated within this horny box and its appendages. As the parts which compose the hind and the fore-feet do not materially differ, a description of one foot will serve for the whole.

957. *On examining a perpendicular section of the foot and pasterns* (*fig.* 151.) there appear the coffin bone (*a*), the navicular or nut bone (*b*), the coronary or little pastern bone (*c*), the larger pastern bone (*d*), the back sinew or great flexor tendon of the foot (*e*), the same tendon sliding over the navicular bone (*f*), its termination or insertion into the bottom of the coffin bone (*g*); the elastic matter of the sensible frog (*h*), the insensible or horny frog (*i*), the horny sole (*k*), which includes the parts of the sensible foot; the outer wall of the hoof (*l*), the elastic processes (*m*), the attachment of the extensor tendon to the coffin bone (*n*), and its attachment to the coronary bone (*o*), which completes the section.

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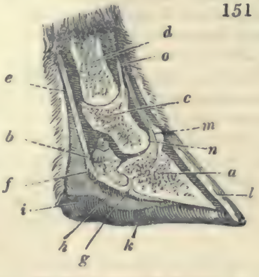

SECTIONS OF PASTERNS OF FOOT.

958. *The coffin bone* (*a, fig.* 151.) adapts itself to the figure of the hoof, or rather is adapted by nature to this eligible form. The eminence in its front receives the insertion of the tendon of the great extensor muscle of the foot. This important muscle has its upper attachment to the humerus or arm bone, where it is principally fleshy; but, as it passes downwards, it becomes tendinous, expanding over every joint, both to prevent friction, and to embrace and give firm attachment to each bone with its opposed bone, by which a firm connection of the various parts is maintained, and a simultaneous movement of the whole limb is effected. In the hinder limb this extensor tendon, and its two less or tendinous adjuncts arise from the tibia, and in part from the femur, but in their origin are fleshy. To the sides of the coffin bone are attached the lateral cartilages, and around its surface are marks of the attachment of the laminated substance.

959. *The coronary or small pastern bone* (*c*), is seen to rest on the coffin bone (*a*), with which it articulates by its lower end; its posterior part also may be seen to be closely articulated, both with the coffin and with the navicular or nut bones (*f*), whose attachments to them are effected by ligaments of great power and some elasticity. Nor is it possible to view this horny box and its contents without being struck at the admirable display of contrivance and mechanism which meets our eye. We are apt to say, " as strong as a horse; " and some of us use horses as though they were made of imperishable stuff; but surely, when we well consider the subject, we shall see both the necessity and the morality of using them with discretion.

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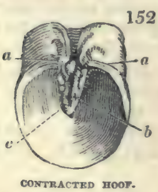

CONTRACTED HOOF.

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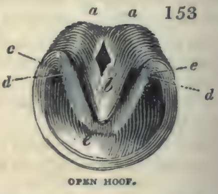

OPEN HOOF.

960. *The hoof itself is conical*, or rather, as Clarke observes, slightly truncated; and is a secretion, as well from the vascular parts of the foot as from the skin, as our nails are formed from the portion of skin called the quick. The structure of the hoof is firm and fibrous; externally it is plane and convex; but internally concave and laminated. The quarters are the lateral parts. As the horn approaches the heels it becomes soft, and is reflected inwards. The heels are parted by the horny frog (*b, fig.* 153.), and without the frog on each side, the hoof inflects its fibres to form the bars which are seen on the under surface (*c, fig.*153.). In a healthy foot (*fig.* 153.) the heels are round, wide, and smooth (*a a*), the frog fully expanded (*b*), the bars or binders distinct (*c e*), no corns in the usual angle (*d*), the sole broad and concave (*d*). In a diseased foot (*fig.*152.), the heels are high and drawn together by contraction (*a a*), the frog narrow and filled with fissures from contraction and thrush (*b*), and the sole greatly shortened in its transverse diameter, which is morbidly counterbalanced by the increased heights in the truncated form (*c*). When the hoof is removed, the sensible or fleshy sole (*k, fig.*151.), above which it immediately lies, presents itself, covering the whole of the horny sole, except so much as is taken up by the sensible frog (*h*). This part is exquisitely sensible and vascular; and thus we learn why injuries to it from punctures produce such serious effects, and why very slight pressure from contraction of the hoof gives so much pain. The sensible frog and the sensible sole form the insensible frog and sole; but when from pressure, too much moisture, or other causes, the sensible frog, instead of forming horn, secretes pus or matter, as in thrush, the structure of the whole becomes injured; and the horny frog, thus losing its support, gradually wastes and decays. It is therefore evident that no thrush can be entirely harmless, as is erroneously supposed. Above the sensible frog and sole is the great flexor tendon, or back sinew, inserting itself into the vaulted arch

of the coffin (*e, fig.* 151.). This important tendon arising from its parent muscle above the knee, whose origin is taken from the *humerus* and *ulna*, in its passage unites with an assistant flexor, but which latter is principally distributed to the pastern bones; while the *perforans*, so called because it is perforated by the assistant flexor tendon, is inserted into the vault of the coffin; in the posterior extremities, the attachments of these two leading flexors and a smaller *lateral* one are from the femur and tibia.

961. *The sensible laminæ.* Around the surface of the coffin bone it has been noticed that there are linear indentations, to which about five hundred semi-cartilaginous leaves are attached. Each of these is received between two of the horny lamellæ, which line the interior of the horny hoof; and, when it is considered what a vast surface of attachment is formed by these means, the strength of the union will not be wondered at. No common violence can separate these parts, and their use as so many springs (for they are extensile) to support the actions of an animal, at once weighty, strong, and extremely agile, must be apparent. The vessels and nerves of the foot are derived from the metacarpal arteries, veins, and nerves, which pass behind the pastern, when the main trunks divide to proceed to each side of the foot, and are ramified from thence throughout. It is a division of the metacarpal nerve, on each side of the lesser pastern, or on each side of the larger, as occasion suits, which forms the *nerve operation*, now in vogue as a remedy for founder. (See *Veterinary Outlines*, p. 588.)

Subsect. 2. *The Trunk and Hinder Extremities.*

962. *The form of the trunk or body of horses* (*g i, fig.* 149.) like their other parts, will best answer the purposes required of them by their owners, by certain specialties of formation. The body of the race-horse, for instance, should be rather long: if he were equally "trussed home" as the hackney, he could not bend his hind quarters sufficiently, nor bring his legs so well under him; his abdominal viscera would also be injuriously pressed forwards on his lungs. His chest, in all cases, should be deep, but scarcely so wide as in the hunter and hackney; for in the racer its depth will allow sufficient room for respiration during his violent, but comparatively short, efforts. But for the hunter and hackney, the chest requires greater circular capacity, to insure continuance to their longer exertions. The fore quarters of the greyhound are deep but flat; and thus, after a two-mile course, he is apt to be winded. The foxhound, on the contrary, although he moves with great velocity, yet he can continue at nearly the same rate of speed for almost forty minutes without a check, for his chest is deep and round. The carcass of the hunter should be a compound of the length of the racer and the "ribbing home" of the hack; some length being required to give him speed, and not too much to weaken him by a too lengthy stride, or by the difficulty of "keeping him together" over stiff soils, and towards the close of a long run.

963. *The loins of every horse* (*k, fig.* 149.) *should be strong*, and sufficiently broad to give a considerable surface of attachment for the important muscles of the back and loins. The quarters should be long, and ought to show a certain degree of squareness also, and that even in the best bred race-horse; for it is an indication of muscularity, and consequently of power, to act on the hinder extremities. The tail should be "set" nearly on a line with the croup. Indeed this placing is a natural consequence of length in the quarters; and we find it thus situated in most animals of speed. In no part of the horse does that significant term "blood" show itself more than in the setting on of the tail (*n n, fig.* 149.).

964. *The hinder extremities* (*l m*, 1, 2, 3, 4, 5, *fig.* 149.) deserve also an attentive consideration; in which survey it will be prudent first to bear in mind, that, as the fore extremities may be regarded as especially designed to receive and sustain the weight of the body, and to bear the momentum of progression thrown on them, so the hinder extremities may be considered as the essential propelling organs. Having themselves less to support, they are flexed into considerable angles, which angles are operated on by masses of muscles of immense power. It is also a curious but wise provision in the mechanism of the limbs, that the angles of their bony fabric should be reversed; for, by referring to the figure of the skeleton it will be seen, that while the scapula or shoulder-blade inclines backward, the ilium or haunch bone is directed forward. The inclinations of the humerus or arm, and of the femur or thigh, are equally reversed; and, in a slighter degree, the same is observable in the corresponding bones immediately below; by which arrangement the trunk is suspended in equilibrio, instead of falling backward or forward, as might have happened, had all the angles been consentaneous. A careful view of the skeleton is particularly recommended to more clearly exemplify these counter inclinations.

965. *That the hinder limbs are principally concerned in progression*, in rapid prgression particularly, is again evident from the attention that nature pays to their formation, and to their great strength in all cases where speed is required; for let an animal, destined for speed, be ever so lightly framed in other respects, yet great power will be always displayed in its hinder parts. Thus in blood-horses, which are derived from the most perfect breed we are acquainted with, not only are the loins wide, and the croup long, but, viewed from behind, these horses will be found little less wide in the thighs than in the hips; and of all

the distinctive marks between the high and the low-bred horse, this is the most striking and characteristic. A good judge, under every disadvantage, immediately discovers a portion of breeding by this appearance of extent and power in the muscles of the thigh alone. The greyhound offers us a corroborative instance of similar form and intention; in the kangaroo it is even more striking.

966. *The real thigh of the horse* (*l m*), like the true arm, is so concealed by muscles as not generally to be known by that name; but a view of the skeleton will readily enable the reader to acknowledge its designation. It will be found, as has been noticed, reversed in its angle of inclination from the humerus, or real arm, to which it corresponds, being articulated above, at about the same level, but descending considerably lower, and with a greater inclination, by which elasticity is gained; and the acuteness of the angle resulting therefrom is favourable to the power of action. This bone being able to pass beyond the perpendicular backward, likewise assists these intentions, particularly when the croup, hips, and thighs, are well furnished with muscles. A reference to the figure of the skeleton will show a powerful protuberance which rises above the articulation, which is directed backwards, much after the fashion of the bone of the elbow, to which its use also assimilates, for it receives the insertions of some muscular masses from the loins of immense strength. "By this insertion," says an ingenious writer, "the power is close to the centre of motion; the weight supposed to be concentrated in the middle of the limb is far off. It is more than thirty times as far as the power, and this muscle must act with a disadvantage of more than thirty to one; or, if the hinder extremity and the weight of the trunk above amount to six hundred pounds, the force applied, or the power of the muscle, must be equal to thirty times six hundred, or eighteen thousand pounds. The numerous origins of these muscles, and the extensive surfaces whence they arise, and their immense bulk, render them equal to this; and then, as we have demonstrated with regard to the flexor muscle of the arm, what is lost in power is gained in velocity; for, while this portion of the upper thigh bone moves rapidly through a certain space, by the powerful contraction of the glutæi and other muscles, the extremity of that bone moves through thirty times the space; and the extremity of the whole limb, or the foot, moves through more than one hundred times that space; and hence results, and hence only could result, the speed of the horse." (*Farmer's Series*, p. 261.)

967. *The lower bone of the thigh*, so called among the generality of horsemen (1), is in fact the leg, as will be seen by turning to the *Skeleton*, p. 172. This part of the extremity should be both long and well furnished with muscle; the former to give length of stride, the latter to operate the propulsion of the body forward.

968. *The hock* (2, 3, 4, 5, *fig.* 149.) is a very powerful agent in progression, and the wider its lateral surface, and the nearer it approximates the ground, the more advantageously it operates. On viewing the articulation of this complex joint in the skeleton, it will be seen that the lower head of the true leg bone furnishes various prominences, which are received into corresponding depressions of the astragulus, in such a manner as to form a complete hinge, which hinge is confined to lateral motion. This implantation of the bony portions within each other is admirably adapted to give strength to the articulation, while the obliquity of the descent of the tibia, or true leg bone, tends to lessen the concussion of violent exertions, which is still further decreased by being diffused throughout the several bones of this important joint. The point of the hock (5) is formed of the calcaneum or heel bone of human anatomy; and its operation being most important, the perfection of its form is of great consequence to the progression of the animal; for in the greater or the lesser degree that this bony process extends itself beyond the other bones (which degree is measured by the *breadth* of the hock, 4, 5), so do the tendons inserted into it act with a longer or shorter lever, and consequently with a greater or lesser increase of power, or purchase, as it is called.

969. *The remaining portions of the hind limbs*, to be perfect, should unite strength with elasticity. The flexor tendons should be large and well detached from the bone, as in the fore-legs; and the pasterns, while they should possess sufficient length and angularity, should not do so in a degree sufficient to endanger their solidity under violent exertions. As regards the racer, the hind limbs are peculiarly important, for on their construction depends the tardiness or the speed of their motions. This is exemplified in all living animals, from the diminutive flea, which makes a bound three hundred times its own length, to all other saltatory quadrupeds, from the jumping of the jerboa to the speedy progression of the kangaroo, which is wholly operated by the flexion and extension of the vast angles his hinder extremities are capable of making. These hints are given to bespeak our especial attention to the length and strength of the hinder extremities when we examine a horse.

Subsect. 3. *The Colours and Markings of Horses.*

970. *The colour of horses being derived from their hairy covering, is necessarily very varied.* Numerous conjectures have been entertained as to what was the original colour of this animal: but the inquiry on the subject has not been attended with success; for the horse is seen to perform all his functions under any tint; though fancy, and perhaps experience,

has appropriated particular constitutional properties, and even mental qualities, to some hues more than others. The various colours of horses would seem to be truly original and inherent; for such of them as have, from a state of domestication, been suffered again to run wild, have retained the colour they carried with them, although their form has altered, by being submitted to the agencies of climate. Neither have the original horses of different countries, according to the accounts of travellers, exhibited in this particular any individual characteristic. The horses of the east are not darker than those of the north; on the contrary, we have white Arabians, and we procure the darkest breeds from the north of Europe, while in Russia bright bay is as common a colour as any other. Geographical distribution is not, however, wholly without its influence on the hair; for our heavy breeds, drawn from the northern parts of Europe, are very frequently black; but a full-blood black horse is very seldom met with. Age has likewise a powerful effect on the tinting of the hair: that of the colt alters many shades; in some cases it becomes much lighter, and in others altogether much darker, as the adult period arrives. But the alteration which takes place between the time of full growth and that of old age, is invariably from a darker to a lighter hue.

971. *The colours of the parents, among horses, appear to be nearly divided in the offspring;* to which adherence, in the propagation of the external covering, we are indebted for the endless variety of shades found among them. If nature, in these varied markings, had personal beauty really in view, as from analogy we might suppose, it would then be natural to conclude that the original horses all had it; and as a contrasted tint of mane and tail is common to some colours more than to others, as the sorrel, light chesnut, bays, &c. can any conjecture be thence drawn as to the prevailing hue of the primogenitors of the genus? Besides these contrastings of colours, we may add to such markings as are natural to most horses, the dark dorsal stripe of some breeds, and also the bandings or stripings of the legs, which are apparent in some, more particularly on the duns. The humeral *cross* stripe is principally found on the ass; nevertheless faint traces of it are occasionally seen on some horses, which, like some other anomalies, may be rather considered as minute links of assimilation to other more remote members of the genus. A still more usually contrasted marking is found on the joints, which are in many horses several shades darker than the rest of the body, and in some others altogether black. The dappling in the grey, the bay, the brown, &c. may be regarded as original markings likewise, intended, like the spots of the tiger and panther, to add to the beauty of the animal, and cannot be considered as arbitrary deviations from nature, gained by domestication or crossings in breed. On this subject it may be observed, that there is a sensible difference between the markings imprinted by nature, and those which are either accidental, or added by artificial agencies in operation since the subjugation of this animal. The former please every eye; we receive them habitually even as beauties, and they never offend; whereas, most of the accidental markings, and such also as appear to be the consequence of cross alliances, or other effects of domestication, however custom may have forced on us the adoption of them, are most of them found to prove unpleasant to many eyes. Piebald horses are displeasing to some, and others can never become reconciled to the black-spotted. Extensive markings of white on black horses offend all, and hence, without doubt, were not original. Hair is likewise influenced in colour by the skin it adheres to; thus, thin-skinned horses have light hair; and, where there is white hair, there are usually light eyes.

972. *Divisions of the colours of horses* have been made into simple, compound, and extraordinary; and each division may be adopted for convenience, but the classification is by no means precise. Buffon calls the simple colours, white, dun, sorrel, bay, and black, to which ought to have been added the chesnut. White and black are not unfrequently extended over the whole frame; but the dun and sorrel are commonly found united with contrasted markings; and the bay usually presents the mane, tail, and joints black, unless it be when the latter exhibits white markings. The chesnut, in all its varieties, is found occasionally entire; but the dark tint of it is more frequently unmixed than in any other colour, the white and black even not excepted.

973. *Compounded colours in horses* are the grey, the mouse, the roan, the red roan, and the grey roan or flea-bitten roan, to which might be added such bays as are dashed with black, and such bays and browns as become much lighter towards the bellies and flanks, as well as such dark browns as have very bright tan muzzles, &c. The duns are also somewhat compounded when they are *listed*, as is very frequently the case, around the arms and along the back. Extraordinary colours are the tiger, the piebald, and the spotted.

974. *Simple colours.* White is by some not considered a fixed colour in horses, and is supposed to be always produced by age; but this is erroneous, for we have ourselves met with instances of pure white young horses, although it must be confessed, that an original white horse, compared with such as have become so by age, is as one to some hundreds. The colt colour of the white horse is a light grey, universally spread; but in such white horses as have become so only by age, they were, as colts, of a more shadowy grey; and we believe in them it is always accompanied with a much deeper tinting of the joints than that of the body colour generally.

975. *The dun has numerous degrees of intensity:* the lighter is frequently accompanied with a dorsal list, and many are very favourable to this mark; and we believe, with them, that it does not often accompany a very bad horse: but in a general point of view, expe-

rience has not stamped dun horses with desirable qualities. Dun horses are of two kinds, those with white manes and tails, and often white markings on the face and joints, and the darker dun that exhibits mane, tail, and joints almost black, added to which the muzzle and the tops of the ears exhibit a strong tinge of the same hue. The mouse colour, by some styled a dun, is as the term implies of a leaden hue.

976. *Bay is a most esteemed colour*, and the imaginative Buffon conjectured that it was the original hue of the horse. There are various shades of bay, as the bright, the dark, the dappled, and the brown. The bright bay is a beautiful tint, and is often accompanied with a black mane and tail; and occasionally the bright bays have a dorsal listing also. Some bays are singularly glossy, and shine in the sun with a sparkling gilded richness. The dark bays, in addition to black manes and tails, have their joints, and often their legs, from the knees and hocks, black also. The dappling of bay horses, where it exists, adds much to their beauty, in some it is faint; in others it is more conspicuous; but in all is pleasing, and by most persons greatly admired. The brown bay is with much reason in great estimation with many excellent judges, who aver that there are more good horses of this shade than of any other: in some of them the muzzles, flanks, &c. are of a tan colour, and such marks, when lively, are considered as additions to the promise of excellence given by the colour generally.

977. *Chesnut appears to be an original colour*, for it is often without mixture, at the same time that the several hairs in many instances present, each, two or more varieties of tint. In the intermediate shade between the bright and the very dark chesnut, the hairs are, as it were, gilded towards their points, which gives them a lustrous brilliancy similar to that observed in some bays. Light chesnut horses have frequently a large intermixture of white markings: in the coarse breeds the whole face is often white; and in all, the legs and feet are apt to be so, which, as regards the feet, renders such markings peculiarly objectionable. The different chesnuts, light and dark, have each very often white manes and tails, which has by no means an unpleasing appearance, though such must be considered as *foul* marks. The lighter shades of chesnut are supposed to betoken debility of constitution, and some facts seem to bear out the opinion; yet the Suffolk punch, which is of this colour, presents a most hardy, strong, and useful race of draught-horse. Dark chesnut horses, as already noticed, are often of the same tint throughout the whole body: in temperament they are commonly considered hot and fiery; and their feet are certainly more subject to contraction than those of any other colour, or of any other variety of the chesnut. We believe that this fact was first promulgated by ourselves: dining several years ago at the mess of a regiment of dragoons, this particular fact being mentioned by us, occasioned much surprise, and many expressed doubts of the general application of it. The days being then long, and the assertion having raised as much interest as doubt, it was proposed by us to adjourn to an evening inspection of the different troops of the regiment. This being agreed to, it turned out that there were found more than twice the number of contracted feet among the horses of the dark chesnut troop than among those of any other colour.

978. *Black, which is not an esteemed colour among us*, admits of different degrees of intensity and clearness. Black horses present all varieties of character, from the most fiery and impatient to the most sluggish and dull. Many persons affirm, that there are more indifferent horses of this colour than there are of any other; and we are of the same opinion: yet it must be allowed that a shining, glossy, black steed, without any white, is very beautiful. A star, however, in a black face is a great beauty, and a small *race* down it is not very displeasing; but more than this constitutes a blemish. A very small portion of white, irregularly stretching over the pastern, and extending itself into the foot, is a lively mark, and not unpicturesque. Black horses which have brown muzzles and flanks are not only greatly relieved in point of appearance by the mixture, but, if markings go for any thing, these may be deemed to afford usually a favourable omen. Many coarse cart-horses have their mouths and flanks of a mealy tint, which is commonly accompanied with white legs.

979. *Compound colours.* Grey horses admit of several shades, or different proportions of white and black, as dappled grey, silver grey, and iron grey. Grey horses are by many valued on account of their beauty: sometimes a slight tint of bay, mixed with white and black, forms a pleasing variety in this colour. Grey horses, like the black, admit of no settled character, but have all the extremes within their range; the darker are however considered the best. The dappled grey is a general favourite for his beauty; and here also the darker the tint the more it is esteemed: the dappled horse, among the greys, retains his colour the longest of any; but, eventually, he likewise must submit to the bleaching effect of time, and approach to a white. The iron grey has sometimes a mane and tail much lighter than the rest of the body, and the difference occasions a very cheerful contrast. Intermixture of red hairs forms the nutmeg grey, a very unpleasing colour.

980. *The roan, which is composed of red and white*, gives much diversity in its tintings, and an equal one in the quality of the horses it characterises: there are excellent roans, and there are many very indifferent ones. The common roan is occasionally intermixed with white in unequal degrees and irregular patches: such are called mealy roans, and have often flesh coloured muzzles and red eyes. The nutmeg roan, the red roan, and the dark, frequently yield handsome and good horses, as well as the flea-bitten, which presents itself on a light grey, or white ground (commonly the former), where small bay spots form the mixture. The strawberry roan differs from the flea-bitten only in having the bay sprinkling more diffused.

981. *Extraordinary colours.* Of these the principal are the black spotted and piebald: the subordinates are, the strawberry, the flea-bitten, the mealy white, and mealy roan. The black spotted are not common as native horses with us, but are much more so in some of the northern countries, as Germany and Sweden. Mr. Karkeek speaks of them as frequent in Asiatic Russia among the Moguls. The black or coloured spots in such horses mostly exhibit two colours, independent of the prevailing tint of the horse: the ground spot is large, sometimes irregular, and may be black, white, bay, or sorrel. The central spot is sometimes darker, and sometimes lighter than the ground spot, but is always contrasted: it may be yellow, chesnut, red, dark bay, &c.; now and then it is white, but this is not common. In England, the piebald is that most frequently met with among those that may be called extraordinary markings; and it usually consists of white and some other colour, placed in different parts distinct from each other, as white and bay, white and chesnut, or white and black. With many these horses are favourites; and the contrast, particularly between the bay and the white variety, is pleasing; that between the chesnut and white is less so; and least of all the white

and black. It will be found, we believe, that there are more pied horses than mares; and it is singular that not only does the mixture show to most advantage in horses of moderate size, but also that very large piebalds are rare. We hardly remember an instance of a thorough-bred piebald horse.

982. *The markings of horses might be considered under two heads,* as superstitious and experimental. The age of superstition is so much on the wane among the inhabitants of cultivated nations, that we hear little now among ourselves of unluckily-marked horses. But in many, probably in most, eastern countries, particularly in Arabia and Persia, some markings are still considered as omens of ill-luck to the possessor, or of evil to the animal. The placing of the colour of what is called the stockinged-horse (as the horse which shows much white on the legs is called) must be critically drawn to certain lines of demarcation to be desirable: when it is otherwise, the animal is rejected. Foals born with some marks are immediately destroyed, however valued the breed. Experimental marks are such as observation has shown to be usually connected with constitutional properties or mental qualities; and these are the only marks which are now regarded by us as worthy of any consideration. To be influenced mainly by opinions formed as to the assimilation of colour with quality will, however, sometimes betray us into error, and good horses may be rejected, or bad ones adopted, by too strict an adherence to received principles on the subject. Experience has nevertheless taught us, that the ratio of qualities, good or bad, is somewhat connected with particular tintings and particular placings of colour. Dark horses of all hues except black, are esteemed the best for durability of constitution and aptitude for exertion. Light-haired horses, on the contrary, like white-haired men and women, are more irritable and weaker than those of darker hues; the hair which appears on the skin after a wound is white, because the part is in a state of debility. The white legs of horses are more prone to grease than the legs of the black horse, and white feet are certainly much weaker and more disposed to disease than those which are dark.

SUBSECT. 4. *The Structure and Arrangement of the Teeth of the Horse.*

983. *The horse,* as is well known, has six incisive or nipping teeth, above and below, in the front of his mouth; four tushes, tusks, or lacerating teeth; and six molars or grinders in the ramus of each jaw, above and below. The mare, not being furnished with canine teeth or tushes, has but thirty-six teeth, while the horse has forty. Each tooth presents a crown, neck, and root. The parabolic line formed by their arrangement in the alveolary sockets, is called the *dental arcade,* of which there is an upper or anterior, and a lower or posterior. Each arcade presents two rows of teeth, which are not however continuous, but are interrupted by the admission of a single canine tooth. For some months before the birth of the colt the germs of the teeth exist within the jaws in a pulpy state. The grinders or molar teeth, to which at this time we mean to confine our attention, are more complicated in their structure than either the nippers or tushes. Each grinder or molar tooth of the horse (*fig.* 154.) is composed of several distinct capsules, according as they are situated, there being usually five in those of the upper, and four only in those of the lower jaw; consequently our figure represents one of the grinders of the anterior or upper jaw, their central portion presenting five black specks, one of which is pointed to by *d.* Variations in these several particulars, however, occasionally occur, but generally they are as we have stated. The matter within these capsules becomes by degrees a bony concrete, during which process the capsule itself is gradually converted into enamel — a substance, as is well known, more intensely hard than the osseous matter it encompasses. To unite these capsular portions in one solid mass, there is yet required a third, or bond of union, which presents itself in the *crusta petrosa* (*e e*), represented by the unshaded masses. This is the substance peculiar to the teeth of quadrupeds, which we have already noticed in our remarks on the teeth of this class generally. The various circumferent lines which mark the investing portions of enamel which incases the whole, are pointed to by *a,* the five black central spots representing the remains of the secreting vessels employed in the gradual formation of the tooth.

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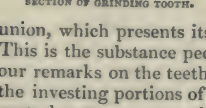

SECTION OF GRINDING TOOTH.

SUBSECT. 5. *The various Indications of Age in the Horse.*

984. *The teeth of horses,* as parts of their bony structure, are little liable to accidental mutation, and compactness renders their wear so slow and uniform that, by common consent, the appearances they present are seized on as the standard criteria of the age of the animal. We have every reason to believe that the ancients formed their judgment of the age of their horses in the same manner as we do at the present day. Both the Greeks and Romans knew the times of the appearance of the temporary and permanent sets of teeth; and they also knew that the adult incisors were cavernous, as well as that the filling up of this dental cavity took place about the same period in all.

985. "*The mark in the mouth,*" as it is called, consists of a funnel-like cavity in each of

the incisor or nipping teeth; each tooth is also covered over with an intensely hard coating of enamel. As this coating of the tooth reaches its nipping edge, it passes over the plane surface, and then dips down to line the funnel-like cavity in its centre. The central hollow thus formed, and thus lined, becomes dark within by incrustation; and therefore, until attrition has worn it out, the horse is said to *have the mark in his mouth.* When the cavity is obliterated, the horse is said to have *lost his mark!* Were the teeth of the horse less durably formed than they are, the degrees of attrition to which they are liable being different, would vary their deterioration, *i. e.* would occasion much irregularity in the wearing out of this *mark.* But their qualities being such that they are not materially affected by variations in food, &c. their wear is found to be nearly uniform, by which they present one general indication in all horses by the regularity of the periods at which these *marks* disappear. To a further explanation of other appearances which these surfaces of the teeth present, it is necessary to state that the apex of the angle, formed by the doubling of the enamel over the edge of the tooth (one limb of which embraces its surface while the other enters the cavity), becoming abraded through its surface, leaves two distinct layers or portions, one which lines the cavity (*a*), and one which bounds the exterior surface of tooth (*b*); the common bony, or rather the horny, matter of the tooth being interposed between them (*a b*, *fig.* 155.). This latter substance being softer than the enamel, wears away faster, and thus leaves two ridges on the nipper surface, which serve the double purpose of cropping the food, and holding it between the teeth when necessary; they also render the teeth a more formidable weapon of offence when pugnaciously employed.

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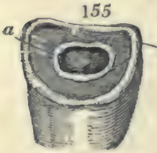


SECTION OF NIPPER.

986. *The horse has two sets of nipping or incisory teeth,* a milk or temporary, and a horse or permanent. The former begins to appear a few days after birth, when two front nippers, above and below, are pushed out, which almost fill the margin of the mouth (see *a*, in *Dental Map*, p. 273.). The jaw, however, enlarges so rapidly as to furnish room, by the fourth or fifth week, for the central nippers, above and below, to push up between the first; and with this complement of *temporary* or *milk teeth,* this sporting and interesting animal frolics around until towards his sixth month, when he becomes further furnished with two corner nippers, above and below. In very forward colts, the dentition partakes also of the early evolution, and thus these corner nippers, known among breeders as the *shell teeth* (from the circumferent edge of each being interrupted), will sometimes appear as early as the fifth month. In cold situations, with a spare supply of generous milk, on the contrary, they are occasionally kept back until two or even three months later. The animal has now its full *colt's mouth* or nippers; and the completion of the process, it must be observed, occurs most opportunely at a time when its wants, from increased growth, become greater, and its maternal supplies less, the milk of the mare beginning about this time to decrease. This *early* or *temporary set* of nippers, as might be expected, differs from the permanent or horse teeth, by being altogether smaller and whiter, and also by having a well marked neck to each, which ends in a more pointed and slender fang; neither have they grooves or furrows on their outer surfaces. They are slightly rounded in front, and hollowed towards the mouth (see *Dental Map*, p. 273.); the cutting surface of each of these likewise rises into a sharp edge in front, which fits it for tearing up the grass; the outer edge slanting over the inner, also affords another point of contact. But these early teeth being less durably framed than those which are to follow, soon show the marks of even the early attrition they meet with; so that, before twelve months have expired, the marks in the front nippers are worn down, or "filled up," as it is frequently called. The *mark*, however, cannot properly be said to be *filled up*, although we have ourselves, in compliance with custom, heretofore used the term. The central enamel, by attrition, wears away, and lessens the cavity, although it does not apparently diminish the volume of the tooth, for that extends itself upwards to meet the wear of its surface; but as the depth of the cavity is definite, while the growth of the body which contains it is indefinite, so the hollow must be subjected to complete obliteration, although the tooth remains of equal length. It therefore *wears out*, but never *fills up*. The middle nippers lose their mark soon after the first year; and in two years the cavity is nearly obliterated in all of them, and they then appear not unlike the horse nippers at eight years old.

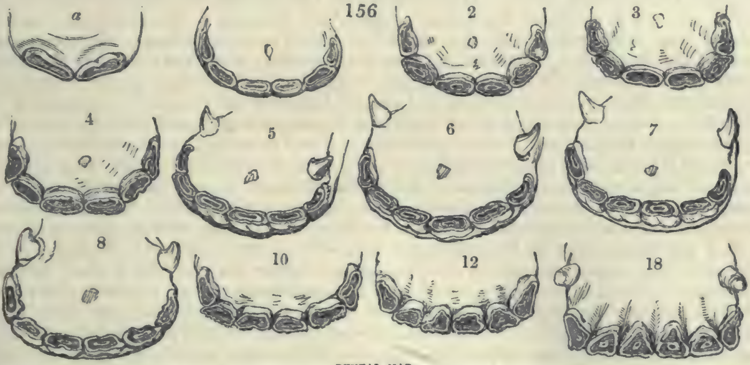
987. *The molar or grinding teeth of the foal likewise offer auxiliary indications of the age.* Certain of them are usually found to be protruded at birth, both above and below; two are almost always present; sometimes there are likewise three; but, more frequently, the third does not appear until a week or two after. Between eleven and fourteen months, a fourth grinder is added, which, however, is not a milk tooth, but a permanent or horse grinder. A full yearling colt or filly, therefore, will usually be found with six nippers and four grinders, above and below, at which time the upper surfaces of the front nippers will have become almost smooth or markless, and the others will be found to be fast wearing also. In the course of the second year, as the second permanent grinders above and below appear, these

rows will be increased to five. Between the second and third years, the first milk grinder falls out, and is replaced by the first of the row of the permanent grinders; and between the third and fourth year the second temporary grinder gives place to the second permanent one, as in the following year, the third and last of these milk teeth is succeeded by the sixth permanent molar, which completes the grinding set.

988. *The permanent nippers*, on which we mainly depend in our examination of the age of a horse, appear in the following order: — The *front*, at from two years and a half to three years; the *middle*, or, as sometimes called, the *dividers*, from three and a half to four years; the *corner*, from four and a half to five years, during which period the tushes or tusks in the horse likewise protrude. The colt now assumes the name of horse, as the filly is henceforward a mare.

989. *The mark in the mouth, or rather the cavity in the incisory teeth*, becomes effaced in the following order: — At *six years old* it is filled up in the *two lower front nippers*; at *seven years* in the *middle nippers*; and at *eight years* in the *corner nippers*, when such a horse is said to be *aged*. More fully to exemplify the age of the horse, we have added a map of the incisor or *nipping* teeth, with the accompanying *tushes* or *canine* teeth, as both appear after the common wear at the periods marked on each, as from a few weeks to 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, and 18 years.

990. *The indications of age in the horse*, by means of the tushes or tusks, are likewise much attended to by some persons. The tusk is to this end examined, as to the pointing of its extremity, the degree of its curvature, and the distinctness of the furrows on its inner surface. The figures in the dental map will show how these appearances alter from the adult period to that of old age. Between five and seven the tusk looses its hook-like incurvation; and by the wearing away of its point its marginal furrows also become effaced. By eight or nine it approaches to the form of a bulbous protuberance; and by ten or twelve it is little more than a smooth button-like knob. By a frequent examination of the tusks, some persons become very expert at forming a tolerably correct opinion of the age. A forefinger can be slipped into the mouth of the most irritable horse, provided it can be done in an instant, and equally well with or without light.



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DENTAL MAP.

991. *Beyond the period of eight years, the indications of the age of horses have been little attended to by the horsemen of this country;* but the French, who have preceded us in most matters connected with veterinary science, pretend to be able to inform themselves, by the subsequent alterations in the form of the body of the teeth, much beyond this period; and if an unerring judgment cannot be given by their method, yet the indications afforded are, nevertheless, well worthy of attention. It must be premised, that the structure of the upper nippers is not altogether the same as that of the lower; their central cavity being deeper, takes longer to efface, and thus yields a longer indication of age. M. St. Bel, our first professor at the Veterinary College, was also the first who taught among us that the cavities in the upper incisor teeth had a gradual and equal wearing of *two years* between the several varieties of these nippers. Thus we were told, that at ten years old the front, at twelve the middle, and at fourteen the corner nipping teeth, present plane surfaces, and had "lost their *mark*." But these periods of obliteration of the dental funnel or *mark* of the upper nippers are not now acknowledged even by many modern continental writers; on the contrary, some of the most eminent among them, instead of two years as the periods of planing between these several teeth, give one only. It is under this view Mr. Percival observes, that he also examines them, as marking the age from the ninth to the twelfth year; and he informs us that he finds his opinion confirmed by observations. We were ourselves formerly much more disposed to place reliance on these prolonged criteria of M. St. Bel than at present; it is unquestionable, however, that the markings of the anterior

nippers are seldom completely worn out by the twelfth year; and without doubt they remain much longer where the horse is only partially fed on the hard meat system.

992. *The successive changes* wrought on the substance and general form of the lower or posterior nippers, after the *central* enamel has disappeared, have also been noted as characteristic of the age to a very prolonged period. La Fosse many years ago described indications of age to be gained by examining the figure of the nipping surface of the lower incisors, long after it has become plane. M. Pessina, professor and director of the Veterinary Institution at Vienna, has carried a similar examination to an extraordinary length, and his descriptions are given with much minuteness of detail. He explains the gradations of years, beyond the age of eight, uniformly by the shapes that the incisors assume in consequence of their wear; which has led him to distinguish four successive periods, "the oval, the round, the triangular, and the biangular." After the disappearance of the central enamel, the table presents a coloured point, that appears before the wear of the funnel is completed, and takes different shapes: it is not even uncommon that, in very old teeth, this root gives place to a small black cavity.

993. *M. Girard has generalised the criteria of age drawn from the teeth nearly as follows:*— At eight years old there is usually complete obliteration of the mark in the nippers, the dividers, and the corner teeth; in the lower jaw the central enamel becomes triangular, and nearer the posterior than the anterior edge of the tooth; the termination of the cavity next the root appears near the anterior edge in the form of a yellowish band, extending lengthwise from one side to the other. At nine years old the nippers appear rounded, the dividers oval, and the corner teeth have become narrow; the central diminish, and approach the posterior edge. At ten years old the dividers are become rounded; the central enamel is very near the posterior edge, and rounded. At eleven years old the dividers have become rounded; the central enamel is hardly any longer apparent in the teeth of the lower jaw. At twelve years old the corner teeth are rounded; the central enamel has completely disappeared; the yellowish band is of more extent, and occupies the centre of the wearing surface; the central enamel, however, still remains in the teeth of the upper jaw. At thirteen years old all the lower incisor teeth are rounded; the sides of the nippers extend lengthwise; the central enamel is found to remain in the teeth of the upper jaw, but it is round, and approaches the posterior edge of the tooth. At fourteen years old the lower nippers assume a triangular form; the dividers become long at the sides; the central enamel of the upper teeth diminishes, but still remains visible. At fifteen years old the nippers are triangular, and the dividers are likewise beginning to become so. At sixteen years of age the dividers are triangular, and the corner teeth begin to be the same; at the same time the central enamel of the teeth of the upper jaw also will, in many instances at this age, be found to have disappeared. At seventeen years old all the teeth of the lower jaw have become completely triangular; but, as we have before noticed, the sides of the triangles are all of a length. At eighteen years of age the lateral portions of the triangle lengthen in succession, first the nippers, then the dividers, and afterwards the corner teeth; so that, at nineteen, the lower nippers are flattened from one side to the other. At twenty, the dividers are of the same shape. Finally, at twenty-one years of age, this shape appears in the corner teeth also. (See Mr. Ganly's translation of M. Girard on the *Teeth of the Horse.*)

994. *Without doubt these extended criteria assist the judgment much,* it is therefore well to mark and to bear them in mind; but it cannot have escaped the observant horseman, that *age in horses,* as measured by a term *of eight years' duration,* is a gross error, and is antedated by, at least, another eight years, as regards the powers of the animal, and the natural extension of his life. Consequently, to those who are simply interested in horses on the score of their utility, and are not called on to certify the exact age for sale, purchase, or matching, the indications yielded by the *teeth* are far less important than those offered in the appearance of the *wear and tear of the limbs.* The practical judge, instead of refusing what is conventionally termed *an aged horse,* provided he has limbs undeteriorated, on the contrary hails an opportunity of possessing himself of such an one, conscious that the reputed age has produced only the best effects, by condensing the solid parts of the frame, and rendering them capable of continued exertion. Such an age is also usually accompanied by a steadiness of temper and disposition, that teaches him to employ his powers judiciously. Where is the fox hunter who fortunately has met with a nine, ten, or twelve-year-old horse fresh on his limbs, that would exchange his hardihood, his judgment, steadiness, and method of husbanding his resources, for the impetuosity, and consequently more early tiring, of the young horse of five? What is eight years in the life of a horse that has been used as he ought to be? It is, on the contrary, not too much to affirm, that all his *points,* that is, all those *external appearances or characters,* on which his most valued qualifications depend, do not show themselves until, according to the conventional notion of age, he is unfit to be looked at. Regard the well marked head of the horse at ten or twelve, how angular! His fine eye, divested of much cellular matter, now stands out without a foil; his thin and thinly clad crest carries itself into withers which seem to rise to receive it. His circular carcass, trussed

up by exercise, unites with hind quarters, square and muscular, supported on limbs equally well furnished. Would you refuse such an one because he had lost a mark from his teeth, when he had gained so many superior marks all over ? — marks which make him at once an interesting and most picturesque object. It is true premature age is apt to overtake our horses, because we use them as though they could not wear out.

995. *The true indications of age* connected with decay are not equivocal, but show themselves in the sunken eyepits and dimmed eyeballs. In such an one the lips will also be thin and pendulous, the under or posterior often extremely so ; the anus, not wedged up by interstitial matter as heretofore, and not sufficiently retracted by its weakened muscles, now projects considerably. The grey horse becomes white, and the darker colours become intermixed with grey, particularly about the head ; the bony processes in every part of the body stare out, and give a rigidity of appearance which well accords with the actual state of the body. So much greater is the absorption of parts now than their increase, that even the diseased deposits of more youthful times, as windgalls and bony exostoses, are lessened or disappear altogether ; the mouth likewise will present some appearances beyond those noted by the French accounts. The incisor teeth assume a more horizontal direction, and project forward ; and the upper corner one is frequently sawed, as it were, into two parts by the action of the lower, which in turn loses its outer edge in the wear ; the whole of the teeth become yellow, are covered with tartar, and stand wide apart from condensation and approximation to their roots.

996. *In forming our opinion of the age from the usual marks*, it will be necessary, however, to take into the account all such circumstances as are likely to mislead the judgment ; the principal of which are the irregularities of dentition, and the arts of breeders, dealers, &c. Although, excepting race-horses, the age of all horses is dated from the first of May, yet we know that they are occasionally dropped in December ; and we have seen others which were said to be foaled in July. These differences must, of course, influence the dentition much, and an early foal will thus have what is called a " forward mouth ;" and when such an one is either reared by an expert breeder, or falls into the hands of a professed jockey, he takes care to make this circumstance turn to account, by converting these few months of difference into a year. Neither is the time of birth the only means of early or protracted dentition. Warm sheltered situations, with a liberal supply of generous milk, and a pasturage so luxuriant as to allow early browsing in the foal, will hasten the evolutions of the teeth, as the absence of these will retard it. In some instances constitutional anomalies present themselves ; the middle and corner nippers have been delayed two, three, and even four months beyond the usual time ; in which, and similar cases, the judgment can only be directed by an inspection of the grinders, which seldom participate in the irregularity. The front nippers usually fall at two years old, and the veterinarian, or well informed sportsman, in examining a colt in May, which had been foaled the previous December or January twelvemonths, and finding that the subject of his examination had already two permanent nippers in front tolerably well up, without examining any further, might be led to state the age of such colt to be *rising three*, instead of two, which would be the real age in horse reckoning. Such a circumstance would be particularly likely to occur if the colt happened to belong to a professed breeder ; for he, seeing the forward state of the animal, would, in all probability, the October or November preceding, have extracted the colt's front nippers, which might hasten the appearance of the horse or permanent pair. It is evident, however, that a closer examination would detect this process ; for, if the colt were really three years old, the age the breeder intended to make him appear, the middle nippers would have nearly lost their *mark ;* the dental funnel would be nearly filled up, and that in the corner nippers would show the effects of wear ; but neither of these appearances could in the present instance occur. Further examination into the mouth in such case will likewise show that, although the colt or filly has already five grinders, yet that the first of them are of the milk set ; and the two posterior only belong to the permanent or horse set ; and which latter are readily known from the other by the difference of their size and markings ; whereas, had the colt really reached his third year, then the first grinder would be one of the horse set, and it would be evidently but newly put out.

997. *The frauds practised in making the young horse appear older than he is*, can therefore only pass current in general cases on the inexperienced ; and in a very few instances where the animal, by its being the produce of a very early foaling, may have actually attained marks of majority in its general appearance, when indeed it really may require the discriminating eye of one very well versed in all the dental characteristics to decide. Another fraud much more common than this, is that of passing off a " four-year-old " for one of five years, particularly where the colt is a promising, and somewhat early, one. This is done by punching out the corner nippers, by which the *horse* corner nippers underneath will appear sufficiently soon to make an early four-year-old pass for a late five-year-old. To assist the deception also, the gums opposed to the tushes are frequently lanced, which is supposed to bring the tushes forward. From what has been so circumstantially stated with regard to the true appearances of the teeth generally from year to year, the veterinarian at least, and the observant sportsman also, will readily detect this fraud, which will further show itself in

the "horse form" being so little developed in the four-year-old, who, in the horseman's language is *raw* both in figure and manner. The four-year-old colt is but little "furnished;" his fore-hand is thick and low; his feet round and expanded at the bottom; his legs long; his muzzle round; nor has his mouth the depth usual in the five-year-old horse. Neither do the deceptions practised on the teeth stop here, but they pursue the horse to a much later period; thus, when a dealer becomes possessed of a horse whose teeth bear more actual marks of age than either his limbs or spirit, it becomes an object worthy his attention to give such teeth a more youthful appearance. The principal part of this art consists in the operation called *bishoping* (derived, as supposed, from a man of the name of Bishop, one of its earliest or most expert practitioners). The operation consists in the making an artificial cavity in the upper surface of the nippers, by means of a sharp and hard tool, and then rendering the cavity permanently black with a heated pointed instrument. The strokes of the graver will however, on attentive examination, detect the imposition; and further, the two inner grooves of the tushes cannot be restored by similar means; nor can the blunt point of the tush be again made sharp and prominent.

998. *Premature old age*, it is but too true, is apt to overtake our best horses; and much of this early wear of their limbs is to be attributed to the excellence of our roads, by which the calls of either business or pleasure urge the rider or the driver onward. It is, however, not only from our exerting them inordinately that this takes place, but perhaps equally from our employing them in laborious exercises before the maturity of the system is completed, or the motive organs are fully perfected. The premature exertion forces nature into artificial means of strengthening the debilitated organs; hence the cavities between the tendons and their sheaths are destroyed, and they become filled up by hurtful deposits; parts take on a bony structure whose original formation was cartilaginous, as the lateral cartilages of the feet, and the articular processes of the vertebræ. A greater quantity of ossific matter is deposited on the surface of some bones than is natural, by inordinate exertion. It is thus that splints, spavins, ringbones, &c. are formed; and, to counteract the unnatural waste, other secretions are likewise preternaturally augmented, producing, in the mucous capsules, windgalls, and blood-spavins in the obstructed veins, &c. But where horses are suffered to attain their full growth and the complete evolution of their organisation, if they are afterwards put to full exercise, not altogether inordinate, they become competent to the exertions expected of them, and reach old age sound and vigorous. Many good judges will not purchase a horse for hunting earlier than eight years old, and regard him only in his prime at ten or twelve. It is too little considered that the period of a horse's life, with moderate care and good usage, is protracted to twenty-five, thirty-five, and forty-five years; and an instance lately occurred of a horse dying at fifty. The accounts of their being vigorous and strong at thirty and thirty-five are very numerous, and nearly as frequent as activity in men of eighty and ninety. A gentleman of our acquaintance at Dulwich, near London, when living, had three monuments of three horses, who severally died in his possession at the ages of thirty-five, thirty-seven, and thirty-nine years. The oldest, it is to be remarked, was in a carriage the very day he died, strong and vigorous; but was carried off in a few hours by spasmodic colic, to which he was subject. At Chesham in Buckinghamshire, there was a horse thirty-six years old, which exhibited no symptoms of debility, nor any external signs of age, except being nearly covered with warts. It was remarkable, with regard to this four-footed Nestor, that when an unusually hard day's work was required he was always chosen, as never failing in what was expected from him. A horse named Wonder, belonging to the riding school at Woolwich, may be quoted as living to forty years. Mr. Culley, in his *Observations on Live Stock*, mentions one he knew which lived to forty-seven years, having during all that time a ball in his neck, received in the battle of Prestonpans, in the rebellion of 1715, which was extracted at his death in 1758: thus, judging him to be four years old at the time he received the wound (and it is probable he was more), he must, at his death, have been forty-seven. But even these venerables were mere babies to the *barge-horse* of the Mersey and Irwell Navigation, which was well known to have been in his sixty-second year when he died. It is true that these are not very common instances, but it is not the natural economy of the animal which makes them uncommon; it is, on the contrary, the circumstance of horses being so early brought into hard work, and so unremittingly continued in active labour.

999. *A parallel drawn between the ages of horses and of men* will fully convince us of the error of fixing the decay of the horse at eight years from his birth. A very considerable attention to the subject, over a wide field of observation, has impressed the writer with the propriety of drawing the following comparison between the ages of horses and men; that is, at these several periods of comparison, the constitution of horses and of men may be considered as in an equal degree of perfection and capability for exertion, or of debility and decay, according as youth or age preponderates. Thus, the first five years of a horse may be considered as equivalent to the first twenty years of a man; or thus, a horse of five years may be *comparatively* considered as old as a man of twenty; a horse of ten years, as a man of forty; a horse of fifteen, as a man of fifty; a horse of twenty, as a man of sixty;

of twenty-five, as a man of seventy; of thirty, as a man of eighty; and of thirty-five, as a man of ninety. So far from this comparison being too much in favour of the horse, we are disposed to think it too little so. Horses of thirty-five years of age are as common as men of ninety, provided it be taken into the account that there are at least fifty human subjects for every horse; and, unquestionably, a horse of forty-five is less rare than a man of a hundred and ten.

1000. *That old age commands respect* is a maxim as old as the *dicta* of Horace; and when the writer was a boy he then not unfrequently saw a very old horse, one fairly worn down by age, and not by the deteriorating consequences of inordinate exertions coupled with scanty fare. Any one inclined to admire the picturesque, cannot possibly avoid being interested when such an object presents itself to view; and if it should so happen that other senile figures be present also, as in our cut (*fig.* 157.), the interest which the antique group excites becomes still greater. How strongly marked are the points of each of its members. Mortality has set its seal on each of them, but least of all on the dog; an animal, we may take this occasion to observe on, that either does not become so strikingly angular by age, or otherwise is not so frequently allowed to live sufficiently long to show these senile marks: the horse presenting a larger mass also, makes the deteriorating effects of time strike us more forcibly than they would in a lesser animal. The pendulous lips and ears, the teeth also, yellow and furred, are no longer curved towards each other, but, hardly approximating, they point almost directly outward, as already noted. We cannot, however, but admire this additional instance of the beneficence of Providence, in not only rendering animals unaware of their approaching dissolution, but, what is of more consequence, of not allowing them to linger in pain, and without support. How very seldom do we see the last struggles by which old age cuts the threads of life: it can hardly be called dying; in them it is only perfect quiescence: fortunately for us, it is likewise not infrequently that such is our own mode of bidding adieu to life, particularly in very old persons. As regards horses, the general exertions forced on them in most cases insures an early decay, and the dislike to incur expense in their owners seldom allows of harbouring them as pensioners, except among the wealthy and humane, in whose keeping we occasionally see them enjoying themselves in the park or paddock in summer, and folded in the straw-yard in winter; and surely the horse who has carried his master some years in safety well deserves it.

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HUNTSMAN, OLD HORSE, AND DOG.

Sect. X. *The Breeding and Rearing of Horses.*

1001. *In the breeding of horses*, or indeed in the breeding of any of our domestic animals, we have two objects in view; one to multiply their numbers, the other to improve their forms and qualities. In the quadrupeds not multiparous, we usually apply our endeavours to both these objects at the same time; and this we do by directing the sexual intercourse; or, in other words, by confining the procreative act to individuals selected by ourselves. What share each parent takes in stamping the sex, the form, and the qualities of the future progeny, we are not altogether aware of; we can however register facts, and also probably gain something by opinions.

1002. *The imprinting of the sexual stamp on the ovum or germ:* Is it accidental, or is it principally influenced by either of the parents? This must be acknowledged to be a question of very great importance to the agriculturist and to the sportsman. Some have supposed it principally dependent on the male, and others on the female. Some physiologists (among whom may be reckoned Sir Everard Home) have been of opinion that the ovum or germ, previous to impregnation, is of no sex, but is so formed as to be equally fitted to become a male or female; and that it is the process of impregnation which marks the sex, and forms either male or female generative organs. This gentleman, in the *Philosophical Transactions*, vol. lxxxix. p. 175. informs us, that until the fourth month the sex cannot be said to be confirmed, but that the parts previously are so blended, that either the one or the other may be formed therefrom, as a tendency towards the paternal or maternal type may preponderate. In this way it would not be difficult to account for the disposition which some stallions, some bulls, and some dogs, have to beget a greater number of males than females, and *vice versâ*. The same is observed in the human subject. In the same work, for the year 1787, p. 344. mention is made of a gentleman who was the youngest of forty sons, all produced in succession from three different wives, by one father, in Ireland. In the church of King's Langley, Herts, also, we have ourselves seen the effigies of seven successive daughters borne to a man by his first wife, and of seven sons, the produce of his second wife, in succession. Mr. Knight, a most intelligent naturalist and attentive observer, is favourable to female aptitude in determining the sex. He says, "In several species of domesticated animals (I believe in all) particular females are found to produce a majority of offspring of the same sex; and I have proved repeatedly, that, by dividing a herd of thirty cows into three equal parts, I could calculate on a large majority of females from one part, of males from another, and upon nearly an equal number of males and females from the remainder. I frequently endeavoured to change the habits by changing the male, but without success." (*Philosophical Transactions*, 1809, p. 397.) Some experiments made by M. de Buzareurgues (corresponding member of the *Royal Academy of Sciences* in France), had for their object to determine the capability of arbitrarily producing a larger number of either sex. His subjects were sheep, and his results went to prove that, if the male be very young, there will be produced more females than males, and *vice versâ:* thus, in order to produce male sheep, a ram of four or five years old should be used as the parent. It is also supposed to be under this view, of a readiness in the early state of the ovum to receive any impression, that other of the extraordinary phenomena of gestation, or monstrosities, may be explained; for, whenever the impregnation falls short in stamping its full character on the ovum, not only the secondary parts, as the labia, preputium, clitoris, penis, and mammæ, which appear so contrived as to be equally adapted to the organs of the male or female, and therefore, by some undiscovered law, may readily be blended; but also, that the testes may be substituted for the ovaria; or that neither an ovarium or testis, but an organ bearing a resemblance to both, may be formed, and may either remain in the natural situation of the ovaria, or pass into the situation proper for the testes, or the labia pudendi of the female. (See an extraordinary case of this kind related by Mr. Percival in his *Lectures*, part iii. p. 112.) In this way also hermaphrodites may be formed, of which an instance in the horse is given in Mr. Sewell's *Reports;* and this, it is supposed, will likewise account for the *free martin* among cattle, as well as why twins are usually of the same sex; and that, when otherwise, the female has usually less of the female character, and frequently does not propagate. That the great work of reproduction is divided between the sexes we know; but the exact limits of their proportional influence we certainly at present remain unacquainted with. Some have supposed that the male parent is principally concerned in giving the characteristic external form, while the internal organisation is derived from the mother. With others, the male influence is supposed to predominate throughout; and they regard the mother as a mere hot-bed, wherein the seed is placed with its full stamp to be simply reared; which opinion, as regards horses, has probably been formed from the too common want of attention in the selection of the female as a parent. Any mare rendered unfit for other service, is yet retained by many of our farmers to produce colts, without reference to form or qualities; and as these are the principal breeders of common hacks and common draught-horses, the evil is great. Fortunately it is not thus with the practical breeders of the better kinds, particularly of the race-horse; among whom as much attention is paid to the form and qualities of the mare as to those of the stallion. It would appear that each parent confers a separate set of organs to the offspring. (See Alex. Walker on Intermarriage.)

1003. *When very incongruous breedings take place*, the peculiarities of form in the parents appear nearly equally divided in the offspring: for example, if a cart mare should breed by a blood stallion, or *vice versâ*, the produce is an ill-assorted mixture; and though it may prove in some degree useful, it is seldom remarked for *excellence* in its properties, and never for beauty of form. To a certain degree the form and qualities are divided between the more nearly allied species, but here no incongruities mar the produce. It is, however, a common opinion, that the form is apt to receive more of the maternal than of the paternal stamp. It is now, at all events, universally agreed, that our former indifference as to the form and properties of the mare is erroneous. Mr. N. H. Smith, in his *Observations on Breeding for the Turf*, is of a similar opinion, although he remarks that "The stock of some mares will frequently partake most of the dam, and that of others most of the sire; and sometimes one foal will partake most of the mare, and the next, perhaps, most of the horse, &c. It also occasionally happens, that the produce bears some resemblance to its grandsire, grandam, or other distant kindred; and although this does not perhaps often occur so as to be very perceptible, yet, as their qualities must in a lesser or greater degree descend to their progeny, it has always had its due weight; and hence the value and partiality to blood, or ancestral excellences, transmitted through many generations." He further observes, however, that he is "disposed to attribute more in general to the dam than to the sire, inasmuch as he is decidedly of opinion that a good mare, put to the worst thorough-bred horse, would be much more likely to produce a runner, than a bad mare put to the most fashionable stallion in England; and, therefore, a person possessing good mares may bring any stallion into repute." It must nevertheless be evident, on every side, that the selection of parents for a breeding stock is a very important matter, and that it is conducted under three different views is well known.

1004. *Breeding in the same line* is one of these views, and may be considered as that which is at present most popular. It consists, as is well known, in selecting a sire and dam from any fixed variety of horse; as, for instance, from such as are thorough-bred, and confining the sexual intercourse of the future progeny strictly within that line, but of different parentage. In this method of breeding there is this great advantage, that there is more opportunity of counteracting any notable defects in formation, any important vices in temper, and any hereditary tendency to disease, than there is by *in-and-in* breeding, where near relationship may be supposed to be but too likely to perpetuate, instead of amending, the faulty points and qualities. We are not surprised at a son of Eclipse or Match'em having speed in his gallop, or the produce of a Norfolk trotter excelling in that pace; but it has not been taken into the account, that temper, courage, docility, and patience under restraint, are as much handed down in hereditary descent, as the peculiarities of form. We have said, nature may be diverted, but not wholly driven out, of her course: our grand aim must be directed to secure the begetting and propagating of excellences, taking care that, while we are securing this advantage, we have not propagated defects also, although of another kind. The breeder should carefully bear this circumstance in mind, for it is now well known to the observant agriculturist, that very many of the diseases incident to the horse are hereditary; and that, if the actual ailments be not immediately born with them, the predisposition is inherent, and it only requires an exciting cause to call some of them into action. Blindness from ophthalmia is thus transmitted; founder, bony exostoses in the shape of splints and spavins, and broken wind, are popular names for morbid affections that are frequently observed to be heir-looms to some breeds, and are evils for which no perfection in form, or excellence in qualities, can compensate.

1005. *Cross breeding*, or that between a sire and dam of unequal purity of blood, may be near or remote. It is near when it is between a thorough-bred horse and one only three-quarters-bred; the get of which produces the variety known among sportsmen as the "cock-tail racer." A colt or filly from a half-bred stallion and a full-bred mare of substance, is likely to produce a hunter for a welter weight; or if both parents be of ample dimensions, the lofty cabriolet-horse will probably be the result. It most certainly is to this system, judiciously pursued, that we are indebted for the great amendment witnessed in all the breeds of horses below those we denominate thorough-bred. But very remote cross breeding is not often productive of any improvement in the immediate descendant particularly. How very seldom, as already observed, do we gain a well shaped colt or filly from a cross between a thorough-bred mare and a rank cart-horse. When it became the fashion in London to drive large bay horses, the farmers in Yorkshire put their mares to the largest, but not to the best stallions they could procure; and by so doing they did infinite mischief in the first instance to their breeds, by producing a race of small-chested, long-legged, large-boned, worthless animals. A similar project was also adopted in Normandy, to enlarge the breed of horses there by the use of stallions from Holstein; and, in consequence, the best breed of horses in France would have been annihilated, had not the farmers discovered their mistake in time.

1006. *No attempts at immediate important alterations in the form of animals are found to succeed.* Some graziers in the Isle of Sheppey conceived, that they could improve their sheep by large Lincolnshire rams; the produce of which union, however, was much inferior in the shape of the carcass and the quality of the wool; and, consequently, the flocks were greatly impaired by this hasty attempt at improvement. In fact, all endeavours to improve the animals of a country by any plan of crossing should be made with the greatest caution; for, by a mistaken practice, extensively pursued, irreparable mischief may be done. Further crossing with dissimilar foreign stock should be attempted with much caution also; for, in any country whatever, where a particular race of animals has continued for centuries, it may be presumed that their constitution has become adapted to the food and climate. (See this subject in *Loudon's Encyclopædia of Agriculture*, 2d ed. p. 302.) It may be added, that we in vain attempt to enlarge the breed of horses, or indeed of any other of the domestic animals, except at the expense of their just proportions, unless we at the same time alter the agencies by which they are surrounded. The quantity and quality of their food must be regulated to their increased dimensions; and even the climate, as regards its heat, its cold, and its moisture, must be made subservient to the purpose. We must also make up our minds to have the proceeds regulated by these agencies. Shetland and the Orkneys could not probably be forced by any arts to furnish us with coach-horses, nor direct marsh lands with a racer of "high form."

1007. *Breeding in-and-in* consists in choosing, as sire and dam, members of the same family. Many good practical breeders are opposed to the system of consanguineous breeding, on a supposition that nature has placed both physical and moral impediments in the way of it; but we apprehend many of the evils supposed to result from the practice, are either imaginary or are magnified. Our earliest races must necessarily have sprung from consanguineous intercourse, and they must for many generations have been so kept up; it is therefore most unphilosophical to suppose that nature would have made her first essays in animal character, generally, on a principle tending to the deterioration of her own works. This view applies equally to man and beast; but if we descend in the scale, and examine the brute creation only, we shall find reason to consider it as offering to our choice some benefits, and probably some disadvantages. If we look for precedents, we are assured that the Arab horses of the best blood are bred in-and-in; and as these horses have the greatest possible attention paid to them, the deteriorating effect of such a practice could not have escaped observation had it existed. Mr. Bakewell reared his valuable stock wholly from family alliances; and in fact his improvements were founded on confining the intercourse to relationship. Mr. Meynell bred most of his celebrated foxhounds from the nearest affinities; and our turf records afford numerous instances of the best breeds being kept up by what has been called, by a very forced construction, incestuous intercourse. Shakspeare (whom some assert to be the real sire of Eclipse) and Childers, were both so bred. Highflyer, Mark Antony, and Regulus, owned no blood but that of the Godolphin Arabian, and the descent was thus continued through many generations. Old Fox, Priestess, the little but fleet horse Gimcrack, Damper, and many others, were also bred from the nearest affinities. The *in-and-in* system of breeding succeeded admirably in Lord Egremont's racing stud; and, as observed by Mr. Apperley, "the recent proof of the good effect of close affinity in race-horses, may be found in the produce of the dam of his late majesty's favourite mare Maria: by those celebrated stallions, Rubens and Soothsayer, the get were worthless; but by Rainbow and Waterloo, grandsons of Sir Peter, although possessing much of her own blood, they could run to win." A scientific breeder however says, that, "pursuing the same 'strain' for three or four races may possibly deteriorate (but this is merely an opinion): however, the mode of breeding I am partial to is, to cross out once and then back again." Many other successful rearers of racing stock, though averse to breeding in succession from near relationship by blood, are favourable to it in a remote degree; which is particularly the case with some rearers of game-fowl, who seek the intercourse of a third remove, which they call a *nick*. We might quote innumerable other authorities in favour of in-and-in breeding, but candour would oblige us to own that there appears a large number also of able antagonists to it. One objection of some importance certainly exists, which is, that, as there are few breeds that do not own some hereditary defects, as some disease or predisposition to it, or some detracting quality in temper, &c. &c. so such are likely to be perpetuated through the whole race, but which a more judicious crossing would have prevented.

1008. *Breeding back.* While on this subject, it falls in order to glance at a very curious phenomenon in the reproductive system, popularly known by the term "breeding back;" by which it would appear as though the ova or germs of the future race were originally formed after one common mould; which, if it were not for accidental circumstances and foreign commixtures, would always bear the same stamp. It is thus observed, that the progeny of the horse, and indeed of most domestic animals, do occasionally bear a more striking resemblance to the grandam, or grandfather, than to their immediate parents; and it must be evident, that this is more likely to happen where one common character has been preserved during successive generations, or, in turf language, where the blood has been continued pure. A practical hint, therefore, naturally presents itself on the extreme importance of admitting no accidental admixture of blood, where it is peculiarly requisite that it should flow in true lineal descent, knowing, as we do, that its debasing consequences are carried, unseen, through one or two generations, and unexpectedly appear in a third or fourth. It remains to add, that, when considered anatomically, our conviction that the organisation, the qualities, and even the diseases of the mare, are imprinted on her offspring, is little to be wondered at. But by what mysterious laws can her imagination even have influence over the young within her? And although such phenomena are more frequent in the closely domesticated animals, as dogs, &c. they also occasionally occur in the mare. Lord Moreton produced a breed between a male quagga and a chesnut mare, which mare was afterwards bred from by a black Arabian horse; the progeny, however, exhibited in colour and mane a striking resemblance to the quagga. Mr. D. Giles had a sow of the black and white kind, which became pregnant by a boar of the wild breed, of a deep chesnut colour; the pigs produced by this intercourse were duly mixed, the colour of the boar being in some very predominant. The sow was afterwards bred from by two of Mr. Western's boars, and in both instances chesnut marks were prevalent in the young pigs, while the pigs in other breedings had never presented any appearance of the kind. (*Phil. Trans.* 1821. See many other like cases detailed in our *Canine Pathology*, third edition, p. 94.) It is evident that these facts deserve the utmost attention among the breeders of horses and other domestic animals, inasmuch as very slight causes may frustrate the hopes entertained of any particular race.

1009. *Diseases inherent in either sire or dam*, like form and colour, are transmitted through the progeny; blindness, particularly, has often proved so. Mr. Apperley notices a mare which produced three roarers; and the fact we do not doubt, nor are we prepared to deny the possibility of an hereditary tendency to roaring; but, without repeated proofs, we should hesitate ere we became convinced that this membranous deposition, the consequence of inflammation of the air passages, was any thing more than accidental. Splints and spavins, resulting as they often do from mal-formation in the limbs, may be, at least their *remote* cause may be, propagated; their *proximate* cause being either inordinate or unequal pressure. Founder we have traced through two or three generations; and we have no doubt but that an aptitude to it is transmissible with the *get*, and that the constitutional tendency only waits an accidental cause to call it into action. No prudent person, therefore, will breed from a diseased sire or dam, if any other is to be procured.

1010. *Very great caution* should always be used in bringing a horse and mare up to each other for the purpose of propagation; for it is by no means uncommon to find that a mare, after evincing every indication of a willingness to admit the approach of the horse, will, on his being led up to her, kick at him most violently and viciously; and even supposing she had first been tired by a teaser, as that is done usually, the horse being in a box, and the mare outside, with a bar between them, it will sometimes be found that on the horse being placed behind her she will immediately kick at him; for this reason no valuable sire should be permitted to approach a mare without her being properly hobbled. A further precaution should also be used as regards the safety of the mare. Some horses will, after the act of propagation has taken place, immediately become savage with their teeth, or kick the mare; and even when such is not the usual practice of the horse, he will with particular mares attempt it, though he may not with others; he should, therefore, be held firmly by his leading rein or iron bar (where one is used), and not turned round while the mare is within reach of his heels. Mistaken ideas often lead to throwing a bucket of water against the mare, holding her tail forcibly down, and sometimes whipping her about for a few minutes: all this is more than useless; sufficient for conception has taken place, or it has not.

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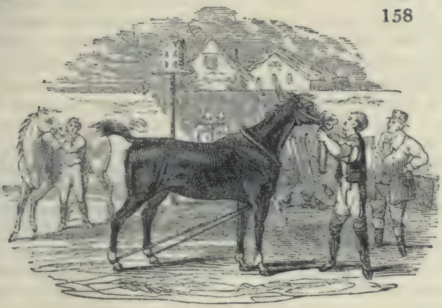

STALLION AND MARE.

1011. *Mares come into season about February*, and continue to be *horsing*, as it is called, at intervals, until the end of June or middle of July. The breeder takes advantage of this, when he wishes to produce an early colt (a circumstance of much importance hereafter); or, in other cases, he prolongs it, so as to have the foal dropped at a more genial period. Some mares are not however *stinted*, or, in other words, do not conceive at the first, second, or third covering; and as the oft-repeated covering of such mares must prove a drain to the stallion, and as there ever will be such, it is evident that no stallion ought to be allowed an unlimited number of mares: none, perhaps, ought to serve more than fifty; some are confined to thirty.

1012. *Stinted mares* should be separated from other mares, which, becoming horsy, will kick them. They should be confined also from geldings, which are apt to tease mares in summer. From stallions it is evident they should be carefully excluded, as every excitement after they have conceived is likely to produce abortion. It is also prudent to allow all brood mares, and more particularly those *in foal*, to have field sheds, for shelter from flies, wind, rain, &c.

1013. *The symptoms of pregnancy, or being in foal*, in the early months, are by no means well marked in the mare, there being but little of that sympathetic effect which is observed between the stomach and womb of the human subject. Having *taken the horse, i. e.* being fecundated, is therefore a matter of uncertainty usually for three or four months, particularly in pastured mares. Some distension takes place after this period; and it is usual to expect to discover the motions of the fœtus by placing the hand flat on the fore part of the belly of the mare when in the act of drinking, particularly if she be thirsty and warm, at which time the change of temperature and the distension are apt to excite sensible motions in the young one within. Pregnant mares should be well fed and but lightly worked, if worked at all, and this only during the first six months of gestation. A contrary treatment will not only endanger the present, but also all her future progeny; as the habitude of abortion once excited, is very liable to recurrence, even without violence. If a mare appear very large for the time of her gestation, even more than usual caution is required, as twin foals render her particularly liable to miscarriage. Mares in foal should never be pastured with vicious or even playful horses: some geldings are very salacious, and will even *leap* on a pregnant mare; and others may kick and worry her. These cautions are still more requisite as her pregnancy advances, when she should, if tender or valuable, be nightly housed, that the young foal may not be dropped in an unfavourable situation, or stagger into a ditch or pond.

1014. *The term of gestation* is considered by breeders to range between eleven and twelve months, these periods forming the extreme limits; but, according to the observations of

M. Tessier, in 582 mares, which copulated but once, the shortest period was 287 days, and the longest 419; making the extraordinary difference of 132 days, and of 89 days beyond the usual term of 11 months. We attach little credit to the assertion, that the mare carries her first foal longer than any other; nor do we find that her term of pregnancy is shorter with a filly than with a colt.

1015. *Parturition, or foaling*, is attended with some premonitory symptoms, which should be very closely attended to, particularly where the breed is valuable. Indeed, the mare should be housed every night, as already stated, wherever there is danger from the nature of the ground, or from the inclemency of the weather. The signs that foaling is at hand are, a sudden enlargement of the udder; sometimes milk may be expressed from the teats; the vulva protrudes; and when the act has commenced, the tail also is elevated. A restless shifting and change of place, with some heaving of the flanks, and some acceleration of the pulse, are also usually present. The painful contractions of the uterus now call in the aid of the abdominal muscles; deep inspirations are made, to enable the diaphragm to assist in forcing the uterine contents backwards, by which the mouth of the womb dilates, and thus ruptures the attachment of the chorion. As the propelling efforts become more violent, the hind-legs are set wide apart, to form fixed points for muscular action; the membranes now protrude in the form of a bladder, which bursting, often brings with it the young one also, particularly in large roomy mares, who have had several foalings. At other times the act is more protracted, and the head with the fore-legs are more gradually forced into the vagina, when usually a few more efforts ushers the whole animal into the world, whose descent to the ground commonly ruptures the umbilical cord, and is accompanied by the remaining waters and a gush of blood. The *secundines*, formed from the placenta and membranes, popularly called the *after-birth*, occasionally accompany the foal; and, when this is not the case, the whole mass comes away very soon after.

1016. *Lactation.* As soon as the foal comes into the world, it is interesting to observe how readily, and without functional disturbance, it submits to the loss of its umbilical connection with the mother, and how soon it instinctively seeks another source of support, by searching for the parent milk; an effort which, provided the foal appears weakly, it is prudent to assist, by setting it on its legs, and supporting it to the teats. The first milk, instead of being prejudicial as supposed by some, who therefore draw it away, is, equally with them as with the human offspring, beneficial, as by its purgative qualities it brings away the mucous contents of the fœtal alimentary canal, thus clearing it out for acting on a more nutritive and elementary food. Occasionally the mammæ refuse their office, and do not yield any, or not sufficient milk, or a mother may die, in which case it is consolitary to know that colts can be, and have been, successfully reared by hand. Cade and Milksop, both excellent racers, were thus reared; and either cows' milk, or that of asses, may be employed for the purpose. Should that of cows be found to scour, it should be boiled; or it may be medicated by having sugar and starch added to it. The udder of the mare does not become completely distended with milk until the third or fourth day, in which state it continues to yield its secretion, until the nippers of the young one enable it to browse the more tender grass, when it gradually forsakes the bag, whose secretory stores dry up, and the organ resumes nearly its former dimensions; it is said nearly, because once having given suck, a certain distension may always be observed in both bag and teats.

1017. *The foal is not born helpless* (*fig.* 159.) as the young of the feline, canine, and some other tribes are. The young horse has its aptitudes and its organs for locomotion already developed, and is at once capable of performing many of the common phenomena of life with facility, and a considerable degree of perfection. To render it equal to these actions, its organisation presents some specialties worthy of notice. We are not, however, in viewing the animal economy in this instance, to consider it in reference only to that artificial state into which we have brought the domesticated creature, rather than that in which nature origi-

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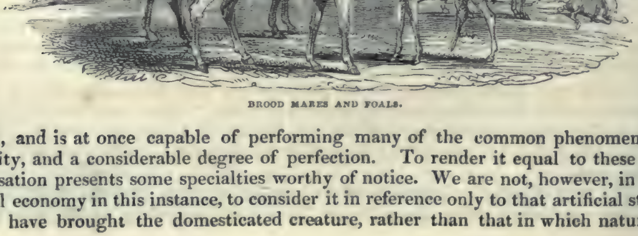

BROOD MARES AND FOALS.

nally placed it; on the contrary, our consideration of the horse, when philosophically directed, will teach us to regard him as living uncontrolled, yet surrounded by predaceous animals, greedy for his blood and flesh; which, it is observed, is more keenly relished by them than that of any other animal, from most of which his only hope of escape is by flight. He should also be regarded as by nature destined to rove extensively in search of food; for in a wild state, where horses are found solitary, or, as is most usual, associated in herds, the scanty provision raised on one spot, without the assistance of agriculture, would not long suffice to supply the wants of a numerous assembly of wild horses. Our physiological examination of the animal before us should therefore be directed towards a capability for this kind of life; and we should not draw our inferences from the nurture of the stable, or the supplies of luxuriant meadows. Regarding him therefore aright, we shall find the structure of this youthful animal admirably adapted to his economy: thus it is that the young colt, as soon as foaled, appears capable of making considerable exertions, and is possessed of great speed, by which he can accompany his mother and the associated herd, either in flying from their enemies, or in search of food; and if we examine him attentively, we shall find his exterior form, as well as his internal economy, admirably adapted to these exertions. His body is very slender, and consequently very light, and his legs are remarkably long, by which he can reach his food, the milk; and by which length of limb he is likewise enabled to exert very considerable speed without making any greater exertions than his juvenile state will admit of. On the contrary, in animals who seek the safety of their young by hiding them in holes and caverns, where it is necessary for their preservation that they should remain quiet, nature has wisely given them a correspondent form; their bodies are fat and unwieldy, that thus they may have a constant disposition to rest and sleep; and which is further forced on them, as it were, by their being blind. Their legs also are short, so that every impediment is placed as a bar to their roving until they possess something like the parent strength and the parent intelligence. The internal economy of the foal, on the contrary, is such, that he has no need of much sleep to quicken digestion; for, in him, the process of solution is not carried on in the stomach wholly, but also in the intestines; therefore he can be always alert, and on the look-out, to avoid surprise. In the stately herds of horned cattle, likewise, though the calf can make considerable exertions at birth, yet there is not that studied attention to its capability of rapid progression: and here also the safety of the offspring consists in the means of defence given to the parent by its formidable horns; and, consequently, to them nature has given a greater degree of ferocity when they have young, that they may make use of these means; whereas the mare, which has them not, is stimulated to trust more to flight than resistance. Therefore, that the evolution of the parts of the colt at birth might be such as to admit of these necessary exertions, we find a considerable peculiarity in the gestation of his mother; for, by the very extensive attachment of the placenta to the whole surface of the uterus and its cornea, the blood must be much more oxygenated; there must be likewise a much greater quantity of chylous nutriment, and hence the organs of necessity are more completely evolved at birth, and fitted to greater exertions. By these means it is that the pelvis of the young one is completely ossified when foaled, and many of the epiphyses of the bones also, which in the human infant remain cartilaginous for many months afterwards: and it is more than probable, that the very extensive attachment we have pointed out is permitted in the uterus of the mare as an assistant to early exertions.

1018. *In the treatment of both the mare and her offspring,* we must not look altogether to present loss, but as well to future gain; and without doubt, the systematic breeder for racing purposes, and those also who rear three-quarters and half-bred horses for powerful hunters, and for fast work of every kind, will attend to their mares and their progeny without reference to any work to be obtained from either: but among professed agriculturists, the breeding mare is frequently put to work, even while her foal is at foot. Where the progeny is not of the very first consequence, and where the work is not too laborious, neither mother nor offspring sustain injury by it; but, on the contrary, the foal in particular is thereby rendered fearless, handy, and attached. It is, however, the very worst economy to work the mare beyond her strength, to stint her in food, or to do any thing to prejudice the foal, let the breed be ever so low. Liberal feeding of both the mother and offspring will amply repay itself hereafter. The writer on the horse, in the *Farmer's Series,* observes, "The breeder may depend upon it, that nothing is gained by starving the mother and stinting the foal at this time. It is the most important time in the life of the horse; and if, from false economy, his growth be arrested now, his puny form and want of endurance will ever afterwards testify the error that has been committed. The corn should be given in a trough on the ground, that the foal may partake of it with the mother. When the new grass is flush and plentiful, the corn may be gradually discontinued."

1019. *In the management of brood mares and their progeny of the first class,* a well sheltered pasture is essential; and that a shed or box be appended in case of inclement weather is equally so. Here a brood mare may be occasionally treated with corn, if her milk be in plenty; but if otherwise, without altogether withholding corn, give lucern, green tares, or carrots. When the succulent grasses are not obtainable, substitute malt mashes or speared corn for dry lucern: tares and other artificial grasses are useful for the colts also when fresh, and should always be at hand in very dry seasons. Whatever succulent food therefore is given to the mother, should be placed in low cribs, or moveable racks, within the reach of the foal; and the corn allowed it will be well to bruise for the same end. All prudent breeders provide their young stock with a liberal supply of corn, either speared or dry, as soon as they show an inclination for it. It will further enforce the propriety of giving the full-bred colts and fillies granivorous food, to consider that they are originally descended from races native to the arid plains of the east, or they own the mountain desert for their primeval pasturage, where the luxuriant grasses are scarce, and where their organs become on this account artificially, as well as naturally, rather adapted to derive nutriment from grain and dry herbage than from succulent grasses. Many colts will suck up malt mashes in a very little time after birth; but, though very nutritive, it is necessary to watch that such food does not open the body too much. Should this be the case, add bean flour, and its effect in checking looseness will be immediate. (See *Breaking and Training*, p. 285.)

1020. *In the management of foals*, the first consideration is the weaning, which takes place earlier or later according to the strength of the animals, and their capability to shift for themselves; which is sometimes protracted by an irregular dentition. Mr. John Lawrence recommends to dock the foal at a month old, by which he observes "all risk" (as we suppose from either hemorrhage or lock-jaw) is avoided. In docking a colt, reference should be had to the age at which it is done, and the probable future growth of the remainder; if it be taken off thus early, remove a very few inches only, custom having much altered in this respect; the hair of the tail of our best breeds, it is well known, is now very little shortened, and nicking almost exploded. Castration likewise is seldom performed on thorough-bred colts, but with all others it is yet sufficiently common. The usual time for *cutting* is twelve months, but no given period should be adhered to in a breeding establishment. A colt may be low in his crest, and altogether weak in his "fore points" as a yearling; in which case, by protracting the operation to eighteen months or two years, a very favourable alteration may have taken place. All young horses should be early accustomed to handling; it encourages confidence, it is a preventive of shying, it renders them docile and handy, and very greatly shortens and facilitates their breaking; nor can we too strongly press this particular both on the score of prudence and humanity.

Subsect. 1. *Profits to be derived from Breeding Horses.*

1021. *It is certain that the system of saddle-horse breeding* is not now so profitable as it has been, or otherwise it would engage more attention than it does at present. Farmers, whose lands yield both meadow and corn crops, do certainly most of them still breed horses; but unfortunately they are seldom of a stamp suited for the sportsman, with the exception of those reared in some particular districts, as the northern ones. But we conceive that it would pay farmers of every description, instead of breeding the mongrel race that many of them do, because such may be turned at least to some account, by carrying themselves to market one day, drawing their wives and children to the country fair on the next, and labouring at plough or the dung-cart on the third — we say, instead of such a breed, it would surely answer the purpose of all such as have land fitted for it, rather to purchase such agricultural horses as are essentially necessary for the heavy work of their farms, but to breed their saddle-horses from none but the best stock. Such horses would carry them until they were five years of age, and then would bring them prices varying from 50 to a 100 guineas. A well known sporting agriculturist strongly presses this subject on the attention of farmers. "My object," he observes, "is to induce them to breed horses, being convinced that no other stock on their farms can pay them so well. When, however, I recommend them to breed horses, I mean that they should set about it as it ought to be done, or they had better leave it alone; for I speak without fear of contradiction when I assert that, generally speaking, no branch of rural economy has been more abused and neglected than this. It is useless, however, to expose errors that have passed; let us endeavour to avoid them in future. Under proper management a good three-part-bred mare may be a little fortune to a farmer. I knew one in the neighbourhood of Ludlow, which did not begin to breed until she had carried that ornament to fox hunting, the late Sir John Hill of Hawkeston for eleven seasons, when she produced, if I may so express myself, a thousand pounds' worth of horseflesh in the space of seven or eight years. I myself gave 260 guineas for two of her colts when rising four years old, and they both proved good hunters. From what other stock, may I ask, could such a return be made? I may safely assert that the produce of this mare more than realised the fee simple of the land that reared them. I have not time to be prolix, therefore must come to the point. When a prudent man lets loose his capital, his first consideration is, whether it will return to him again? In this instance he may make sure of it if he will follow these simple directions. Let him purchase a well bred mare, not so much regarding her size as her points and action — particularly requiring that she have a sound constitution and good legs. Let him send her to a horse of good form, with freedom of action and a sound constitution; also being particular as to the state of his legs and feet. Never let him breed from a naturally infirm horse, whose legs have shown more than ordinary weakness; and, above all, let him fix upon one which has, what the veterinary profession call, a short canon; that is, the bone extending from the knee to the fetlock, commonly called the shank bone. Let him begin to breed from his mare before she is much injured by work; as in that case, if she does not breed to please him with her first and second foal, he can dispose of her and purchase another." (*Nimrod's Letters on Condition*, p. 219.) This luminous and argumentative statement has, however, been combated by another sporting agriculturist, who enters into a register of his profits and losses on the produce of one mare for five years. As this register appears remarkably well kept, we would recommend it to the notice of the reader (as a *per contrà*), as it is seen in the *Sporting Magazine*, vol. xv. p. 421. new series. In preference to encountering these risks and losses, yearling colts or weanlings are purchased by some masters of foxhounds; and where the selection can be made under a full approval of the shape and knowledge of the "get" on both sides, the practice is certainly an eligible one.

SUBSECT. 2. *The Growth of Horses.*

1022. *There is no doubt but that the increase of the animal bulk* is much influenced by the quantity and quality of the food which is taken in. The milk of the well fed mare will insure a quicker and more extensive development of the frame of her progeny than that which is the produce of scanty and bad keep. When the colt or filly is left to shift for itself, its growth will be proportionate to the nutriment it receives; which fact should influence the breeder in his treatment of his growing stock. To ascertain the maximum and minimum of growth within certain periods in various breeds of horses, and under different management, would require very enlarged means and very critical observation. Mr. Percival has given us the results of his examinations of the growth of twenty-one horses, which were as follows: — "Between the fifth and sixth years one horse had, in the eighth month, not grown at all; a second, in the ninth month, had grown one inch and three-quarters; a third, in the eleventh month, had gained half an inch. Between the fourth and fifth years, of twelve horses measured, the maximum of growth was found to be one inch in six months; the minimum nothing; making an average of one inch per annum. Between the third and fourth years, of six horses measured, the average was found to be the same." (*The Veterinarian*, No. xxvii. p. 274.)

SECT. XI. *The Breaking and Training of Saddle-horses.*

1023. *Buffon has observed that the noblest conquest made by man was that over the horse.* It remains, however, a matter of regret, that we have no authentic records on either the early arts employed for the purpose, or the period when it was first attempted. We are therefore unable to say whether the secret of Mr. Rarey, the American horse tamer, of Mr. Telfer the Northumbrian practitioner, or the mode described by Mr. Field in his letter in the "Times" of March 13. 1858, were any part of the system of treatment. Upon these conflicting claims we may here observe, that as regards vicious horses, we strongly suspect any operation will only prove a temporary benefit, and it should be borne in mind, that a horse may be perfectly tractable in the hands of one man, and utterly unmanageable in those of another. For breaking, we think more favourably of them, inasmuch as they seem to effect a complete subjugation of the animal, which is just what is required. Considering the anomalous character of horse-breakers generally, anything that would get rid of them would be a blessing to breeders.

SUBSECT. 1. *History of the Application of the Bridle and Saddle to the Horse.*

1024. *The earliest purpose* to which the subjugated horse was applied, has been a matter of dispute, more curious, however, than important. To us it appears most probable that he was first employed in the bearing burdens on his back, and that he was next taught to draw loads, at first probably, as already noticed, by means of his tail, as is still practised by bullocks in some countries. When made use of to transport his owner from place to place, it would seem reasonable to suppose that the first mode would be by mounting on his back; but history lays some stumbling-blocks in the way of such a conclusion. Sir Gore Ouseley, in his examinations of the sculptures on the ruins of Persepolis, found no figures on horseback. By Palœphatus we are told that men were first drawn in chariots. Homer also, in his *Iliad*, describes all his heroes as fighting from chariots. Lucretius, on the contrary. asserts that warriors were first mounted on horseback, and that chariots were an after invention, which it must be allowed seems the most probable report. Paterculus likewise, who wrote nine hundred and sixty-eight years before the Christian era, remarks, that long before his time the horse had been mounted. (See *Domestication of the Horse*, p. 10.)

1025. *The invention of the bridle* does not appear to have been coeval with the subjugation of the horse: the Libyan boys of eight years old mounted on their naked steeds, and guided by a switch only, as we are told, were enabled to ride down and capture wild asses. Neither was this method of riding confined to the boys of Libya only, but was also practised by the Numidians, Massamonians, Mauritanians, and Massylians. Of the Numidians we are told by Livy, that each rider took two horses to the battle-field, and that in the midst of the contest the rider would leap from the back of the tired or wounded horse to the fresh one. But we are not to suppose that in this case their horses were not under the restraint of a bridle of some kind, for it is doubtful whether any discipline could carry any horse into positive danger without great forcing. The Libyan horses, notwithstanding this tractability, we are told, were not by any means treated with the kindness their services demanded. It is indeed reported of them, that their masters neither rubbed, bedded, or even fed, these willing steeds; but having used them, they turned them loose to seek their subsistence where they could get it.

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LIBYAN BOYS.

1026. *A bridle of some kind however*, without doubt, was soon applied to the mounted horse; and as the mouth was the most sensitive part of the head, a *bit* was ere long added to the rein. At what exact time this took place we are not aware, but it must have been at an early one; as in the time of Xenophon bridle bits appear to have been very much diversified, for he is very minute in his instructions on divers bits and reins, as proper for horses of different kinds. The Greeks had a bridle armed with teeth, which came over the nose like our cavessons, and was very severe in its effects: there was also a very rough bit, called the *lupatum;* which rude methods appear to have been principally in use before the smooth bit. In the processes of breaking and training, the horses were moved in circles, that they might be made supple, and ready to turn any way. Poets, however, are fanciful beings, and are apt to gift their heroes with supernatural powers: thus Lucan describes the Massylians as superior to any such aids in the management of their coursers:—

"Et gens quæ nudo residens Massylia dorso Ora levi flectit frænorum nescia virgâ."	"Without a saddle the Massylians ride, And with a bending switch their horses guide."

1027. *The early saddle without doubt was the skin of a beast.* Pliny informs us, that one Pelethronius was the first who adopted this useful piece of horse furniture; but as patents were then unknown, his exact right to the invention is probably disputable. Parthenopæus's horse, as we see in Statius, was covered with the skin of a lynx, as Æneas's, noticed in Virgil, was decked with that of a lion, *Quem fulva leonis pellis obit.* "It is conjectured," says Nimrod, in the *Sporting Magazine* for April, 1827, "that saddles having any resemblance to those now in use, were invented in the middle of the fourteenth century, and were generally covered with cloth; but previous to this period, in the fifth century, articles bearing something of this stamp were made so extravagantly, that a prohibition was issued by the Emperor Leo the First against any one ornamenting them with pearls or precious stones. In the sixth century the saddles of the cavalry had large coverings of fur, according to Mauritius, who wrote on the military art; and at this period the Greek word σελλα (*sella*) occurs. Vegetius, who wrote on the veterinary art, speaks of saddle-horses; and the saddle-tree is mentioned by Sidonius Apollinaris. It is considered probable that the invention of saddles belongs to Persia, not merely from the circumstance of Xenophon's mentioning the people of that country as being the first to render the seat on the horse more convenient and easy, by placing more covering on their backs than was common in other parts, but also because the horses of Persia were chosen for saddle-horses in preference to any others. The ignominious punishment of 'bearing the saddle,' had its origin in the middle ages, and was alone worthy of those times. That the word *saddle* is derived from the Latin word *sedeo*, to sit on, there can be no doubt. That the saddle, however, was unknown in this country until the reign of Henry the Seventh is, I believe, equally certain; and in Ireland also, it is conjectured, from the absence of any representation of it in the last three centuries. The first mention of side-saddles is in the time of Richard the Second, when his queen rode upon one." With all deference to the opinion of Nimrod, that the saddle was not used in England until the time of Henry the Seventh, we must cite the testimony of the venerable Bede, who informs us that the English began to saddle their horses about the year 630, during the Saxon struggle for the ascendency.

1028. *The want of stirrups must have been long felt*, for though the agility of the early riders accustomed them to vault at once on the back of their horses with surprising ease — *corpora saltu subjiciunt in equos;* it is however certain that the aged and infirm could not mount

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BREAKING.

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A KICKER SUBDUED BY MR. RAREY, THE AMERICAN HORSE-TAMER.

thus; the Persians, it is therefore said, taught their steeds to bend the knee to receive the sick. Short ladders were also used for the purpose, a portable but sorry substitute for our own horse block, though more nearly approached to by the backs of slaves, called *stratores*, who were used for the same purpose. To show his consequence, a Persian king thus mounted his horse from the back of the Roman Emperor Valerian. The *Ars Militaris*, supposed to have been written about the end of the sixth century, is thought to offer the first notice of stirrups. This work, ascribed to the Emperor Mauritius, directs that two iron *scalæ*, or ladder steps, be appended to his saddle.

Subsect. 2. *Of Colt Breaking.*

1029. *In colt breaking, to command obedience and insure confidence are the first points aimed at;* and, as such, the importance of the early handling we have recommended must be evident, as greatly simplifying this part of the process. Colts are now taken "in hand" much earlier than formerly; racing colts at a twelvemonth, and saddle colts of promise are now bitted and suppled at two, and are finally and fully broken and trained, some at three, and few later than four years old. When a colt has had early "handling," and at two years old is subjected to some initiatory discipline, his full breaking being protracted to his fourth or even fifth year, how much may be expected of him, for his usual wear and tear will hardly make any impression on a constitution that has had all its powers developed. If, however, the new system already alluded to at par. 1023, as inducted by Messrs. Rarey and Telfer, proves successful in breaking, not only a great saving of time with all horses, but much wear and tear of constitution with race horses, will be effected.

1030. *The breaking of racing colts and fillies,* it is to be lamented, too frequently commences at twelve months old. Nor would this be so injurious as is supposed, were the exercisings less severe. On the other hand, what is done is perhaps actually necessary to bring about that early extension and suppling of their limbs and joints, so essential to the future speed of the animal; at least, it certainly is so, to bring such young horses out for the two-year-old stakes. To such an extent is the early engagement of the race-horse now carried in large racing establishments, that it is not uncommon to make severe trials of the speed and bottom of colts and fillies at very early periods, that time and keep may not be thrown away on such as give no promise of future excellence; but that, if necessary, they may be at once disposed of for inferior purposes. By three years old, the breaking of the young racers of the present day is completed; about which time the breaking of the better sort of saddle-horses of all descriptions commences, unless an early initiatory handling, lounging, and partial backing at two years old have preceded, which is a very prudent practice.

1031. *The application of the cavesson* (*fig.* 161.) is the first active restraint applied to all saddle-horses, but before putting it on, it is prudent to boot racing colts, and indeed all others of value, to prevent them knocking their legs against each other while they are lounging. "On their first being taken out, a steady lad should walk in the rear, in case any colt should hang back, to urge him quietly on by flourishing his whip or ash plant, but not to strike him. Colts with their cavessons and boots on, and thus attended, may be led out to the downs or into a large paddock. At either place they may be accustomed to be led quietly about. As soon as they become tractable in this way, attempts may be made to lounge them, by first walking them in a small circle to the right or to the left, and when they know how to go steadily round at this pace, they may be quietly urged on into a trot, gradually increasing the size of the circle by giving them more length of rein. In three or four days, or when they go boldly and freely at full length of the rein each way in the lounge, for fifteen or twenty minutes, having by degrees been brought to this pace and time of lounging, the mouthing bits, rollers, and cruppers may be put on them. (*Darvill, on Training*, vol. i. p. 467.)

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LOUNGING COLT WITH CAVESSON.

1032. *The saddling of the colt for the first time requires caution.* The girths should not be drawn tight at first, and care is required that the crupper be smooth, and that it does not press heavily on the rump or tail; nor should the stirrups be left to hang loose from the saddle in the early lessons. The "bearing up" of the bridle likewise must be gradual, and "reining back" by way of suppling the shoulders, and giving sensation to the mouth, must not be roughly nor too early pressed on him. The "backing" of the colt should be proceeded with very cautiously, and it would be well that it should only be attempted by one with whom the colt is familiar. An assistant is requisite, and the act of mounting must be gradual and gentle, the assistant bearing on the stirrup leather of the off-side against the weight of the mounting rider on the near, particularly the whole process should be accompanied with much encouragement to the animal under tuition.

1033. *The giving a good mouth to the young racer*, according to the instructions of Mr. Darvill, is to be undertaken thus:—"To accomplish it requires a light hand in the application of the pressure with the bit on the colt's mouth. It should be done by the rider's giving and taking by gentle pulls, and thereby keeping the colt's mouth alive to the pressure of the bit. The rider should occasionally gently press the calves of his legs and heels to the colt's sides, to urge him on and up to the bit, pulling him up and letting him stand for a few moments, and then reining him back a little, and again moving him forward, teaching him to turn and go in any direction that may be required of him, treating him at the same time with kindness." When the mouth does not readily acquire its proper feeling, it is well to place the young disciple between the pillars daily, or to bear him up to the saddle, or to a spring-cross. The snaffle-bridle is almost invariably used for all initiatory purposes, and the bit is commonly a mild one. When the mouth is very hard, and the horse pulls much, a check-rein is sometimes used. It is very important in the breaking of colts to accustom them to crowds, bustle, and noise, and this as early as possible. It is particularly requisite that *racing colts* should be very early familiarised to stirring scenes, and to facing congregated multitudes, or how can they be brought as "two-year-olds" to the starting post? These young racers are familiarised by being led or ridden, but commonly by the latter, led on with the colt-breaker, head lad, or trainer, in front on a steady hack. The boy on the colt must be to the full as steady as the leader, and must do all by encouragement; no kicking of the heels, no hustling of the bridle, must be employed to force the timid up to what scares them. A fright now taken sinks deep into the youthful memory. As the hack in advance does, they will gradually learn to do, from observing that he is not forced, and that, though he advances, no harm happens to him. It is the same with regard to noise and the bustle of motion; kindness of manner towards them will equally assure them that they have nothing to fear from flourishing trumpets and waving flags. They may therefore, after such breaking, be with safety removed on the road from one racing locality to another, and brought to post at two years old with all the confidence of the veteran. (On this subject see *Darvill*, vol. i. chap. 24.)

1034. *Full breaking of horses however at periods so early*, as is now not uncommon, has laid the foundation of the deterioration so complained of among the breeds in general. Nevertheless, as the habit is fixed, we also are forced to recommend that a very early handling of all colts may be a common practice. They should also, when yearlings, be accustomed to wear a head stall, and occasionally a surcingle, that they may be led about occasionally, to inspire them with confidence and teach them obedience. It would likewise be prudent to supple them thus early by a little lounging in a circle; but further than this, were the horses only concerned, we could not recommend: indeed, were the real welfare of our blood breeds consulted, instead of two-year-olds being brought to the starting post, none would appear there before they had seen at least four summers, and if five had passed over their heads it would be better for themselves at least. Nor would a four-mile heat be ever contended for by horses of any earlier age than five or six years, if due reference were had to the future services of the animals themselves, or to the qualities of the progeny to be derived from them. The astonishing powers of some racers of the last century, it is more than probable, would never have excited the envy and the wonder of the breeders of the present day, had they been brought as early into work as the present breeds are. But unfortunately, that which was then a matter of emulation, is now one of speculation and merchandise; and, as we cannot contend against the stream, we must needs go with it.

SECT. XII. *The Paces of the Horse.*

1035. *When we treated of the motions of quadrupeds generally*, the paces of the horse were cursorily noticed, but the importance of the subject to the sportsman will require some further consideration of it in this place. We may venture to assert, that few persons have occupied themselves more than we have in examining the various progressional movements of the horse. Passionately fond of this animal from our earliest days, we have sedulously employed ourselves in marking his paces, whether performed in the cadences of the *manège*, or on the *road*, or in the *field*; and the result of our attention to the subject has been to convince us, that however the transposition of the limbs in each pace may be correctly marked by the eye, when effected with moderate and uniform celerity only, it is far otherwise when any interruption is offered to the regularity of the pace in question; and that either,

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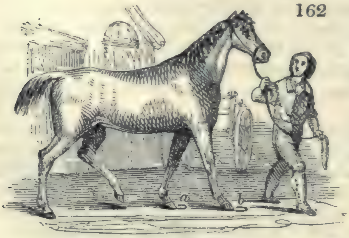


HORSE WALKING.

whether it be accelerated or retarded, but more particularly when it is quickened. Either alteration, however, will so disjoin the harmony of the former action, and so blend it with a new succession of the limbs to each other, as utterly to baffle all attempts to critically mark the order in which they proceed. It is thus that one writer describes the walk as a pace in which one foot only is elevated at a time, three remaining on the ground; nor is he in error, further than that he does not also inform us that this is only the case in the very slowest walk; quicken it, and two diagonal legs will be elevated at one time, though the degree of elevation will be very different. A similar error may, and we are certain does, occur also in noting the other paces; but, strange to say, not in an equal degree, although they are so much more rapid. The trot is certainly the most mixed of all the paces; it may intrench on the borders of the walk; and, without aiming at a pun, it certainly often *treads* on the heels of the gallop. The gallop, differently as it is effected, is the pace best defined of all, but it is not so until separated from the slow canter. We have made these preliminary remarks, not only as bespeaking an unprejudiced examination of our own statements, but of those of others also; so many anomalies necessarily occur in the varied action of four limbs in rapid motion, that it is not very easy to decide who is right and who is wrong. We ourselves incline to the opinion, that we have never yet seen any rationale of the paces that might not be verified in the action of some horses, indeed of most, under particular urgencies, or certain restraints.

Subsect. 1. *The Walk.*

1036. *The walk* (*fig.* 162.), particularly the slow, is considered as the most simple of all paces; but when it is ever so slightly accelerated, it is then not so simple as is imagined, for it may be intermixed with motions appertaining to other paces by a successional or simultaneous displacement of the limbs out of the more common course. Thus the walk may be irregular, though laterally conducted, as we see in the walk of the pace, which, if expedited, produces the amble. It is also seen occasionally to be effected by a peculiar displacement of the diagonal members, which produces a rocking motion. Neither does walking in the horse of necessity commence with a hinder foot, as taught by Borelli (*incipit gressus pede postico*) who argues, that were a fore-foot to be the first displaced, the true support of the body would be lost in the meditated advance of it, for want of a new centre of gravity. On the contrary, the walk is begun, probably, as often by one of the fore-feet as by one of the hinder; for instance, if you face a horse, and draw him forward by means of the bridle, he almost invariably first moves his fore-foot. The rapid succession of the members in all the paces making it difficult to arrange the order of their motion, has occasioned, we again remark, much discrepancy in the description of writers on the subject. Mr. Richard Lawrence many years ago offered a simple, but, as we conceive, not altogether a correct, account of progression, particularly as regards the walk. He states, that "The horse during the walk is *always* supported by a triangular position of three legs, namely, two fore-legs and one hind-leg, or one fore-leg and two hind-legs, alternately." We, on the contrary, are persuaded this is not the case, except when the walk is of the very slowest kind. He very justly observes, that "The walk consists of four motions thus exemplified, — the horse having advanced the near fore-leg and placed it again on the ground, the off hind-leg is elevated and advanced under the body; but before it reaches the ground, the off fore-leg is raised and advanced, (query, What then becomes of the integrity of the triangle?), in order to make room for it, as is particularly the case when the horse oversteps the print of the fore-foot with his hind-foot. When the off hind-leg has reached the ground the horse stands upon three legs, forming a triangle. When the off-leg alights on the ground, the near hind-leg commences its action, and is advanced in the same manner as before, and the horse is again supported by three legs." (See *Structure and Economy of the Horse*, p. 182.) In this description of the walk, it is evident that, when the off hind-leg is elevated and advanced under the body, the off fore-leg (*b*) being also raised and advanced in order to make room for it, there cannot be then three legs remaining on the ground. In the walk, therefore, it is evident, that it is only in its slowest rate that three feet are grounded, for we must be well aware, that every good walker among horses, even without any great acceleration of his motion, is seen to leave the impression of his hind-feet somewhat in advance of that of his fore, as seen in *fig.* 162. where *a b* mark the impression likely to be made by the hind-feet. Strickland Freeman, Esq. whose extensive knowledge of equitation gives weight to every opinion of his on such subjects, offers the following rationale of the walk, by which it will be seen how differently it may be viewed:—"I found," he says, "that, supposing the off fore-leg to begin, it was immediately succeeded by the near hind, but the off hind-leg seemed not to follow the fore-leg at the same time as before (*i. e.* that was in the walk of the pace which he had been previously noticing); but this was nothing more than the alteration of the poise of the body, when either the one walk or the other took place. For, when the off hind-leg began, it was succeeded by the off fore being lifted up, and when the off hind-leg was set down, the near hind-leg was lifted up. But the off fore and the near hind-legs seemed so connected together by the poise being on the same side, that it was the near hind-leg which appeared to begin the action. The poise being altered by the will of the horse, the off fore seemed to begin, and not to be succeeded by the off hind-foot being set down at the same time after it, as in the walk of the pace. The near hind-leg is in both cases (*i. e.* the common walk and the pacing walk) taken up after the off hind-foot is set down; and when the off fore-foot is set down, the near fore-foot is taken up, to make room for the near hind-foot to be set down." When the variations of the movements of elevating and setting down of the feet in relation to each other are considered, there will not appear any difficulty in reconciling this elaborate account with what we have introduced here, and have advanced in other of our writings.

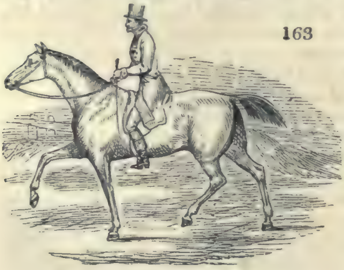
1037. *To render the walk pleasant to the rider* it should be *true*, that is, it should be conducted by a harmonious elevation and setting down of the feet. To be fast, it requires liberty in the angles of the limbs, but particularly so in the elevation of the fore parts and obliquity of the shoulder, as further explained and also figured in our section on the *Exterior Conformation of Horses*, p. 260. Without such formation, the general angular inclination of the limb being confined, the horse necessarily steps short, and his toe meeting the ground first, not only curtails the extent of the step, but also renders the horse liable to stumble. A correspondent length and angularity in the hind-legs are also necessary to the perfection of this pace.

1038. *The quiet walk*, to be conducted harmoniously, requires a general accordance of formation between the fore and hind parts. To walk well is a valuable property in any horse, but particularly so in the hackney. Such an one can compass his five miles in an hour with ease, his head nodding in unison with each change of equipoise. Where a horse walks well, the necessary harmony and accordance in the form of the limbs are such as to make it almost a rule that he is good in his other paces. The race-horse can stretch along in his walk, so as to get over much ground in a little time; but it is not often that he does it either pleasantly, or safely; his stride is too great, and the elevation of his limbs is naturally curtailed by his training. It is a very great acquisition also to the hunter to walk well. We have ourselves been forced to ride eight and even ten miles after a hard run ere we reached home: in such a case, our feelings not allowing us to trot a tired horse so great a distance, the walk, cheerfully and quickly performed, beguiled the tedium, and did not greatly increase the time.

1039. *The walk as a pace* should be performed as harmoniously as any artificial cadence of the manège, and that, whether it is quick or slow, each foot being dropped flat on the ground, and not, as is too often the case, the toe being placed first and then the heel. The breaking of the horse will have much influence on his method of walking; the angles of his limbs will have much more; and not a little will depend on the hand of the rider. One horseman, by seat and hand, will force the horse to carry his head in the right place and to elevate and extend his limbs, the one in unison with the other; another rider, by his bad seat and worse hand, will bring the horse he rides to step short and irregular, and so to mix the trot with his walk, as to do little more than shuffle over the ground. The maximum of speed in the true walk of the horse is six miles in the hour: there are, we allow, but few that can do thus much; but it has been done; and five miles per hour is the common pace of a fast walker.

SUBSECT. 2. *The Trot.*

1040. *The true trot is always performed diagonally;* the limbs, however, are very differently employed, according as it is quick or slow. Three kinds of trotting may be distinguished—the moderate, the extended, and the running, trot. In the moderate trot (*fig.* 163.) the diagonal legs, as the off fore and near hind-leg, are elevated and replaced together; while the other diagonal limbs remain on the ground to sustain the weight of the machine, although they are evidently making ready to take the place of the moving ones, as exemplified by the cut. Quicken the trot to the rate of ten or twelve miles in the hour, and it will be then seen that the off fore and the near hind-leg having been elevated before they are again replaced on the ground, the near fore-leg and the off hind-leg are not only prepared, as in the slow trot, to elevate themselves, but also, that, when the pace is considerably increased, these legs are already actually elevated from the ground, before the off fore and near hind-feet reach the earth; consequently it is evident, that at this precise time the horse is wholly without support, or *all in air*, as truly as the bird is when flying, or as the horse himself is when taking a flying leap, or engaged in a racing gallop, as exemplified in the cut, *fig.* 165. In the running of a man also, as well as in the extended trot of the horse, there is a period when all the supports are completely removed from the ground; for, by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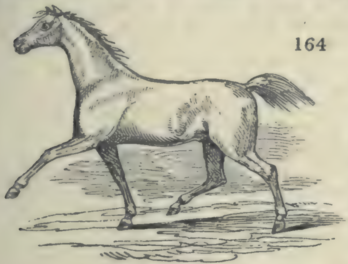
MODERATE TROT.

means of the flexion and extension of the angles of one of the lower extremities of the man, a spring is made, which displaces and elevates the body, inclining it forwards, and taking the first raised leg with it, which, before it meets the ground, is crossed by the other. The body, losing its impetus, waits for a fresh impulse to be gained by the rebound of the limb which was last elevated, and is by that means again propelled forwards; the contrary leg once more passes, to be ready to receive the propelled weight thrown on it; and again, by flexing and extending its angles to relieve itself, it renews the action.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EXTENDED TROT.

1041. *The extended trot of a horse* (*fig.* 164.) and the run of a man are equally exemplified on the same principles, for the fore and hind diagonal extremities of the horse, acting in unison, form themselves, as it were, into a single support, as of one leg, only the centre of motion being placed diagonally across it; by which the superincumbent weight, although moving on two distinct members, yet such members, acting in perfect accordance, produce one effect. The principles of the trot, therefore, are illustrated by the running of a biped, and correspond with it in the mechanism of its action. The space of ground passed over at each change of the limbs in the fast trot, is a sufficient proof that a spring is made in the action, which completely detaches the horse from the ground; and that, acting on the impetus received, the body becomes propelled through a space equal to the force employed. When a soft soil has been trotted over, the impressions which remain are proofs of the extent of these bounds; and the action itself may be distinctly seen when watching the horse in a looking-glass.

1042. *The training a horse to trotting* is not a complicated process, for great speed in this pace is often hereditary, and dependent on a disposition of the motive organs somewhat different from that seen in the race-horse. The trotter is less lengthy and more compact; his hind-legs are in general, and always should be, well under him. It is a circumstance worthy of notice, that horses, with what are termed sickle-hams, *i. e.* with hocks pointing inwards, are often fast trotters. By the outward direction which this formation gives to the thighs, liberty of action is acquired; for it is evident that the angular branchings from the stifle, consisting of the thigh and leg bones, are freed from any opposition which the belly might form. Lounging in a circle is well adapted to give freedom to the trot, but the horse should not be reined up too tightly, as it tends to confine the shoulders, which cannot be too much at liberty. For the same reason also the trotter should not be bitted too severely to harden his mouth; which, on the contrary, should be a sensitive one, so that he may be "kept together" in his action with a very light hand. Any interruption to the uniformity of the trot, such as cantering before and trotting behind, or the reverse, is sure to detract from the rate of speed, and moreover, in a match, calls for a turn.

1043. *Irregularities in the trot are thus described by Mr. Richard Lawrence:* — "When a horse, whose fore-legs are much shorter than his hind-legs, or whose shoulders are very upright, trots fast, he is obliged to go with his hind-legs very wide, so that his hind-feet may come on the outside of his fore-feet. By this means he sinks his croup, and brings it more on a level with his fore quarters, and at the same time he avoids striking his fore-feet with his hind-feet. Horses of this conformation sometimes go in the same form as dogs generally do, namely, with their fore and hind-legs in two different lines of direction, by which one hind-foot comes on the outside of the fore-foot, and this is done with the same intention as in the former instance. They are, however, very unsafe to ride, for the hind-foot is always more or less in danger of catching the fore-foot, in which case, except the shoe is torn off, they must inevitably fall with great violence."

1044. *The elongated, or darting trot*, is diagonally performed, and differs only from the round *knee-up trot* in that, when the impetus is given, the limbs are directed straight forwards without being flexed. It may be a proof of much excitability in the muscular apparatus; but, like all other excitements, it wears itself out; it also mechanically jars the articulations of the joints. Mr. Richard Lawrence's figure of this trot, although a very spirited one and highly picturesque, is too round; indeed, it is altogether too good to characterise the darting trot, which is, to appearance, a fencing or straight forward thrust with each limb. Mr. Lawrence says of it, that "in the darting trot, the horse gains an additional space by the momentum of his body during the period when all his legs are in the air." Some momentum may be gained; but every effort of their, as it were, convulsively throwing the limbs forward, must greatly fatigue; and woe be to both horse and rider should any sudden obstruction oppose itself to this jactatory motion, — a false step might be fatal to both horse and rider: this pace therefore is not a safe one, and certainly it cannot be considered as adapted to gentlemanly equitation.

1045. *The running trot* (*fig.* 165.), although improperly as we think, is often confounded with the darting or elongated trot. To us it appears, on the contrary, to be compounded of the trot and amble, and not to be conducted diagonally. Hence it is that the running trotter is so speedy, for his body gains additional space by the momentum it receives when all his legs, being in the air, meet with no resistance to its transit. In some horses it is a very rough pace, in others it is less so; and some persons, when used to it, even consider it an easy pace. The appearance of scrambling and of fighting with the feet which it presents, is certainly inelegant; and therefore the running trotter is not much patronised by persons of breeding and taste. It is nevertheless not an unsafe pace, and, considering the ground gone over in a little time, it neither distresses a horse so much as might be expected, nor does it appear to be attended with much injury to either the legs or feet. It however requires much elasticity in the limbs, and therefore we have observed old horses that have been famous as running trotters, although far from being worn out, yet fall off in their speed sooner than the rapid movers in any other pace. As regards what we have stated on the two latter paces, we are however constrained to confess, that the most acute eye is so liable to be deceived, and the action of the limbs is so varied by acceleration and retardation, as to defy certainty of description.

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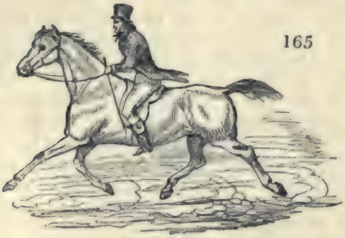

RUNNING TROT.

Subsect. 3. *Match Trotting.*

1046. *Trotting matches* form a very favourite sport with some persons, on which subject Mr. John Lawrence, the ingenious writer to *Scott's British Field Sports*, observes, " I have found no account of trotting matches in the old writers, nor at what period the custom commenced of rising in the stirrups in trotting; nor do I know whether such mode of riding is practised in other countries. Speed in the trot, as in the gallop, is not to be taught or acquired, although it may be improved by training. As a man must be born a poet, so a horse must be born a trotter, or he certainly will never make one of any consequence in a racing view. It depends chiefly or entirely on form. The utmost speed of the trotter, hitherto, has been ascertained by the stop-watch to be a mile in a few seconds less than three minutes; and sixteen miles in one hour upon the common road, with the weight of twelve stone, seems the utmost which has been performed with that weight, unless it be a fact, that the same was performed in 1792, in Lincolnshire, with fifteen stone. Thirty miles were trotted in two hours and ten minutes; and ten miles upon the Epsom road in November, 1810, by Mr. Fielder's horse, in thirty minutes, ten seconds; but of the authenticity of this last, I know nothing but from the public papers. The greatest performances in harness, and with a light carriage for the purpose, have been two miles in six minutes and a half without distress, and fourteen miles and a half in several minutes less than one hour without distress likewise. The latter exploit was performed by a grey gelding, the property of Captain Wombwell of the Guards, which had before trotted sixteen miles in one hour, carrying ten stone; an account of which may be seen in the *Sporting Magazine* for October, 1816. The names of the chief of the capital trotters, within the last half century, are as follows: — Schales or Scott, a trotting stallion, got by Blank the race-horse; Useful Cub, a trotting stallion, got by a black cart-horse out of a chapman's mare (from these two stallions proceeded a great number of trotters of the highest qualification); Monkey; Shuffler; Hue and Cry; Pretender, by Hue and Cry out of a thorough-bred Pretender mare; Aldridge's, afterwards Bishop's, brown mare; Betty Bloss; Marsden's one-eyed black gelding; Archer; Ogden's chesnut mare; Cartwright's gelding; Bishop's grey gelding; Spider; Phenomena. The Locksmith's gray mare trotted, in 1782, seventy-two miles in six hours. Robson's brown mare, Phenomena, attracted considerable attention by trotting in July, 1800, between Huntingdon and Cambridge, seventeen miles in fifty-six minutes; and, afterwards, the same distance in less than fifty-three minutes, when her owner offered to match her to perform nineteen miles and a half within the hour; but the challenge was not accepted. These were, doubtless, extraordinary performances; but it was not considered, either by the public or the trotting jockeys themselves, how much was to be allowed in the estimation on account of the light weight she carried, namely, a *feather*, being ridden by a lad belonging to the Running Stables, weighing about five stone. She had not more speed with a feather, probably not so much, as former capital horses carrying twelve stone and upwards, several of which would, in all probability, have performed with comparative ease as much in an hour, with the same weight, as she did; or even, perhaps, have actually accomplished the *ne plus ultra* of trotting — twenty miles in one hour. Formerly it was a maxim in trotting races, that weight did not form a considerable object, and that a rider of light weight was not calculated for the purpose, whence the matches were always made with catch weights, and very often a heavy one chosen in preference, as was the case in Archer's match, in which he carried nearly twelve stone."

1047. "*About the year* 1783," as we read in *Scott's British Sports*, "Mr. Lawrence, suspecting the rationality of this opinion, after consulting some turf jockeys, made various trials, the result of which was, that weight had its proportional effect upon the speed and powers of the horse, as well in trotting as galloping; and, in consequence, recommended in his book, published in 1796, the adoption of racing weights and turf riders in trotting matches, which plan was adopted by the proprietor of Phenomena. Archer and Ogden's mare from trials, both public and private, were probably the most capital trotters, whether for speed or continuance, which have yet appeared. Although several race-horses have bent their knees, and their action has been in a trotting form, yet only one has hitherto excelled as a trotter. Infidel, by Turk, about thirty-five years since, after he was out of training, trotted fifteen miles in one hour, with ten stone, on the road between Carlisle and Newcastle. In addition to the improvement of light weight, fine level roads have been wisely chosen, of late years, for trotting races. The old trotters used to perform over the common rough roads. On the general subject of weight in racing, I wish to make a parting observation: — Neither the accustomed weights for the year, nor the 'give and take weights,' seem to me possible to be accommodated to the nature of the case. As examples, perhaps seven or eight pounds only will be given, when the ability to carry weight is strikingly different in the two horses: on the other hand, in give and take weights, a horse of fourteen hands will carry nine stone, and one of fifteen hands eleven. Now nature may have reversed this scheme completely, by having enabled the lowest horse to be master of the greatest weight. Matching with discretionary weights, or weight, or age and qualifications, seems susceptible of more accuracy; and perhaps it may be yet discovered, that much more weight may be allowed on account of substance and strength, than has been hitherto supposed." (P. 561.)

1048. *The American horses are celebrated for their trotting*, and of late years we have had several of them sent to England as sporting adventurers; among which Tom Thumb, Rattler, and Rochester, stand conspicuous. Tom Thumb, a galloway of about fourteen hands, on Monday, February 2. 1829, performed the wonderful feat of trotting one hundred miles in harness, in ten and a half successive hours, for a bet of 200*l.* to 100*l.* The betting on this occasion was, however, very limited; time being backed to a small amount only, two to one. The scene of action fixed on was a mile piece of road, commencing at the fifth mile-stone from Staines, into that town and back. "At four o'clock in the morning, the American groom, who seemed to regard his horse with the affection of a relative, was on the alert. He slept in the same stable, and roused him from his slumbers to give him a substantial feed. At six, accompanied by Mr. Henry England and Mr. Frederick Smith, who rode as umpires for the horse, all set out for the five mile-stone, where the other parties had assembled. The distance from the Red Lion was about a mile and a half, and although not yet light, it was evident that the little horse was all life and spirit. He was driven by the groom, who weighs about ten stone. The match-cart, which was made in America, was one of the lightest we have ever seen, not more than one hundred and eight pounds, and decidedly the most compact, although not the most elegant, that has met our notice. The shafts ran level with the body of the horse; and the seat, which was lined with leather, was as near the axletree as possible, so as to give room for the driver to stretch his legs. The principle seemed to be, to place the weight close to the draught; and, in fact, the slightest exertion set the machine in motion. The horse was unseemly in his aspect, rough in his coat, and, at first sight, slouching in his gait; in truth, any thing but what an English eye would select for such a performance. He had four good legs, however, and a brightness in his eye which led the connoisseurs to *calculate* there was something more than common in his qualities, and many began to *guess* that he would vindicate the fame of the Yankee breed of trotters, which are acknowledged to be the best in the world. Two watches having been regularly timed by the umpires, were now produced, and having been stopped at the same moment, half-past six, were at a given signal started at the same instant, and with them the horse; and we must here pay a compliment to the excellent plans of Mr. England, who, having been appointed referee, rode the whole of the match before the American, in a gig, having been supplied with excellent relays of horses for the purpose. Mr. E. foresaw that, to perform so long a journey, the wisest plan would be to prevent over-exertion at first; and, although he knew the speed of the horse was equal to fifteen miles an hour, he resolved to keep him to a steady pace of about ten miles an hour, thus husbanding his strength for the last, if it should be necessary; and, in order to effect this, he further resolved to drive before him himself, with his watch in his hand, so as to regulate his time. This plan had the additional advantage of encouraging the animal, and checking that desire to increase his speed, which, if the road had been clear before him, and horses were travelling on each side of him, he would have evinced, and which to check, would only have produced fretfulness. A stable was prepared for the reception of the

American, close to the five mile-stone, into which he was taken at the end of every twenty miles. Gruel was his only food, but he occasionally took a snap of hay, and never once showed a disinclination to feed."

1049. "*The distances of this trotting match were thus performed:* — First twenty miles in one hour and fifty-nine minutes; taken out, and in stable eight minutes: second twenty miles in one hour and fifty-nine minutes; taken out, and in stable eight minutes: third twenty miles in one hour and fifty-eight minutes; taken out, and in stable eleven minutes: fourth twenty miles in one hour and forty-two minutes; taken out, and in stable eight minutes: last ten miles but one, fifty-two minutes; stopped to wash mouth with gruel, which he took with good appetite two minutes: last ten miles, in one hour. The whole in ten hours seven minutes." From this it will be seen that this game little horse won, and had twenty-three minutes to spare of the allotted time, and that without being in the smallest degree distressed.

1050. *The celebrated American trotting-horse Rattler*, when the property of Mr. Osbaldeston, was matched against Mr. Payne's famed American horse Rochester, Mr. O. backing Rattler 1,000*l.* to 500*l.*, to trot five miles in harness, which was performed in thirteen minutes, fifty-eight seconds. Mr. Osbaldeston came in first by the length of his carriage; but the match was however declared void, because Mr. O. had neglected to pull up when his horse broke into a gallop.

1051. *The trotting match between Rattler and Mr. Lawton's Driver*, a pony scarcely fourteen hands high (which had recently performed seventeen miles within the hour at Smitham Bottom), to trot thirty-four miles (seventeen out and seventeen in), is one among those feats which will long live in the memories of the amateurs of this species of racing, not more for the speed and bottom displayed, than for the disasterous termination in the death of Rattler the winner, which occurred two days afterwards, by which his owner, Mr. Osbaldeston, was supposed to be 4,000*l.* minus, for a renewed match with the owner of Rattler, which was made previously, occasioned by this event a heavy forfeiture. The terms of this unfortunate adventure, as detailed in the *Old Sporting Magazine* for August, 1832, were that Rattler was to carry eleven stone, and Driver nine stone; and should either horse break into a gallop, to turn round at the call of the umpire. Driver was formerly in the possession of the Duke of Gordon, and subsequently became the property of Macdonald, of whom Mr. Lawton purchased him. The day fixed by the articles was Friday, in the July meeting. Rattler, since his match with Rochester, remained in the neighbourhood of Newmarket; and Driver, after being in close training at Smitham Bottom, was conducted in the same direction in the early part of the week, as it had been mutually agreed that the match should come off in that direction. The umpires were, Mr. G. Edwards for the Squire, and a gentleman from London for Mr. Lawton; and on the preceding evening, twelve o'clock in the day was arranged for the start; to commence from the sixty mile-stone, out of Newmarket, to the forty-three mile-stone, through Chesterford and back. Odds, previously to starting, six and seven to four, and two to one on Rattler. There was much betting on time; several persons backing the distance to be done in two hours. The weights having been adjusted, Mr. Osbaldeston mounted Rattler, and Macdonald Driver. On the signal being given, the horses went off at a steady pace, the Squire rather in the rear, a position which it was understood he intended to preserve throughout till near home, when he purposed taking the lead, if in his power. The road was alternately up and down hill, in some places the ascents and descents being rather precipitous, between chalk hills, which rendered it extremely warm and oppressive from a want of a free circulation of air. In going towards town, the horses were met by a gentle and refreshing breeze; but this being at their backs on their return, the disadvantage was obvious. As the horses proceeded Macdonald increased his speed, but Mr. Osbaldeston kept close to his quarters, and waited upon him with persevering industry. The first three miles were done in twelve minutes, and the first fourteen in fifty minutes. At the turn of the seventeen miles Driver was in front about a couple of lengths, and without pulling up they came on in the same relative position till within about a mile of home, near the Ditch Gate. Both horses were now greatly distressed; the pace, though not rapid, was sufficiently fatiguing from the heat of the atmosphere. Macdonald tired his little nag towards the conclusion; but he always found Mr. Osbaldeston close upon his haunches. At last the Squire, finding the period for the push arrived, went forward, and in spite of all Macdonald could do, came in first by about fifty yards; performing the thirty-four miles in two hours, eighteen minutes, fifty-six seconds, or at the aggregate rate of a mile in four minutes throughout. In many parts of the road this pace was exceeded; as the trot for the last few miles did not seem to exceed twelve miles an hour. Mr. Osbaldeston was loudly cheered. He immediately dismounted and weighed, apparently little fatigued. Rattler, however, was greatly distressed, and was led into the White Lion stable, where every possible care was taken of him, but he was stated to be in a very precarious condition. Driver was also greatly distressed, but was conducted into the town and bled. He refused his food for some time, but gradually recovered his spirits, and was pronounced 'in a fair way,' although acknowledged to have been 'dead beat.'"

1052. *Trotters are seldom found among the Arabian breeds.* Many years ago however, Infidel, a thorough-bred horse by Turk, after he was out of training, trotted fifteen miles within the hour, carrying ten stone. Mr. Barnard's mare, of the Arabian breed, is another similar instance, she being reported to have trotted the last mile of a winning race within six seconds of the rate of twenty miles in the hour, and that without being pushed at all. Mr. Apperley, in our opinion, is too severe on this useful pace. "A very quick trot," he says, "is a most ungentlemanlike pace, and only fit for a butcher; besides which, it wears out a horse much sooner than a canter, from the weight being all thrown upon one fore-leg at the same time; whereas, in the canter, it is equally divided between both." The gentility of the pace is certainly a matter of taste. Perhaps this classical sportsman copies the Romans, who likewise contemned this pace, and called trotting horses tormentors (*cruciatores*) or torturers (*tortores*). But as to its hurtful effects on the horses, we have strong doubts whether the canter does not wear out any horse sooner and more certainly than the trot; and we do so on the very grounds that form Mr. Apperley's objection to the trot, viz. the unequal weight thrown on one fore-leg, as will be further noticed when we treat on the canter.

Subsect. 4. *The Gallop.*

1053. *The gallop.*—What is called the gallop may be properly divided into three varieties, all effected, however, by a propulsive effort of the hind quarters. Of gallops there are the racing, or gallop of full speed; the slow, or hand gallop; and the canter. We must however remark, that, although it is not usual to consider the canter as otherwise than a slower gallop, yet whoever will pay sufficient attention to the subject, will perceive that there are essential differences between the two. Indeed, we are now by no means certain that foreign manège masters, who consider all the gallops as distinct paces, are *totally* in error; the canter, it will be seen (although in obedience to custom we have ranked it with the gallops), owns some essential differences: but, with this exception, we still think the gallops to be but modifications of the same action; of which a sufficient proof presents itself in the certainty, that the horse can change from either of the true gallops into any other true gallop, without alteration of his centre of motion or equipoise, or without interrupting the *harmony*, or direct change, of the moving members, but merely by an increased or diminished effort of the same propulsive action from behind. These gallopings will be sufficiently exemplified in our sketches of hunting scenes.

1054. *The gallop of full speed, or racing gallop*, is the most simple of all the paces; for it is little more than a succession of leaps. (See this gallop in our figures of *Exercise*, p. 336.) Simple as it is, it cannot however, in any instance, be commenced without the intervention of the slower gallop, in which one of the hinder legs is first advanced to establish a new centre; for it would require too great an effort to raise the fore parts at once from a state of rest by means of the loins, and to throw them forwards at the first action, to a considerable distance, by means of the haunches and thighs. This fact is well known to jockeys and other sporting characters, and they often derive profit from the circumstance, by wagering with the unwary that no horse shall be found to gallop one hundred yards while a man runs fifty, provided each start together; in which case, so much time is lost in acquiring the due momentum that the man wins: make but the race for one hundred and fifty yards, and the horse would beat; for now the impetus being acquired, he arrives at sufficient momentum to overtake his antagonist. In the extended gallop the fore parts, when raised, are forced forward by the alternate flexions and extensions of the angles of the hinder parts; and as both of the fore, and both of the hind-legs, in the racing gallop, become opposed to the ground in succession at the same moment, that is, as the two fore-feet at once beat the ground together and then the two hind, so it is evident that the gallop of full speed is nothing more than a repetition of leaps. Quickly as these leaps are repeated, yet the surface of ground passed over at each of them must necessarily be great, to accomplish the pace at which the good racer goes. Hambletonian, in his match against Diamond, is said to have covered eighty-three and a half feet of ground in a second; and by the calculations of Monsieur St. Bel, Eclipse covered eighty-five feet of ground in the same time, when at the top of his speed. Every turf amateur must have remarked the horizontal position of the body in the racer at the momentous struggle. Every departure from a rectilinear form of the body would detract from the rapidity of its flight; and therefore even the head and neck are carried so as to fall within the line of the trunk. As a compensation, however, for the loss of the power sustained, the limbs are more extensively flexed, that the circles they form may be more extended.

1055. *The maximum of the speed of the race-horse* appears to be at the rate of a mile in a minute; for few, if any, horses can retain the full velocity of this rate for even that time. It has, however, been run at Newmarket, by a stop-watch, in one minute and four and a half seconds. It is said, but was never proved, that Childers did run at Newmarket one mile in the minute: certain it is that this celebrated horse, when carrying nine stone two pounds, ran over the round course, which is three miles, six furlongs, and ninety-three yards, in six minutes and forty seconds. Bay Malton ran four miles at York, in 1763, in seven minutes, forty-three seconds and a half. Eclipse also ran the same distance on the same course in eight minutes, with twelve stone. The speed of the greyhound and of the hare also are but little inferior to that of the race-horse; but their powers of endurance, at their utmost velocity, are not equal to his.

1056. *The hand-gallop* when performed true, and with the right shoulder forward, may be described thus: — At the instant the horse elevates his fore quarters by means of the muscles of the loins, he throws his fore-legs also forwards, through the agency of the muscles distributed to the shoulders and arms: but it appears that he does not elevate his fore limbs equally; the right is raised a little more, and it is likewise carried a little further forward than the left, which makes the action a pace, not a leap. During this elevation, and in some instances preparatory to it, the right, or off hind-foot moves slightly forward, but only sufficient to gain a true centre, and to correspond with the increased forwardness of the right shoulder; the near hind-leg, it must be remembered, yet remains fixed. The fore extremities now reach the ground, the near fore a little before its fellow, the off fore doubling over it, and placing itself a little beyond it; and the slower the gallop the more considerable will be the distance between the placing the fore-legs. As soon as the near fore-leg has met the ground, and before the off fore has yet taken its full bearing, the hinder legs are moved in the following manner, — the near hind elevates itself, and, as it reaches the ground, the off hind passes it and becomes placed also. It is now that the horse begins to be *all in air* in this pace; for, on the next spring that the hind quarters make, the fore quarters being already elevated from the last impulse, the animal is of necessity completely detached from the ground. The next period when he is likewise so is, when the fore quarters, meeting the ground, gain a new impulse by their rebound, the haunches are again thrown in to take their share in the support, and also to give their impelling power to the mass.

1057. *The canter* (*fig.* 166.). Whereas in the gallop of speed the legs are simultaneous, in the canter they are directly the reverse; and whereas in the slow gallop there is a period in which the legs are *all in air*, so in the canter an essential difference occurs; for, we believe, at no period in this pace is the horse wholly in the air, but has always a point of contact with the ground; and this we conceive to be the grand distinction between the canter and gallop. The canter appears to be conducted thus: — When it is performed on the right, the horse commences by first placing his off hind-leg a little beyond the other; at nearly the same instant he elevates the fore-hand, and places first the near fore-leg on the ground, when the off, doubling over and beyond, is placed in an instant after it. In

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THE CANTER.

the next movement the hind-legs are thrown in, and, while elevated, the off fore-leg becomes raised from the ground, but the near fore-leg is not elevated until the hinder ones are replaced; and this, as remarked above, constitutes the grand difference between the canter and gallop. The sensation to the rider is as different as possible, and so is the action to the eye also. If this be established, it will call to mind that the whole weight of the body must at one time rest completely on the near fore-leg: and that this does take place in the canter is evident from the effects observed; for it is a remarkable fact, though seldom observed by old writers, that in all cantering horses the near fore-leg is more deteriorated, and exhibits more of the effects of *work* than the off. Judicious horsemen, sensible of this, do not therefore permit their horses always to lead on the same leg, but frequently change the centre, and gallop, canter, and trot, sometimes with the right and sometimes with the left shoulder forward. The right foot is usually employed in the lead, when a horse is "breaking in" as a canterer; and it is proper so to commence the breaking-in (*fig.* 166.). If the horse is awkward, or strikes off falsely, tighten the near rein, which, inclining his head to the left, naturally advances his right shoulder, and produces the disposition, when he is pressed forward by the hand, the whip, or the heels, to canter with the right shoulder forward. But we revert to our caution, to avoid the *continued* use of one leading leg, which the reader may rest assured will suffer greatly, and become eventually contracted in the foot, gorged in the pastern, or lamed by splints. Some professed horsewomen use a screw crutch for their saddle, by which they can shift their seat; and to those who ride very much this is a very salutary custom, as the constant use of one posture has drawn the figure of the rider herself a little awry. In justice, however, to the general subject, we must state that some persons, and among them Nimrod, does not consider this pace injurious to horses; and, as it is our duty to glean divers opinions from accredited sources, we readily introduce that of this ingenious writer: — "A canter," he observes, "is much more easy, as well as safer, to the rider than a trot; the horse having his haunches more under him in the canter than when he trots, thereby more likely to recover himself in case of making a mistake, which the best is sometimes subject to. Fast trotting also distresses a horse more than cantering, because in the one he is going up to the top of his speed, and in the other much below it."

1058. *Safety in progression*, as regards all the paces of the horse, is indisputably an important consideration as regards the owners and users of them. Many horses, we know, are naturally safe in all their paces; others are stumblers in one pace, and safe in a second; while some can hardly be said to be so in any progressive movement they make. Can this defect be wholly removed? This will greatly depend on the following circumstances, which are, whether the stumbling arises from a defective formation of the limbs, or whether it be occasioned by carelessness. If the former, the hand of a good rider may, by throwing the horse on his haunches, convert the stumble into a harmless trip; and also the habit even may be prevented by the treatment of a good breaker and trainer, who, by accustoming the young horse to walk over rough land, will habituate him to bend his knees, and carry his feet over the inequalities before him. The Parthians purposely placed pieces of chalk and stones in the path of their young horses, to use them to look to their steps, and to elevate their feet sufficiently. The Romans likewise tied clogs to the pasterns for the same purpose. If training the horse with a defective formation, can at all remedy the tendency to stumbling, it is evident that when it results from carelessness only, artificial means afford even more promise. No horse stumbles by choice, and repeated shocks, by moving him about among impediments, will habituate him to look to his path; gently correcting him also, whenever he is inattentive, is to be recommended. Some horses are unsafe from intermixing their paces, and some from allowing their legs to interfere by crossing them, or by cutting. Here also the hand of a good rider may do much; and by it the progressive action of the limbs may be rendered correct and uniform, and the fore-hand altogether may be elevated in its bearing by his management. Blood-horses, particularly, are apt to be unsafe in all their paces; because, to perform speedy progression, the body and limbs should rather slide along near the ground, than lose time and distance by a more considerable elevation from it. But with our hunters, and even more particularly with our hackneys, safety is an essential requisite; for that fall, which on turf may not be attended with very disastrous consequences to either the horse or his rider, may on a hard road prove fatal to both. We have had occasion in other of our writings to observe, that, although a certain elevation of the limbs, particularly of the fore limbs, is requisite to insure safety, there is even more necessity for the *ground placing* of the foot to be correctly plane or flat. Every observant rider knows, likewise, that much of the safety of progression in the walk, and the trot also, depends greatly on the eye of the horse being intent on his path. It is not necessary that a horse should direct both eyes to the ground he treads on, for his eyes are differently placed to our own, and careful horses do actually view the objects around with one eye, and regard the ground they pass over with the other. Were it not for this, it would not happen that some horses "go very close," and yet seldom trip; some almost never; such having constantly an eye to the ground, elevate the feet over, and only just over, each asperity in their paths:

others, although lifting their feet much higher, are too apt to come in contact with every matter that is but ever so little elevated out of the common way, from being inattentive with either eye to the ground. As already observed, there are other reasons for an unsafe method of progression, as the form of the limbs, by which the whole under surface of the foot does not meet the ground at the same time, but the toe scrapes along its surface ere the whole hoof descends: a low fore-hand, with an upright shoulder, confines the action of the limb; in which case the point of the toe of the horse almost invariably first strikes the ground, and is often also seen to indent it deeply at the very spot of the toe placing. In such a case, if a stone happen to be firmly implanted in the road, and the toe meets it, a violent stumble, if not a fall, is the consequence. It behoves every purchaser of a horse, therefore, carefully to examine how such horse wears his shoes, particularly his fore shoes; and if they be found much more abraded at the toe than at any other part, it is fifty to one but he is a tripper, or stumbler. Nimrod has something on this head so much to our purpose, that we cannot do better justice to our subject than to introduce it; premising that, although fully assured horses may go very near the ground, and yet travel very safely during the day, it is nevertheless necessary to keep in mind, that, some nights being so very dark, crepuscular as the horse is, he cannot see his road sufficiently to avoid the stones in his path. We should therefore prefer the horse that elevates his feet in his walk sufficiently to pass over all usual obstructions.

1059. *Going near the ground*, we readily admit, does not of necessity render a horse unsafe, particularly in day work; yet we still must prefer elevated action, although Nimrod, on the contrary, says, "One most essential quality, a *sine quâ non* in a good hack, is, that he should go near the ground, and yet go safe. Perhaps it may not be generally known that a horse may go very near the ground, and never make a trip; and that another may lift his knee up almost to his nose, and yet be an arrant tumble-down. Were I to say which was the safest animal in all its paces that ever came under my observation, I should have no hesitation in saying it was a mare that was in my own family for upwards of fifteen years, that touched every stone which she passed her foot over, but never made a mistake in all that time. Lifting up the leg, or what the London people call the 'knee-up action,' has nothing to do with a horse going safe on the road. It is not on the *taking up* of the foot, but on the *putting of it down*, that the safety of a horse's action depends. Although I do not go so far as to say (though it has been said) that the fore-legs are merely pillars under the body of a horse, and have little to do with his action, yet I do maintain that they are entirely obedient to the shoulder; and if the shoulder command that the toe shall touch the ground first, instead of the foot coming down flat with the heel well down, it is no matter how high the foot is taken up by the bending of the knee. What I have said may appear rather paradoxical, but a little consideration will establish the justness of my observation. When the leg is bent, as in action, in the form of a **C**, and the foot suspended in the air, turning inwards, with a curve towards the body, were it in that state to come in contact with a stone or any other substance, it would pass it over without resistance, being, as it were, at that time in a flaccid state; but when the foot approaches the ground, the limb is extended, and the whole weight of the fore quarters is about to be thrown upon it. If then the base for that weight be not even and firm, if the toe dig into the ground before the bearing is completed, a trip, and a dangerous one, is the consequence. My argument is exemplified thus:—Man walks very near to the ground, but seldom strikes it with his toe. Follow him over a path where the snow is deep enough to trace him, and you will immediately perceive that he strikes the snow with his heel, but scarcely ever with his toe. If he did, he would constantly be injuring himself, and would soon become a cripple." We respect every dictum from Mr. Apperley, but we must think this ingenious argument in favour of *daisy cutting*, should be received *cum grano salis*, *i. e.* with some caution.

Subsect. 5. *Leaping.*

1060. *Leaping may*, with strict propriety, be considered in the light of a pace (some animals, as the kangaroo, are entirely saltatory); and it is performed by a sudden extension of all the articulations of the hinder extremities, immediately after they have undergone an unusual degree of flexion. This extension communicating its impulse to the centre of gravity of the body, the whole is projected forward, with a velocity determined by the force applied and the weight of the mass. The degree of projectile force depends on the proportional length and obliquity of the angles formed by the bones, and on the strength of the muscles which act on them; hence becomes apparent what has been before insisted on, the necessity that hunters, as well as racers, should be so formed behind, as at once to unite great strength with length. Nevertheless, it does not necessarily follow, that a large horse only can take considerable leaps; for, *cæteris paribus*, small animals leap proportionally farther than large ones; for the projectile force impressed on two bodies being in proportion to their different magnitudes, their velocities will be equal, and the extent of the space through which they pass will necessarily depend upon their respective velocities. Thus a small horse with a light weight will frequently leap very considerable distances, and to a very considerable height; but from the greater extent of the angles, and the increased force obtained from larger muscles, it is obvious that a certain size is necessary to the hunter to cover high and wide leaps; and the necessity is also increased if much weight is to be carried. The direction of a leap depends on the situation of the centre of gravity with respect to the limbs by which the impulse is given: men and birds having the trunk situated immediately over the impelling limbs, are the only animals that leap vertically. Hence, when a horse attempts a standing leap of considerable height, as a wall, high gate, &c. he raises himself almost perpendicularly, and the elevation of his body will always be found correspondent to the height of the object he is to leap over. As the subject of leaping will be more fully treated, both practically and theoretically, in our chapter on *Fox Hunting*, we shall not pursue it further here.

SECT. XIII. *The Stable Management of Saddle-horses.*

1061. *Although* we ourselves are perfectly convinced both of the convenience and the propriety of entering on the consideration of the treatment of all the horses essential to the sportsman's pursuits under one general head, we are not so certain that all our readers may equally approve the plan. The turfite might probably consider his high bred racer as disgraced, by his treatment being seen to have any reference to that practised for the benefit of the hunter; and the hunter may not relish the conditionary processes used to bring his horse with credit through a long fox chase, being recommended as useful also for the well-being of the hack which is ridden to cover. We however have little doubt, but that the intelligent sportsman, whether a turfite, fox hunter, or mere park rider, when he has accompanied us through a few pages of our subject, will equally with ourselves feel satisfied, that the breaking, training, stabling, grooming, feeding, clothing, conditioning, shoeing, &c. &c. are all equally necessary throughout the whole. We are as fully convinced as any one of our readers, that each variety of horse does require variations of treatment in all the essentials noticed, and these we shall be careful to point out; but the principles which guide the whole being the same, they may, with more propriety and with greater advantage both to the writer and reader be united, than disjoined. The peculiarities in the treatment which each class, whether racers, hunters, or hacks, require, be it of breaking, training, &c. &c. we repeat will be separately and fully described.

1062. *On the stable itself*, we shall principally confine ourselves to such remarks as apply to the subject generally, glancing occasionally only at specialties, which occur in stables appropriated to particular varieties of the horse. Hunting stables are usually very warm and comfortable abodes. Training stables are so likewise; but these latter are in most instances situated near the training grounds, that the horses under severe exercise and sweatings may be near home. In large racing establishments, the stabling accommodations include lodgings for the training grooms and their boys, with various other appurtenances, as a forge, &c. &c. The standings for the horses are warm and sheltered, and the arrangements are always such, that they may be shut up in perfect quiet, when their attendants are not occupied in their stable duties. But even race-horses are not, as formerly, immured in full tropical heat, nor in complete midnight darkness. Our limits preclude our entering more minutely into the subject of racing stables, but we refer the inquirer with confidence to Mr. Darvill, who treats fully and skilfully on the subject.

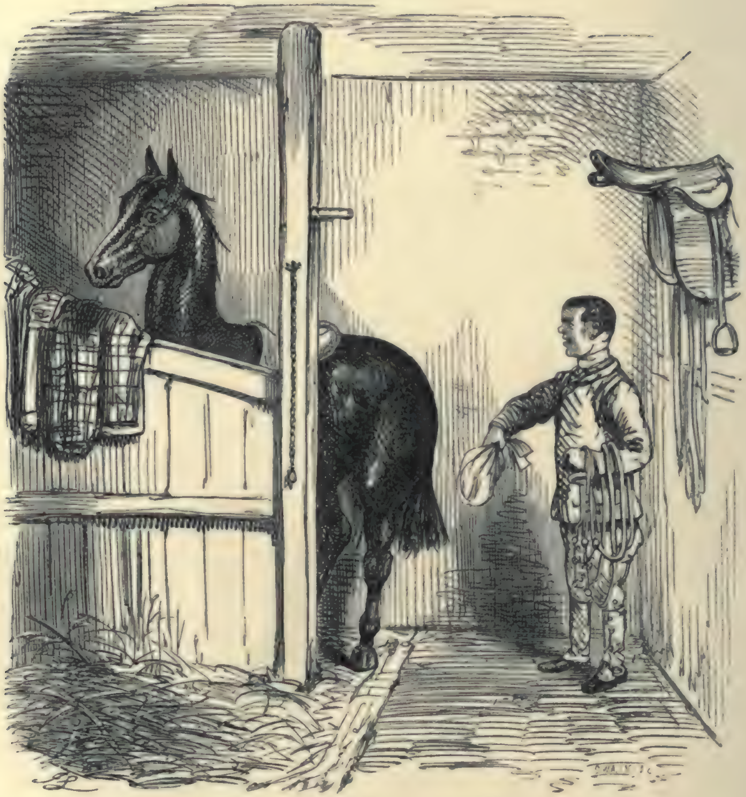
1063. *The stabling of horses*, as it is wholly a deviation from nature, so it is apt to pave the way to disease, and the higher this artificial system is carried, so much the more is morbid liability incurred, unless it be counteracted by much circumspection. A stable should therefore be regulated on the most judicious principles; one of which is, that, while for the sake of safety it confines the animal, it allows sufficient space for his comfort. Another of these principles, and one in general too little attended to, is to have horse stabling sufficiently airy without being cold. It is supposed that heat is essentially necessary to horses generally, but particularly so to those of the blood kind, as being originally natives of a warm climate. Warmth we do believe to be congenial to all of them; but beyond this is only necessary to beget and maintain the artificial state to which we bring the descendants of the eastern breeds. Neither is ardent heat at all essential to the immediate life of the full-blood horse, as we see every day in those which, by age, lameness, or other circumstances, are brought to the lowest services, to the most wretched housings, and scantiest fare; and yet they reach the full period of existence of our indigenous breeds. Removal from the common agencies of a particular climate quickly causes them to lose much of their force, and the constitution soon acquires the power, within certain limits, to submit to such new ones as result from the climate to which an animal may be removed; and in a few generations he wholly loses the dependences of an exotic. The lion, the tiger, and many other quadrupeds of the torrid zone, now live and even propagate with us; and, as more familiar instances, our domestic poultry, although derived from the East, are equally hardy with any other of the feathered *indigenæ*. And the blood-horse also, we repeat, does not appear to require more heat for the simple purposes of a healthy state than any other horse. We say simple, because, though incontestibly proved that heat is necessary to the forced condition of the racer, it does not invalidate the natural principle. We have ample proof, that to confined stables, where the same air is re-breathed over and over, and where great heat also extricates unwholesome effluvia, we owe many of the diseases which swell the veterinary catalogue; which is fully proved by the trifling ailments which befal those that are seldom or never confined. It is well known that, since the full ventilation of our cavalry stables, inflamed lungs, grease, and glanders, are infinitely decreased. With a full conviction of the difficulty of rendering ordinary stables at once warm, and yet thoroughly ventilated, which is the most important point, particularly where the standings are numerous, we would rather prefer them moderately cool, than too warm, for carriage-horses, ordinary hacks, &c. For although all horses to be kept in, what is understood as, *high condition*, as is well-known to every experienced sportsman, require due warmth, even these are now kept on improved principles of ratiocination, and are not in the present day maintained in stewing heat.

1064. *The heat of every well-regulated stable should be graduated by a thermometer*, for our feelings are but a feeble guide to the measuring of temperature. The summer heat should not greatly exceed 65°, nor in winter should the temperature ever be lower than 50°. The summer heat of hunting stables is, however, to be regulated somewhat by the method of summering the horses. When they are to be, what is called, *kept up to the mark* in their condition, the stable should be proportionally warm, as from 65° to 68°. In winter, the minimum should not be under 60°, nor the maximum exceed 65°.

1065. *The heat of many racing stables however exceeds these limits*; the summer heat is usually very considerable, and the winter maximum, Mr. Darvill recommends, should not exceed 62°. We shall again have to remark on the advantages of a genial heat for racers, hunters, and indeed for all horses, who, with extraordinary capacity for rapid and continued exertion, are required to *carry a blooming coat*, but must again repeat that we would, under all circumstances, equally insist on the necessity of a full and free ventilation of every stable whatever, but doubly so of those containing many horses. When any equine epidemic is raging, it is invariably found to visit crowded stables with greater severity than any other, and that in the degree in which they want ventilation. When we consider the vast surface of transpiration of both the sensible and insensible perspiration which the body of a horse presents, and the quantity of deleterious gases furnished also from his organs of respiration, we may well suppose that, without a sufficient outlet, such stables furnish a fruitful source of miasma. Thus when, during a storm, the standings of some cavalry-horses on board a transport were forced to be closely battened down, acute glanders immediately broke out, and carried them almost all off, solely from the effects of their own exhalations. The dung and the urine which fall, are even active agents in promoting disease in an unventilated stable, unless very frequently removed. But little time elapses ere these animal excretions enter into an active state of decomposition and decay, during which ammoniacal gases are given off in vast quantities. The urine, from the experiments of Dr. Egan, begins to separate ammonia in a few hours after its evacuation from the body; and there is reason to suppose, that the fæces also as readily fall into this early decomposition; therefore an equal necessity exists for their early removal. The extreme pungency and stimulating qualities of this volatile alkali are familiar to our senses on every entrance into a close stable; and when soiled litter has been suffered to accumulate, even in those which are more open, our eyes and noses are painfully assailed by the acrid effluvia; and without doubt, such causes engender ophthalmia, and blind thousands of valuable horses. To give exit to the foul air, and free ingress to the pure, every stable should be well ventilated, and such ventilation should be as near the ceiling or top of the stable as possible, as the impure air ascends. The ventilators which revolve quickly on their own centres, unless placed high, are not we think good, because they occasion a draught of air; for which reason, likewise, stable windows should be so constructed as not to open directly on either the head or the stern of the horse: in fact, they should open only in such a manner, that the air may rush in upwards, as seen in the wards of hospitals, committee-rooms, &c. where, though air is admitted, its current is broken. One of the very best methods of ventilating a stable, is by means of one or more tubes, or funnels, according to the size of the building. One or more of these, according to the size of the stables, should be let into the ceiling by a larger end, of twelve or eighteen inches square, which, as it ascends, should narrow at its summit to about four or five inches, and so pass out at the roof of the building, having a raised cup over its top to prevent the wet from descending. We would have every stable sufficiently ventilated; but be it observed, that the ventilating apparatus should be so constructed as to admit of ready gradation, as regards its admission or exclusion of air, which must be regulated by circumstances, as the season, state of the weather, &c. It is evident that it would be a most culpable neglect in a groom, not to add a little extra warmth when his horses are changing their coats or under physic.

1066. *Light also we consider to be essentially necessary to a stable.* It is so to the health of horses, although they have been kept in darkness in former times. Need we appeal to

To face p. 301.



"C—U—R—M ABOUT"

common sense, and ask, whether or not the exit from a dark one must not be a painful stimulus to the eyes? for we see that the imperfect vision produced, makes them startlish and irritable on their first removing from it into daylight. Dark stables have very erroneously been supposed to encourage feeding among horses, and also to make them lie down more. Mr. Stewart of Glasgow warmly advocates the value of light to the stabled horse in his ingenious work on *Stable Economy;* in which he observes, that the best lighted stables he ever saw were those of Mr. Lyon of that city, and these were lighted from the roof, as seen in *fig.* 167. We have likewise seen stables thus lighted, and this method has our most unqualified approbation; for the light so admitted is uniform and without glare. The greatest encouragement to the horse to lie down is a loose box; air, exercise, and soft-water, greatly contribute to hearty feeding. Stables should be well ceiled also, and that very closely; when this is not the case, not only does the dust from the hay-loft fall on the horse, but it frequently enters his eyes; and the impure air, composed of nitrogen and ammoniacal gases which always ascend, lodges in the hay above. In fact, it would be better that both the hay and corn should be altogether removed from the sphere of action of the effluvia of the stable, and be only brought as they are wanted. Narrow stalls are very prejudicial to horses; strains in the back are often occasioned by them; and whenever a stall is less than six feet wide, the groom should have peremptory orders never *to turn the horse in the stall,* but always to back him out of it. Bars or bails are also objectionable from the ease with which horses may play with, as well as kick each other, over them; and likewise, because it being seldom that horses eat alike in point of quickness, when they are separated by bars only, the slowest eater gets robbed of his food.

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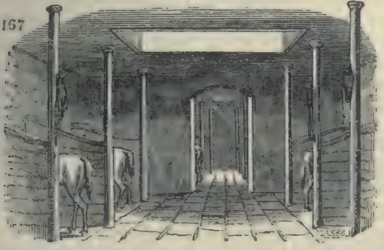

STABLE.

1067. *The acclivity of the generality of stalls* is also a very serious objection to them, for they occasion a horse to stand unequally, and an undue proportion of weight is thrown on the hinder extremities: the declivity also puts the flexor tendons of both the hind and fore-legs on a continual stretch; and, without doubt, many horses are injured by it. A sporting writer, who has condescended to borrow most of his remarks on the construction of a stable from our *Veterinary Outlines,* to preserve, as we presume, some appearance of originality, denies the possibility of the acclivity of the stalls producing any injurious effects whatever. Has he not seen, in the stables of dealers in carriage-horses, an ascent in the standings of nearly two inches in the yard, purposely so made, to give a greater appearance of height to the yet unfurnished *four-year-old* horses, that are often passed as horses of *five years old* on the unwary? Is no strain put on their legs? And again we would ask him, has he ever attempted to stand with his toes (however slightly) elevated? and if so, did not his back sinews painfully remind him of the stress laid on them by the inequality? Our experience, which has been rather extensive in these matters, convinces us that inequality in the standings of horses is a fertile source of contraction of the feet. What but the pain which follows an uneven position occasions horses, when not feeding, to be so frequently found *standing across* instead of *lengthways* in their stalls. How frequently also will the horse, *boxed* in a stall, be found with his croup turned towards the manger. To avert these evils, and yet to prevent the retention of the urine, the smallest possible slope only may be allowed, which should proceed uniformly to the bottom of the stall. A central grating and cesspool is a very imperfect remedy for the evil we complain of; for there must be a general inequality still maintained to carry the urine towards the centre. It is also injurious, either by retaining the urine to diffuse the effluvia we so much wish to avoid, or otherwise it encourages a draught of external air from without, if it be so constructed as to carry the urine without doors: it may be further remarked, that a central cesspool is wholly useless for mares. It is therefore the best plan, that each stall be furnished with a grating placed over a small *trap* drain, at the foot of each stall, which will carry off the urine, as well as the washings, into one common cesspool without doors; from which, being stopped by the trap, nothing offensive can pass up through the gratings.

1068. *Standing on litter during the day* is a subject on which much variety of opinion exists. When the litter is suffered to remain, it certainly entices the horse to lie down, which relieves him if he be fatigued, and is favourable to the recovery of over-strained limbs; it also prevents an uneven or hurtful pressure on the feet, when it is cobble-paved. Neither will some horses stale readily on the bare bricks, deterred probably by the splashing of the urine against their legs. On the other hand, gross feeding horses are apt to eat their litter, which is not desirable; and it is likewise too apt to retain the urine, and thereby to disseminate the acrid saline particles we have described. Constantly standing on much litter makes many horses' legs swell, which is proved by removing it, when the swollen legs immediately return to their proper size. The warmth and moisture retained in it are likewise very apt to occasion cracks and swelled legs. Litter retained in any considerable quantity is probably injurious to the feet also; for if horn has a tendency to contract by the application of heat, the horn of the feet being placed so many hours on hot litter, must be subjected to this additional stimulus to contraction. In our own stables very little, if any, litter was suffered to remain under the fore-feet during the day; on the contrary, the horses usually stood on the bare bricks, which in summer were watered to make them more cool. Behind, a little litter should always be strewed, because horses are apt to kick and break the bricks, or loosen the cobbles with their hind feet; but the quantity, we repeat, should be small, because, when no gratings exist, or no slope is present, the litter thus placed, if in too great quantity, would suck up the moisture of the urine, which would generate effluvia, as well as be detrimental to the hinder feet, which are more liable to thrushes than contraction. Where fresh rushes can be procured, they form the best day litter, particularly for hard dry feet, which show incipient contraction, in which cases we have seen them used with great benefit. The flooring of stables on the Continent is sometimes of wood; with us, it is of brick or Dutch clinkers, or free-stone, or slate. Hard "compos," as it is termed, does not make a bad flooring; but tan, sawdust, or a thin coat of straw, must be laid over to preserve it. A moveable manger is a preventive to horses taking on the habit of crib-biting and wind-sucking. Upright racks are to be preferred, those which are sloped being injurious, by encouraging the fall of hay-seeds into the eyes. Racks are altogether abandoned in many stables now, but they cannot be dispensed with without inconvenience.

1069. *A box is a necessary appendage to every good stable;* indeed, it may with great propriety form a part of the stable, and we would advise that, whenever a new stable is about to be erected, so to frame it that every standing may, by a moveable partition, be readily made into a distinct and separate box. It would indeed be well were in-door horses more generally accustomed to spend their leisure time in boxes than stalls. Boxes are advantageous to the jaded horse, by encouraging him to lie down during the day; they are useful also for the idle horse, by encouraging him to exercise himself. By means of boxes, the evils of long frosts to the hunter are avoided, and the unrestrained enjoyment of freedom is relished by all. A loose box, wholly unconnected with the stable, is likewise a valuable appendage to a gentleman's establishment; it may thus with impunity be the receptacle of a contagious case of disease, as of glanders, influenza, &c. The detached box should be so constructed as to be capable of being cooled to the temperature of the external air for some case of sickness, as inflamed lungs, &c. or, when necessary, to be made as warm as requisite for some medical purposes, or for assisting in shedding the coat. No projections should be allowed in its walls to hurt the hips, in case of falling from debility, or from staggers, &c. It should also have a grate in the centre, communicating with an outer cesspool, with a generally slight, but only slight, bearing of the flooring to the grating. Into a large cool box of this description, every horse taken up from grass should be first put, to prevent the access of the worst colds that horses are liable to, which are those caught on the sudden removal from a cold to a heated temperature. The common stalls or standings of a stable, we would again remark, may with little trouble or expense be converted into boxes, by bars placed across the gangway, or by folding-doors or gates, six feet in height, which will effectually prevent all communication between the different horses. It is however necessary to observe, that where common standings or stalls are converted into temporary boxes, it would be prudent to make the manger moveable, either by its shutting up as a drawer, or to take away at pleasure, which will prevent the horse from dunging into it.

1070. *Where the building of a stable is contemplated,* the rotunda form appears to offer many advantages, and has been recommended with the following general features:—"The circular buildings to contain stables, boxes, carriage-houses, harness and saddle-rooms, granary, lodging for grooms, smith's forge, surgery, bath, and every other requisite convenience for the horse or his attendants; the internal circle to contain a spacious ride, well covered above for the sake of exercise in bad weather; the uncovered area, shut in from intrusion, would form a most convenient space for all the various necessary occasions, including that of a good wash-pond; the roofs of the building to be guttered, and so disposed as to secure the rain-water, which, if wanted, might be preserved in receptacles, communicating ultimately with the pond in the centre." The best specimen of circular stabling we have ourselves inspected, is that erected by T. R. Scott, Esq. of Cheltenham. (See *Sporting Annals,* No. ix.)

1071. *A convenient saddle-room is a necessary appendage to every stable.* To be complete, it should be dry and furnished with a fire-place, not only to air the horse-cloths and keep the irons from rust, but also for the purpose of heating water for mashing, making of gruel, or of giving "chilled" water to drink, &c. &c. This is the more necessary as it often happens to be inconvenient to procure these necessaries and conveniences within doors, and the horse is then the sufferer, by the groom waiting the cook's pleasure instead of the horse's wants.

1072. *Of the general stable appointments it is not to our purpose to say much.* The Dutch collar is indispensable for every stalled horse, to which is sometimes added a neck strap, where he is apt to uncollar himself. There ought to be two rein leathers to every collar, which should run on rollers, and be received within a cavity in the manger post and weighted, so that, as the horse reclines to either side, the rein may be kept on the stretch, by which means the danger of becoming halter-cast is lessened. Muzzles are also in common use as well in the stable of the hackney and hunter as in that of the racer, it being necessary to prevent the craving or foul-feeding horse of either variety from gorging himself, or from cribbing his manger, or biting his attendant; nor should pillow-reins to every standing be forgotten. The various dressing-cloths employed are of leather, hair, woollen, or linen, with the addition of combs, brushes, scissors, mane-pullers, foot-baths, stable pails, &c.

SUBSECT. 1. *Grooming and Dressing of Horses.*

1073. *A good groom is as important to the well-being of a stud,* as a good chancellor of the exchequer is to the proper management of the national revenue; nor without a good groom is it possible to ride like a gentleman. The thorough sportsman, we hardly need remark, has little chance of being even decently carried unless he be possessed of this indispensable requisite to his establishment. In the present improving age, this fraternity has also progressed with the rest; and though there are still some among them ready to believe that stable knowledge comes with the stable jacket, there are many others prone to profit by experience, and ready to benefit by the instruction offered to them. While we write, an instance of this aptness lies before us in a neat little volume, entitled, *The Young Groom's Guide*, by Jeremiah Weal, of whom we have some knowledge, from the circumstance of his having lived in succession with two gentlemen of our immediate acquaintance, who were both zealous sportsmen, and extremely particular that all their stable duties should be performed in the best manner. Far more voluminous and indeed abler works on the same subject have since been published; this, however, in no way does away with the merit of the Guide to which we allude. On principle we can really recommend this work, for it is not only a clever, but a useful and an interesting one also. It is of a kind, likewise, that was really wanted, as it is calculated to make any well disposed stable boy a very efficient groom, and a valet, also, if necessary.

1074. *Grooms own various designations,* according to the different kinds of horses they attend, and to the degree of art required in such attendance, which divides them into certain grades. The *pad groom* is employed in the hack stable and to follow his master, to whom he also in many cases officiates as valet. If his master sports blood nags, and particularly if he occasionally takes a turn with the hounds, the importance of his servant augments, and he borders on the next grade. The *hunting or stud groom* ought to be a very clever fellow; he should already know much, and be ready to learn as much more; for his is truly an important office, particularly if he have either a confiding or an idle master. It is necessary that he should have a full knowledge of training, with all its important bearings and dependences. He should be fond of the chase, and yet sufficiently manifest attachment to his horses and respect to his master, that he should be able to go to the field without making himself one of the company, or attempting, when in chase, to "ride to" hounds. We however, to make our subject complete, must quit the field, and glance at these necessary and indeed important aids on the sod or turf. The *regular training groom* is a still more important personage than those already noticed: to him is intrusted the care and management of the racing stables; it is he that regulates the whole discipline of the racers, and he has likewise the direction of the subordinate grooms and stable lads. The *trials* are conducted by him, and on his fidelity and judgment immense sums are dependent. The *training groom* is also a person of no mean consideration, for much of the future reputation of his employer's racing establishment depends upon him. He superintends the whole of the crossings and breedings, and on him devolves the care of rearing the young stock. Much likewise depends on his management whether they enter on their training in *high form and vigour*, or whether they are *below par;* in which state, if their training be severe, they will long remain so. Having said thus much to complete the chain, we will proceed with the duties of the groom generally, wherever good horses are kept and good grooming is required.

1075. *Racking and feeding are, in stable language, the first morning duties of the groom.* The hay should be first shaken to clear it from dust, and then but a small portion given to leave the horse his full powers for the digestion of his corn; indeed, were it not from a fear that the eagerness of the early appetite might make the horse swallow his corn without sufficient mastication, we should prefer giving the oats first; and when two morning feeds are allowed, we strongly recommend to commence with the corn. When this is not the case, after racking, give the usual feed of corn, which should be first well sifted and looked over, to separate any extraneous matter. The morning allowance of water is usually reserved until after dressing, but we have known some horses who would not feed until they had drunk. We therefore advise that this time of watering be not obstinately adhered to; but that it be made to suit the appetites of the horses themselves. A careful groom will study the peculiarities of each horse, and then his own judgment will be his best guide.

1076. *Mucking out*, we need hardly state to be the clearing away the entire of the dung and moistened litter, and is practised twice a week in some stables, and three times in others. On all the intermediate days, the stall is partially ***set fair***, till the dressing is completed, by merely passing more or less of the clean bed under the manger, according as the horse is accustomed to stand on much, on little, or on no litter, during the day. The dung being shaken off, and the wet straw being thrown back, that which is moderately dry is usually littered down for the horse to stand on; and where a full bedding is allowed during the day, the clean litter is afterwards strewed over it, when the stable is expressly said to be "set fair."

1077. *The dressing or cleaning is next proceeded with (fig. 168.)*, provided the horses be not taken out to early exercise, which usually depends on whether they are or are not wanted for work. On the dressing of horses we shall premise that, as some idle grooms are apt to rely principally on warm clothing, a hot stable, and heating food, for a glossy coat, to the neglect of *elbow grease*, as good dressing is termed in stable language, we must inform them, that it is not only to remove dirt and to make the coat shine that we dress horses, but that we do it as well to ensure their health, by the healthy excitement of the surface of the body. The dandriff or scurf is continually generated by the horse's skin, in the same manner as the scaly matter accumulates on our own heads. Therefore, without proper dressing of the one, as without a sufficient combing and brushing of the other, the scurf collects and plugs up those exhalant and inhalant pores by which the perspirable matters pass off, and by which air and moisture are absorbed. It is thus only that many persons can keep off violent itchings and headachs by daily combing and brushing their heads; and the accumulation of two days' dandriff on the skin will produce a painful sensation in some horses. It cannot therefore excite wonder, if the stoppage of such an extended surface of exhalant pores as the horse presents, should produce itchings, eruptions, surfeits, &c.; nor that the closing over the inhalant pores should prevent the absorption of aqueous moisture, and, as we believe, of atmospheric air also. It is only by the absorption of aqueous moisture from the atmosphere, by means of the inhalant pores, that horses at grass are sometimes supported wholly without drinking. The juices of the grass in a slight degree, and the moisture inhaled from the air in a much greater degree, supply all their wants. Can it then be wondered at that we plead a further necessity of well dressing horses, beyond that of their appearance alone? It is likewise a fact, which we have proved by close observation, and we pledge ourselves that it will become as apparent to any other person, who will be at the pains of making a comparison between any number of totally undressed horses and of the same number that are well dressed, that the ratio of spirit, of cheerfulness, and of endurance likewise, under their work, will be greatly in favour of the well groomed party. This is not a mere speculation; and we again pledge ourselves, that, only reverse the experiment, and allow those that were heretofore neglected to be well cleaned and rubbed, and the others to take their places, and to accumulate dandriff, dust, and dirt, that the balance of general cheerfulness, of spirit, and endurance under work, will then be found to be in turn on their side.

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DRESSING A HORSE.

1078. *Periodical friction of the skin of horses is a species of artificial exercise;* and thus, when frosts, lamenesses, &c. &c. confine them to the stable, the currycomb and brush help to diffuse the circulation throughout the system, and prevent its flagging in the extremities, to the production of cracks, grease, swelled legs, surfeits, &c. In proof of the popular experience of the salutary effects of dressing, or currying the skins of quadrupeds generally, it is common, with such inhabitants of the Continent as stall-feed their cattle, to curry them also night and morning, with the same regularity that we dress our horses. This they do as the only means of obviating the ill effects of total confinement. The same method is pursued by many of the London cowkeepers, who wholly confine their beasts. Pigs regularly curried are likewise observed to thrive much faster than those which are left to encase themselves in their own filth. The wild boar is as clean an animal as a hare, and as free from skin eruption, for he is known to clean himself daily by drawing his body through bushes, brambles, &c. &c.

1079. *The grooming of race-horses* is conducted with the same order and method with which every operation connected with the turf is carried on; and were it not for the tricks and artifices that are invariably learned in stables, where so many operators congregate, whose united aim is concealment from others, and gain, *sub rosa*, to themselves, it would be well that grooms of every description should be entered at a racing stable. Mr. Darvill describes the dressing of the race-horse thus, simply, clearly, and circumstantially: — "The boy, in coming in from exercise, rides his horse into the stable, turns him round in the stall, dismounts, slacks his girths, takes off his hood, bridle, and boots, unbuckles his breast-cloth, turns it and the front part of the quarter-piece back over the saddle. Having put a bit of hay on the ground for the horse to eat, he commences dressing his head, neck, and fore quarters, first, by wisping them perfectly clean with a damp wisp of gardener's matting or hay, and then he uses his brush in the same manner. This being done, he sponges his horse's mouth, nostrils, and eyes, with a damp sponge; and then, with a linen rubber he wipes his horse's head and every part of his fore quarters perfectly clean; combs out his mane and fore top, and giving his ears a few strokes with his hands, he turns him round in the stall, puts on his collar and dressing-muzzle, and chains up the horse's head to the cribbing-board. The boy, after kicking a sufficient portion of the litter well back, takes his rubber, spreads it on the litter close to his horse's feet, puts into the rubber the dirt which he picks out, and which he afterwards throws into the middle of the stable. He then washes his horse's feet clean, and, after having given his legs a few strokes down with some soft straw, he takes off the saddle, and puts it in its place; he then strips his horse, throws the clothes into the manger, or puts them on the top of the rack, and begins (on the off side) to dress his horse's body, first, by wisping him well over, twice on each side. In the same manner he brushes him over on each side, then wisps him again once on each side, wipes him over with the rubber, and finishes on the near side; he then clothes him up, observing to place the wrong side of the pad-cloth up, with a view to keep it clean, as it is sometimes wanted at the time of saddling when the horse is going to run. The horse's hood and woollen rubber are thrown over his loins, as from ranging about in the stall, while being dressed, he gets a little warm; the hood, therefore, is for a short time made use of in this way to prevent the horse from becoming chilly. His mane and tail being combed out, the boy kneels down on the near side of his horse and rubs his legs, first, with some soft straw, and afterwards with his hands or a linen rubber. He then sets his bed fair, and the horse is suffered to stand, with his head up and his muzzle on, until he is fed." (*Treatment and Training of the Race-horse*, vol. i. p. 306.)

1080. *The actual manipulation of dressing, or cleaning, stabled horses has*, however, undergone no very great alteration for two centuries, as will be apparent by the directions of Baret, one of the best of the old writers of that time: — "Having tied up the head," says this venerable author, "take a currycomb, and curry him all over his body, to raise the dust, beginning first at his neck, holding the left cheek of the head-stall in your left hand, and curry him from the setting on of his head all along his neck to his shoulder, and so go all over his body to the buttocks, down to his cambrell-hough; then change your hands, and curry him before on his breast, and laying your right arm over his back, join your right side to his left, and curry him all under his belly, near his fore bowels, and so all over very well, from the knees and cambrell-houghs upwards: after that, go to the far side, and do in like manner. Then take a dead horse's tail, or a dusting-cloth of cotton, and strike that dust away which the currycomb hath raised. Then take a round brush, made of bristles, and dress him all over, both head, body, and legs, to the very fetlocks, always cleansing the brush from that dust which it gathereth by rubbing it upon the currycomb." The modern groom, however, from the fine coat which his horse generally carries, has little other use for a currycomb than to clean his brush on; but for horses with long coats, plastered with dirt and matted together with sweat, the currycomb is necessary; but it should be applied with mildness, as the skin of some horses cannot bear the irritation of the sharp teeth of the instrument. A similar caution is also to be observed with regard to the brush, wisp, &c. which, although they do not lacerate the skin, yet tickle it. How unbearable this sensation is, the groom should be aware by the effect it has on his own person; and if he winces and flies from the fingers even of his sweetheart, when she thus threatens him, why should he be enraged with the poor horse who, like himself, only attempts to evade an almost insupportable sensation? But to return to the dressing, which is directed by Baret, after the currying and brushing, to be proceeded with by "taking a hair-cloth, with which rub him again all over very hard, both to take away the loose hairs, and to help to lay his coat; then wash your hands in fair water, and rub him all over with wet hands, as well head as body; for that will cleanse away all those hairs and dust the hair-cloth left. Lastly, take a clean cloth and rub him all over till he be very dry, for that will make his coat smooth and clean. Then take another hair-cloth (for you should have two, one for his body and another for his legs), and rub all his legs exceeding well, from the knees and cambrell-houghs downwards to his very hoofs, picking and dressing them very carefully about the fetlocks, from gravel and dust, which will lie in the bending of his joints."

1081. *Modern grooming has*, however, added some minutiæ to the olden methods, among which wisping is prominent. When the currycomb is much used, wisping usually follows next; but when the brush takes the place of the currycomb, wisping in the hands of many grooms follows brushing over. The best wisp is made from a hayband of a moderately fine texture, of which take about two feet and a half; then, first untwisting it, redouble it and twist the two parts together, having previously moistened it with a little water, which fashions it, and fits it to wipe away the dust more effectually. It must not escape the groom's recollection, that as health is an important end in horse dressing, so no accessible part of his body is to be left without its due share of friction. By a dexterous changing of the hands, the whole may be conveniently come at, observing that, when the horse is cleaned off, whether it be with wisp or brush, that the hand be carried in the natural direction of the hair, so as to leave it smooth. In very cold weather the careful groom will not unnecessarily expose his high-conditioned hunter; but, on the contrary, he will keep a cloth over one part while he is cleaning another; for, as the time required to properly dress such a horse cannot be less, and often requires more, than an hour, so exposure during the whole of that period might "set his coat." Stains on the hair are best removed by sponging, and, when the tail is very dirty, add the water-brush; but if a horse has been properly attended to, actual dirt ought never to be left on him at all, but stains are often got by lying down on the soiled litter.

1082. *The finishing off takes place after the dust has settled*, when the duster, be it of linen, flannel, or hair-cloth, is applied, "finishing off" in the direction of the hair. Now clothe the horse, observing, that whatever is worn be put on in a workmanlike manner, or, as Jeremiah Weal directs, "to take them, *i. e.* the horse-cloths, in both hands, with the outside of the cloths next you, and, with your right hand to the off side, throw them over his back, and not hang them over his tail; place them no further back than they will be straight and level, which you will find to be from a foot to eighteen inches from the tail. Put the roller round, and the pad-piece under it in the proper place, which is from three to eight inches from the fore-legs;" we would also add, taking care that the roller be not put on too tightly, neither that it presses on any doublings or wrinklings in the cloths, which will fret some thin-skinned horses much. The manipulations which usually follow the clothing, are to loosen the horse's head, and turning him about in the stall, to give his now naked head and ears a thorough rubbing and brushing over every part, ears, throat, and channel, with the dusting-cloth, with which gently rub, to stir up the remaining dandriff, and finish by what is called "pulling his ears," not in the offensive sense of the word, but, on the contrary, by what all horses seem to enjoy much, that of passing the ears through and through the hands. This done, comb out the mane and foretop, which finished, pass over them a wet sponge, and then putting one end of your horse napkin on the near side at the top of the mane, pull it over to the off side, pressing the mane and hair next the root of the mane, from the ears to the withers downwards, to make it lie smooth. Now, turning the horse back towards his manger, buckle on his stall-collar, and comb his tail, wiping away any dirt or filth that may be lodged around his dock by means of a wet sponge. When a cloth is used for this purpose, it is well to remember that one end may hang loose, and so tickle the horse as to make him kick, which we have witnessed. The foot should now be picked out, and washed if necessary, which having done, commence rubbing the legs either with a hair-cloth, or, if very dusty or dirty, with a clean loose wisp of straw in each hand, for which purpose the groom must go down on both knees, pass the wisp down the legs and sinews, and finish with passing his hands down in like manner, to feel that they are smooth, and that no particles of the straw or thorns, or thistle points, adhere to or stick in the hair. In addition to these general directions relative to the legs and feet, and although Michael Baret has told us "to rub the legs exceeding well," we think the subject is of such paramount importance to the well-being of every horse, that we cannot forbear from pressing on the minds of grooms, and indeed on all who are concerned in horses, *that friction to the legs is both a preventive and a cure of disease.* It prevents gorgings, which are the forerunners of cracks and grease, and it disperses such accumulations as are already made. Few actions relieve the tired horse more than well rubbing his legs; and it is remarkable, that whatever a horse resists, he very seldom resists this. Further, whenever a horse comes home in a dirty condition, it is prudent first to attend to his legs and feet, which should be well washed: but when the weather is frosty, it should be done in tepid water; it is essential to his health, and it also affords him much comfort and refreshment. We know how grateful it is to ourselves to put our feet into water after great fatigue; and we cannot but observe by their manner also, that it is the same to them. The feet of horses require also daily examination; they should always be well picked out whenever they come in, to remove stones and dirt, which may have lodged between the shoe and sole; and which, if suffered to remain but a few hours, might do irreparable injury. The state of the shoes should likewise be looked to every morning, not only as to their actual wear, but also to see that the clenches do not protrude to cut the legs, or that the shoe may have gotten awry, or become loosened. Whenever a set of shoes has been on three weeks, particularly where the hoofs grow fast, even if such shoes be not worn out, they should be removed; for in every instance as soon as the horn of the foot grows too high, it begins to contract; and there are more horses ruined by standing too long without paring down the hoof, than by all the bad shoeing that is practised.

1083. *Watering usually follows dressing*, after which a second feed of corn is given, where four feeds per diem are allowed; but where the horse is limited to three only, it is common to rack again with hay, if the horse be not going out to work. *Setting the stable fair* for the morning is the next object, which Jeremiah Weal thus discourses on: — "Shake the horse's bed three or four feet behind him, if the stable will admit of it, and put some straw under the manger. Lay it high near the sides of the stall, and rather high behind the stall-post; leave the straw somewhat hollow and thin in the middle, and behind the horse. Shake up the sides well, and lay them level and smooth. You may tuck the beds up with your hands or fork; if with your hands, you must have a straight stick or lath to stand on near the edge of the straw while doing it; but whichever method you adopt, be sure to leave it straight and even. The platted mat looks very neat laid down in front ot the beds, but is rather more generally used in dealer's stables than in gentlemen's; it looks however neat in all: it is platted with three plattings the whole length of the stable, leaving out the ends of some of the straw to meet with the beds." (*Loc. cit.* p. 6.) It is usual now, after having fastened up the heads of the horses, to leave the stable for breakfast; and on the return to it, if no horses are to be got ready for the morning work, the time is usually employed in attending to the horse appointments, as bits, stirrups, reins, girths, and harness of all kinds.

1084. *At noon again feed as in the morning*, and set the stable fair by taking away the first dung made, and by putting the litter straight and neat. In very hot weather, and at all times, to a naturally thirsty horse give a few *go-downs*, *i. e.* gulps of water; but at all events do not protract the midday draught longer than two or three o'clock, at which time most hackneys have water, although some hunters are debarred from it until night. At four o'clock it is also usual again to strip and dress the horse, for, although he may be neither dusty, nor dirty, dressing now has the same salutary consequences as in the morning: the dung is to be again removed; the litter, &c. is again set fair, and the stable duties then cease till night.

1085. *Racking up for the night* commonly takes place about eight o'clock. At this time give a sufficient quantity of hay for the night's consumption, and also the remainder of the corn. Two-thirds of a pail of water should be given now: indeed many large and craving horses require a pailful; but the hunter is usually more stinted, particularly if he is going out with the hounds on the following morrow. Now proceed to stop the feet, where that method is practised; the propriety of doing which, either every night, every other night, or twice a week, depends on circumstances. Horses much confined in the stable throughout the year, being at the same time highly fed and warmly clothed, but particularly such as stand on litter constantly, require their feet to be stopped every night; and as it is the heat and desiccation around that prove injurious, so by the application of moisture, we at once generate cold and soften the horn. The most simple stopping therefore is the best; all that is required being, that it retain sufficient moisture, and remain fixed in the hollow of the foot. Cow-dung, with a very small proportion of loamy earth, is not amiss; but to stop wholly with clay is bad, a baked tile at the bottom of the foot not being very comfortable. There are many mechanical contrivances now to be seen at the saddlers for the purpose, among which *Mr. Cherry's foot-pads* may be noticed as popular, because they are good. When there is incipient contraction of the whole hoof, besides night stopping, the horse should have the whole superficies of the horn kept in a state of moisture, as will be further noticed when we treat on shoeing. The feet being thus attended to, proceed to change the day clothing for the night rug, make up the beds high at the sides and full behind. adding a little fresh litter to each; which we prefer to the custom of doing it only twice a week, except to such horses as are apt to eat their clean straw. Now let down all their heads, set the stable fair, and in cold weather, having seen the water buckets are full for the morning's drinking, that all the head-stalls are secure, and every thing safe, retire for the night.

Subsect. 2. *The Clothing of Stabled Horses.*

1086. *Few of the better kinds of saddle-horses stand entirely without clothing*, for in winter it warms, and in summer it prevents the irritation of flies. For the high-bred hunter, and for the racer particularly, the quantity used is considerable, and is varied in the quality of its warmth to meet the real or supposed wants of the wearer. Among the subjects of disputation relating to the treatment of horses, that of clothing them has had its share; and on this matter, as on many others, prejudice and a hasty adoption of false principles, have frequently taken the place of cool reflection. *A priori*, it would appear that those who object to clothing stabled horses are justified in so doing; but the justification would accompany their objection only to a certain point. It must be clear, that as soon as we determine to expect of the horse an artificial appearance, artificial means must be resorted to to gain our ends; consequently, to have their coats as fine in January as in June, they must be clothed: but we by no means recommend for the hackney the complete suit of the racer.

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1087. *The clothing in use for racers,* we repeat, varies much according to circumstances, both in quantity, quality, and fashion (*fig.* 169). The full set comprises the hood, sheet, quarter-piece, breast-cloth, pad-cloth, and fillet-cloth, with rollers to secure them; these form a complete suit of clothes. The suits vary in their manufacture; they are, however, usually made of kersey-check, like those of other horses, but of a lighter kind. There are likewise in racing stables heavy suits, particularly employed for the purpose of sweating. The first hood of the sweating clothing should be made without ears, that additional hoods, when necessary, may go over it, the last only being furnished with ears. The body-sweater should be large enough to envelop the whole carcass, and to wrap round the neck likewise; and the breast-sweater, or breast-cloth, should be equally capacious. When the sweat is intended to be a profuse one, other large blanket pieces are usually added. In summer, racers usually wear suits of white serge for clothing. In Darvill's work, some very judicious improvements on the clothing are recommended; one of which is, that instead of the stiff leather used to attach the breast-cloth strap (and which, when hard-pulling horses are galloping, often chafes the knuckles of the riding boys seriously) softer leather should be substituted, as that of which the saddle-seats are made. This would not be found strong enough we think; but had he proposed that buckskin should be used, the whole fraternity would have been benefited, for we know that serious and obstinate sores have been occasioned by the stiff leather. His next recommendation is also a very good one, and the want of what he alludes to has struck us forcibly when watching the training gallops of race-horses; particularly we have remarked it on the bleak Sussex downs in the neighbourhood of Lewes and Brighton, where the keen sea breeze, in the stable boy's language, " was ready to *nip'em in two.*" We both, it seems, have an eye to the inefficiency of the common quarter-strings in keeping down the clothes to the body in windy weather; and our mentor for this purpose proposes to substitute, or add, " loops on each side of the centre and back part of the quarter-piece and sheet, so that a portion of binding might be attached to those loops, in the way of a crupper, with such horses as would bear it."

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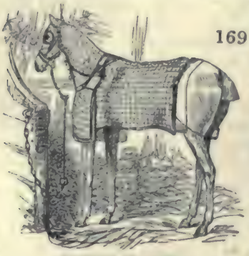

CLOTHING OF RACERS.

1088. *Race-horses, both old and young, should be booted,* as well as hooded and clothed (*fig.* 169.) when exercising. The racing colts, until they are furnished, seldom step true; and by habit, or often by the wear of the limbs, they either strike the lower angle of the knee in the *speedy cut,* or they bruise and wound the fetlock. Indeed some race-horses by their frantic movements, manage to injure their legs even in their stalls, so as to make boots necessary for them there also, particularly when dressing; but during exercise every racer requires booting, and the stronger the work, the more necessary is this appendage. Exercising boots are usually made of the same stuff as their woollen clothes; occasionally also a piece of leather is placed over any one particular part the horse strikes most frequently. These boots are made longer or shorter according to circumstances, and are strapped on with two, three, or four buckles, according to the necessities of the horse they are made for. Every horse should have his separate and distinct pair, for which he or she should be critically measured, and appropriate hollows must be formed for the free action of the fetlock joint. They should be well padded also within, and the edges should either meet, or otherwise should lap somewhat over; but the former method, under a good saddler, makes much the neatest, and indeed the best, finish.

1089. *Knee-caps are also essential parts of the racing gear,* and we should always recommend them to be used with wither straps, which prevent the necessity of buckling them so tight as we have seen done, and from which we have known serious mischief to occur. Mr. Darvill however assures us, that if knee-caps are made in the manner he directs, they will be equally harmless and equally secure, without the certainly disagreeable appendage of the wither straps. (See his work on *Training,* vol. i. p.201.)

1090. *The hunter's clothing in cold weather* is a kersey-sheet and quarter-piece with roller, and usually a breast-piece also. To these, particularly where well-bred horses are employed, a hood is sometimes added; but however proper it may be to exercise in a hood (which indeed should always be worn when walking only is allowed), we think it should not constitute a regular part of the stable dress. Even breast-clothes have the effect of keeping a part in an undue state of heat, which the moment the horse goes out to his regular work, is the most exposed to the wind and rain. The day clothing of the hunter is commonly exchanged for the rug and roller at night.

1091. *The clothing used for the better sort of hackneys* is much the same with that worn by the hunter; even the hood and breast-piece are often employed; and, indeed, the general treatment as regards conditioning, feeding, exercising, &c. are now much alike for both: but it must be allowed, that however it may tend to improve the appearance of the hackney, or even increase his spirit, it must nevertheless subject him to cold on a change of stable.

SECT. XIV. *The Varieties and Qualities of Horse Provender, the Times of Feeding and Watering, with the Quantities given.*

1092. *A judicious choice of food,* and an equal prudence in the appropriation of the quantity of it to the actual wants of horses, are almost as essential to their condition as they are to their existence. We are however too apt to locate our notions of the edibles employed for both these purposes, and to confine our views to the grass, the hay, and the corn of our island only without, considering that every country has its peculiar products, from which the *materia dietetica* of its horses is gained. This confined view is injurious to the general cause of philosophy; it narrows and misleads our physiological conclusions on the digestive organs, an intimate acquaintance with which is essential to the forming of just notions of the process of conditioning any animal, from the pugnacious quail, which figures in the arena of eastern countries, to the race-horse, which competes so conspicuously with its fellows in our own. In some very sterile countries, horses are forced to subsist on dried fish, and in many others, animal matters are given as edibles; as milk in Arabia, flesh-balls, eggs, broth, &c. In India, and other parts, where a natural or accidental scarcity of proper esculent vegetable matter occurs, grain, vetches, &c. are resorted to. The food of horses may be divided into the natural and artificial, and also into the dry and the moist; but they may be most conveniently examined, by considering them under the leading heads of herbage, green and dry, grain, and varieties, which latter are composed of substances that embrace the principles of both these, as pulse, roots, fruits, mixtures, and cooked or partially digested food.

1093. *Of herbage as a succulent food,* the most important are the grasses, of which a great number is known among agriculturists, most of them being eaten by horses either in a moist, or otherwise in a dry, state, under the name of hay. The principal hay food of our racers, hunters, and hackneys, is formed from meadow grass, of which the upland is by far the best. Clover, rye, sainfoin, lucern, vetches or tares, and melilot, are also formed into hay for agricultural horses, or as a change for the others. Of these latter it is customary to form a stable food in their green state, which is called "soiling a horse," and is found highly useful in cases of a morbid condition, dry coughs, the chronic affections of grease and farcy, &c. &c. Great care however is necessary to procure all soilings fresh, and to prevent their heating, by spreading them about. In France, Spain, and Italy, leaves of various kinds, as vines, limes, &c. &c. are collected, and given both green and dry. In Holland, a particular reed flag is given in the same way. In Hungary, the dyer's wood (*Isatis tinctoria*) is used for horses; and as it affords three or four crops a year, it may be always collected fresh and green. In many parts of the south of Europe, the leaves and smaller twigs of the acacia are so employed. On the food of horses in India we would further remark, that, as the indigenous grasses mostly grow to an enormous height, and contain but little nutriment, numerous other vegetable substitutes are made use of; the principal of which, however, are farinaceous. In many parts of the European Continent, furze, or whin, is used in districts where grass is scarce; and it is found to form an excellent food both for horses and cattle of all kinds. It is usually prepared by crushing, and, when not done for them, by degrees horses and asses learn to do it for themselves with their feet.

1094. *Hay,* as is well known, is formed from grasses, which being cut during their seeding processes, and exposed to the action of the sun and air a proper time, are then collected into large masses called ricks, cocks, &c. where a certain degree of fermentation takes place, before the vegetable matter of which they are composed becomes wholesome or nutritious, or before it receives such alteration as fits it for resisting further decomposition and decay. The judicious management of this fermentative process, it is evident, must form a very important feature in agriculture. Pursued to a proper extent, the remaining moisture acting on the farinaceous parts, as the seeds, by the united aid of the external temperature, and the internal heat evolved during the process, the whole mass is, as it were, malted, and sugar is produced. Pushed beyond this, the hay becomes carbonised or mow-burnt; its nutritious properties are then lessened, and its noxious qualities increased.

1095. *On the subject of hay-making,* it is however the opinion of some intelligent agriculturists, that the aroma of the plants is dissipated by drying in the sun; and as this aromatic oil forms a powerful stimulus to the stomach to digest the hardened substance, it would, in such case, be better were hay (whenever it could be done) made in the shade. It would probably still further add to its active qualities, if it could be made wholly without light. In preparing plants for pharmaceutical purposes, we have full proof that, when dried without light, their active principles are more fully developed. The digitalis, or foxglove, in particular, is well known to be one-third stronger in all its medicinal properties when thus prepared, than it is when dried after the old method of being exposed to the sun.

1096. *Many substitutes are occasionally used for hay.* In our own country, wheat, barley, oats, rye, and other straws, are used; but straw serves more to distend the stomach and to mix with other matters than to nourish alone; horses however, when at rest, can subsist on it. In some parts dried fern, in others reed flags, dried leaves, small branches or twigs, collected and dried, are so used. In the West Indies the tops of the sugar-cane are stacked for the purpose; and the straw of the zea maize, or Guinea corn, is likewise so employed.

1097. *On the direct nutriment afforded by hay* different opinions are formed; some holding it very cheap, others lauding it to the skies. If the animals we usually give it to can be supported by it, of which there is ample proof, it must have sufficient nutritious properties. Will it, however, support them under great and accelerated exertion? The answer is, — No. Hay, to support life even, must be taken in great quantities; much time must be allowed to digest it, and much water to furnish the necessary gastric maceration in the stomach. All these circumstances are directly against those uses of the horse to which luxury and the wants of commerce have applied him; particularly the lighter varieties. Among these, therefore, hay is more used as a condiment, or as we use our vegetables to increase the bulk of aliments to a healthy distension of the stomach; and as such, therefore, very little of it is actually necessary where horses are put to extreme exertion; for their artificial life appears best maintained by condensed nutriment, such as grain. In some posting and fast-coach stables hardly any hay is allowed, because it uselessly distends the stomach. These are the extreme cases; but the inference to be drawn is, that the uses to which we apply the horse will best dictate the quantities of either kind of provender, bearing it in mind that horses, like ourselves, vary constitutionally, some being more readily and more simply nourished than others.

1098. *The grain used for horses is also of various kinds*, and possesses different degrees of nutriment, according (as is supposed) to the various proportions of gluten, sugar, and farinaceous matter each variety contains: but a graduated scale of these components has not been found to throw much light on their relative powers of animalisation; nor can the laws and phenomena of organic life be satisfactorily accounted for on mere chemical principles. Grain seems peculiarly fitted for the support of those animals whose stomachs being small, muscular, and partly cuticular, approach the nature of the gizzard, or food-pouch, of the gallinaceous tribes. Such animals are thence called granivorous, as the horse, in distinction to the graminivorous, or grass-eating, as the cow, &c. Now, although the vegetable stalk will furnish bare existence, yet it is from the nutritious qualities of the fruit or seed that he is best supported: in South Britain, therefore, oats are almost exclusively used as horse grain. Sir Humphrey Davy has, from analysation, supposed them to contain 748 parts of nutritious matter out of 1,000; and it is probable these proportions are justly computed. Wheat, which he states by the same inquiries to contain 955 parts out of 1,000 capable of animalisation, must, according to this analysis, afford much more nutriment, and which agrees with observation: but, for obvious reasons, it is seldom used for such purposes, except on particular occasions, and then generally as bread, in which form it is a convenient condensed medium for recruiting strength, and peculiarly adapted for horses which are what is called "tired off their appetite," and whose digestions are weakened by over-exertion. Barley is more frequently given to horses than wheat; and, according to the experiments of Sir H. Davy, this grain contains 920 parts out of 1,000 of nutriment: it is therefore, if the laws of organised life exactly tally with chemical rules, more nutritious, though less used, than oats. Made into bread it is sometimes given, but still more frequently it is used in the form of malt; in which form its nutritious qualities are heightened by the sugar evolved. Barley appears to have been the principal ingredient in the horse food of the ancients; and on the Continent barley and straw are still very commonly used instead of oats and hay.

1099. *The pulses, as beans, peas, and vetches* (the seeds), are sometimes employed, whole or ground, as horse *farina*. The first, which are most in use, are however seldom so given without some other matter, as chaff or bran, on account of their heating and astringent qualities; they are still more frequently given with oats. In the West Indies, maize or Guinea corn is likewise given to horses. In Holland, and many parts of Germany and Norway, buckwheat is made into a black bread for the food of their horses.

1100. *On the use of grain as a horse provender among us*, custom and experience have set their stamp; but there are some facts that the young sportsman should bear in mind. All grain when new is less nutritious than when sometime kept, and, like new grass, is apt to scour; and thus it is that oats and beans of some months old are always preferred to such as are new. When, however, circumstances force new grain on us, its noxious properties may be avoided by heat: thus, new grain should be kiln-dried before it is made use of. Oats also should be plump in the grain, heavy in the hand, and thin in the hull. For racers and hunters, they should be well winnowed, to free them from all dust, and screened likewise, to clear them from the thin grains, loose hulls, and tailings.

1101. *The varieties of horse provender*, as we have termed them, are such articles as, by their saccharine matter, prove highly nutritious, although their gluten is in small proportion. Carrots stand foremost on this list; and too much can hardly be said on their excellent qualities for horses not in 'fast" work, or for such as want renovation from debilitating causes. They appear particularly favourable in some cases of faulty condition; and, as far as the skin and hair are concerned, they are decidedly so, for both usually look well under their use. Without doubt, also, they are highly nutritious, as we know from the fat accumulated when they are used. In the *Museum Rusticum* is an account of two hunters that were fed with carrots and small loaves made of barley and oatmeal mixed, which horses were said to be the pride of the field. We must however confess, that, blooming as they might look, we should hardly be inclined to expect that much of the bloom would remain at the end of an uninterrupted burst of forty minutes with a pack of crack fox-hounds. Such feeding might answer the purpose of the canterer after a pack of the old-fashioned harriers. The fox hunter will not be content without old oats and split beans for his steeds; but even here a small feed of this kind on resting days is not amiss, as we have experienced.

1102. *Of mixed matters for manger feeding* we shall say but little, as such food is not in much request for sporting horses, except during a long frost, or when they are lying by from lameness, &c. at which times corn may be found to be too heating. One of the best manger mixtures is composed of one part of the best old hay, either meadow or clover, and two parts of clean wheaten straw; to three bushels of this mixture add one bushel of bruised oats. It is of essential importance that the oats be well bruised — not ground, but completely flattened by a proper machine made for the purpose. When whole oats are used, the grains are apt to slip between the chaff in mastication, and perhaps one half of it thus proves useless. It is our opinion that, on the score of economy, the bruising of corn is of much advantage; and where horses are very hasty feeders, or have little time to eat, from the nature of their work, it is essential even. This food is also very requisite for old horses, whose teeth have become faulty, and whose digestion likewise faulters; for in these instances, by bruising their oats, the work is partly executed for both the masticating and digestive organs. During a season of extreme scarcity in India, it was the custom of the famine-hunted natives to follow the English camp, and to draw their principal subsistence from the grains of corn which they extracted from the excrement of the horses. So little comminution do those grains suffer which do not pass under the teeth, that they readily vegetate after having passed through the alimentary canal. On the economy, utility, and composition of an excellent manger food for horses, see Mr. Henry Sully's account in the *Sporting Magazine*, No. cx. new series.

1103. *The physiology of digestion*, already detailed (p. 193.), in conjunction with what has now appeared on the food to be digested, might lead the hasty observer to the popular conclusion, that it is by a close adherence to what appear to be the dictates of nature in her administration of edible matters, that we should best fulfil her intentions for the preservation of all our domestic animals. But such a confined view of the matter, particularly as regards the horse, would lead into error, and often frustrate the sportsman's hopes. For art must be counteracted by art, and artificial habits of living are alone equal to produce unnatural exertions. It is one thing to argue on the requisites to keep horses in health simply, and another to describe the processes by which they are to be enabled to undergo services to which, in a state of nature, they are never likely to be called. Commensurate with their exertion, therefore, must be the food taken in, both in quantity and quality. If the work be simply laborious, all that is requisite will be that such food be sufficiently nutritious; and in these cases the bulk whereby nutriment is gained is not a matter of import. But if such exertions are to be combined with accelerated progression, as in our racers, hunters, &c. &c. it is evident that such feeding is best adapted to the end required, as it contains the most nutriment in the smallest space, which increases the durability of action, by bracing the animal fibre, as it heightens the spirit and courage, by increasing the nervous irritability. Now, such intentions are found to be best fulfilled by a plentiful allowance of old corn, in preference to any other mode of feeding at present known. Having, however, stated thus much in favour of full and hard feeding, where the work is such as to require it, we must observe, on the too frequent custom of not either lessening the quantity, lowering the quality of it, or otherwise of counteracting its effects by mild physic, &c. &c. when circumstances, as lameness, frosts, &c. prevent the usual exertions, at these times high feeding, persevered in under an idea of keeping up the condition, is very apt to frustrate its own end. Even the coat, which is supposed to be so much more easily kept shining and close by such means, will in the end stare; and surfeits, with a nipped-up carcass, or cracks, grease, or farcy, will eventually testify the error of not accommodating the supply to the waste of the body by its exertions.

SUBSECT. 1. *Times of Feeding and Quantity given.*

1104. *The quantity of hay* which is proper to be given to a horse during twenty-four hours, varies greatly by circumstances. Race-horses are seldom allowed more than six or seven pounds; hunters of high breed seldom have more than from eight to ten pounds; hackneys are some of them almost equally stinted, particularly in stables where hunting condition is thought requisite for all the "cattle." It is evident, however, that the quantity should be proportioned to the size of the horse and to the nature of his work, whether ordinary or extraordinary, and particularly so, whether it is fast or slow. If the work be quick, of course the horse should be stinted in his hay; if it be slow, no harm can arise from an indulgence in it. We profess to confine our directions to the treatment of saddle-horses particularly, consequently it must not be supposed that ten or twelve pounds is a maximum for the lofty cab-horse, or the still more stately pair that grace the family coach. These, however high-bred they may be, will require their bulk to be maintained with a quantity ranging between fifteen and eighteen pounds each in the twenty-four hours. Even coach-horses, however, must be limited in their hay, in proportion to the rate they are expected to travel at. Such as now run in the fast-coaches are many of them allowed only half a truss per week. Distension of stomach, or, more strictly, distension of the bowels (for the stomach in horses will hardly contain five pounds of masticated hay), is so injurious to accelerated motion, that such as have their fill of hay soon become either blind or broken winded. Coachmasters and postmasters, from stinting their horses in their hay and in their water, particularly before their work, have now not one case of broken wind where they had five formerly.

1105. *The quantity of hay given to hunters in the hunting season is usually very small.* In the crack hunting counties, as Leicestershire, &c. it is particularly so; for the rate of going over the ground there is such as to require the bowels to be as little distended as possible; consequently as little distending matter, of which nature hay must necessarily be considered, is given, particularly the day before hunting.

1106. *The definite quantity of oats also,* proper for any kind of horse, is as much subject to the control of circumstances as hay. From a peck to even a peck and a half is allowed daily to some racers when in training or under their engagements. Nor is this quantity an uncommon allowance for hunters of high breed, high growth, and with substance to carry a welter weight. Carriage-horses in full work, and particularly posters, are often allowed as much they will eat, which makes up for the deficiency in their hay. What is nominally called a feed of corn is a quarter of a peck, and hence the term "a quartern of corn." Of such "feeds" the common hack has usually three per day: many however have four, and some five even, particularly where the quantity is left to the discretion of the groom, who well knows the effect of a full feeding on the coat of his horse. We would again press on the sportsman's attention the actual necessity of his being particular as to the age and quality of his oats. Mr. Ward, the celebrated fox hunter, when he anticipated a severe burst, has been heard to say, "Now we shall see whose horses eat old oats and whose eat new." We would also remark, that every high fed horse is surrounded with dangers as by a ring, the limits of which he never enters, so long as the work and the food are commensurate; but the moment the exertions lessen the food should lessen, or the magic circle is intruded on, and Pandora's evils let loose, unless timely evacuants restore the equilibrium.

1107. *Beans are given in smaller quantities than oats,* but in all cases they should be old and split. They are to be considered as extra-nutritious, being at once exciting, heating, and binding; consequently, they are not proper except where the exertions of the horse are very great, and where as much condensed nutriment as possible is sought for, either to repair any great waste, to keep up any extraordinary energies, or to pamper a fickle appetite. They are sometimes mixed with manger food, as bran and chaff, in lieu of oats; but such mixture is principally used among agricultural teams. To saddle-horses beans, when given, are usually mixed with their corn, in the proportion of one-fourth of beans to any given quantity of oats.

1108. *The feeding of race-horses is not now so artificial a process as formerly.* The various breads that were used, and the cordial mixtures then given, are now dispensed with; sound oats, with good old meadow hay, being the principal edibles allowed. Beans, split or ground, are occasionally given, but they are too heating and constipating to be used alone as a general food. White peas, wheat, and barley, are likewise sometimes employed in the same manner as beans, as extra-nutritious food; nor is there any doubt that either or all of these may be given with manifest advantage to tender, delicate, and over-worked horses, as well as to light feeders generally. When the engagements of the racer will allow of such relaxation, moderate soiling may be resorted to in the form of lucern, clover, tares, &c.; and in winter, carrots, mangel wurzel (beet-root), &c. &c. all which tend to keep the younger horses in health, and prevent hurtful accumulations: but it is evident that, to the race-horse, they must be given with much discretion, or the condition will suffer.

Subsect. 2. *The Watering of Horses.*

1109. *Watering of horses is a part of their dietetics that is not of trifling import.* Water is not now denied even to race-horses, as formerly; on the contrary, they are allowed it in sufficient quantities, as often as they seem to require it, particularly the delicate feeders among them. Such should be the practice towards all horses; those that are very craving for it being allowed a little at a time, but it should be in that case given more frequently. Horses, like ourselves, own peculiar idiosyncrasies; and their digestive functions, like our own, are apt to be disturbed by the use of particular fluids and solids. When out of condition, their thirst is often excessive, and frequently fanciful. Horses at all times prefer soft water to hard, and it proves the most wholesome to them; indeed, so partial are they to it, that a muddy chalky pond is an irresistible lure to every horse; many can hardly be forced past one, as seen in *fig.* 170. Humane rider, do indulge him! It is not a good custom to warm the water generally for horses; but it is still worse to give them water just drawn from a pump or well, and particularly in summer, when such water is, comparatively, colder than in winter, and when the horse is probably much hotter, from exercise, clothing, &c. As some horses drink quicker than others, it is more proper to give them their water in the stable than at a pond, where they often drink immoderately. The quantity given should be regulated by the heat of the weather, the perspiration brought on by exercise, the nature of the food, &c. &c. Under severe exercise and in very hot weather, more is required than at other times. In most stables it is the custom to give half a pailful in the morning and a whole one at night; and as a general rule it may pass, but it is best to subject it to modifications. Many craving horses suffer from this long deprivation, and for such we would rather divide the usual quantities into three waterings. There is also a species of childish, or rather coltish, impatience of restraint about many horses, and they will fret for what they fancy themselves debarred from. Thus, when a thirsty horse is shut up in a box with a pailful of water always before him, he will drink less than when he is only occasionally offered it. Such as are at all "touched in the wind," as equine asthma is termed, are invariably thirsty; and here it is cruelty in the extreme to wholly debar them from it, in consideration of the loss they suffer from exhalation. Such should, therefore, have a few gulps offered to them whenever the groom visits the stable; but they never should be allowed to drink their fill at any one time, as the distension occasioned may very seriously impede their respiration. It is likewise barbarous to deny horses water when travelling, for it is equally injurious to the appetite and to the spirits, and it also produces a great prostration of strength and great impatience of temper. If the work be very quick, give a few swallows, but on no account wholly deny it, and, under any circumstances, the hay or the oats may be well moistened. A hunter should have but a very few swallows on the morning of his work, and not his full allowance the previous night even, for the want of it promotes absorption, and thus lightens the body; nor is it customary in well regulated stables to give water either just before or just after meals. Given immediately before, it sometimes cloys the appetite, and is thought to weaken the digestive powers; and also, when taken directly after, it is supposed to distend the food to an unhealthy degree, particularly when much food has been eaten. It must however be remembered, that the stomach of the horse, comparatively, is very small, and hence he passes the liquid he drinks into the cells of the colon almost immediately, where it makes that rattling or gurgling noise we so frequently hear when a horse is ridden soon after drinking heartily. Hard water, it is also necessary to observe, will often occasion gripes; and where none other can be got, it should be first exposed to the action of the sun and air. Chalk balls, if they can be procured, and if not, clay balls as a substitute, may be put into the receiving vessel or tank, which will tend to soften hard water; and, in some racing stables, no water but that which has been previously boiled is given. Horses should never be galloped immediately after drinking; it has sometimes occasioned broken wind, and at others a fatal rupture of the diaphragm or midriff has been the consequence.

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HORSE AND CHALKY POND.

CHAP. III.

CONDITIONING OF SADDLE HORSES GENERALLY.

1110. *The putting of a horse into condition,* is as much an artificial process as that of giving him a dose of physic, cutting off his tail, or putting iron shoes on his feet, &c. &c.; we are therefore warranted in using the term "conditioning" the horse, as much as that of "physicking" him. To the well informed sportsman we need not offer any apology, if we enter at some length on this most important subject, on which the hopes of the turfite, the joys of the fox hunter, and the performances of the roadster, mainly rest.

1111. "*Condition*" *is a term that is conventionally well understood by experienced horsemen;* but others are apt to have very confused, and even erroneous, notions of it. In common parlance, it might be supposed to imply nothing more than the symptoms and appearances which usually betoken ordinary health. Thus, when a horse is to all appearance in perfect health, he ought, under this view of it, to be considered as in *perfect condition;* and, on the contrary, whenever he is in any respect out of health, it is then only he should be considered as *out of condition.* Among sportsmen, on the contrary, the term "condition" is used with a much more technical and a more artificial signification. For a farmer may ride a horse to market, high in spirit and full of flesh, but from exposure and bad grooming, he may be very rough in his coat, very short winded, and soon become tired. This horse, with the stabularian, would not be said to be "in condition;" and though he may be in a state to do all that some riders might require of him, yet, if he should pass in this state into the hands of a horsedealer, he must make some material alterations in him before he dare show him as a horse "in condition," or before he can expect to sell him as such. Having, however, effected some difference in his appearance by means of warmth, grooming, and change of diet, it is ten to one but he is now said by the dealer to be in *high* condition. But he would yet be found by the horse amateur to want much further alteration, before he would be *in condition for the field.* And even in this improved state, were he to pass into the hands of a turf man, he would have yet to undergo a new training, and additional fining, before he could be considered as "in condition to run." This conventional term, therefore, comprehends a variety of states and degrees, principally dependent on the real necessities for alteration in the state of the animal, according to the several uses to which he is now applied; and, subordinately, it comprehends others also, founded on an artificial taste relative to his exterior appearance. Condition in the cart-horse would imply, with a healthy state of his skin and hair, a general fulness and lustiness of body; by which his exertions in carrying loads or drawing weights would be assisted. In the racer, on the contrary, in the hunter also, and, in a minor degree, in every variety of horse used for quick motion, fine condition would imply a state in some respects the reverse of this.

1112. *Condition must nevertheless embrace some common properties in all;* it bespeaks in every case such a state of the body, both internally and externally, as fits its various organs to act uninterruptedly for the benefit of the whole; and thus much of condition, it is evident, is equally necessary for the heaviest cart-horse as for the fleetest racer; and indeed it would be well if the subject of condition occupied the attention of horse masters of every kind more than it does. We have witnessed grease, mange, farcy, and ruinous ailments, make fatal havoc among the road waggon, the coal waggon, and agricultural teams, entirely from a neglect of the condition of these horses. How necessary a strict attention to this state of body is to every description of horse used in vehicles of conveyance, from the humble buggy to the fast-coach, we apprehend needs no proof. How few of the latter, as well as of those used in posting on the great roads, would survive three months, were it not for their condition; we repeat, their true *artificial condition.* The following humourous but just picture of Nimrod's offers an apt illustration of our appeal: — "When I see a pair of under-sized, apparently worn-out, horses put to what, in the language of the road, is called 'a bounder,' that is, a gentleman's carriage with three in and two out, with 'every thing belonging to the family,' as the post-boys say, 'but the kitchen grate;' when I see these animals draw this load a fifteen-mile stage in the morning without difficulty, return home, and take another such a load in the evening; when I see them, with skins as fine as race-horses, stand out exposed to all weathers, washed all over when they are hot, and all this with impunity, I ask myself what enables these animals to do this? Is it their natural physical strength? Is it the goodness of their nature? My reasoning faculty tells me it is neither. They would both fail. No! it is solely to be attributed to the six, eight, ten, twelve, perhaps fourteen years' *hard meat* which they have got in them — to that consolidation of flesh, that invigoration of muscle, that stimulus to their nature, which this high keep has imparted to them — which gives them, as it were, a sort of preternatural power, inasmuch as but for that stimulus they would never be able to perform more than half of what we see them do." According to this view of conditioning (and, as it regards what we have called *artificial condition*, it is a very just one) it is evident, however, that condition, in its most extensive sense, owns several states and degrees, all more or less artificial, as the physical powers of the horse acted on are required to be more or less unnaturally exerted.

1113. *That full or high condition,* which is looked for by most sportsmen of the present day, consists of a state of body equal to accelerated and long continued motion, which is brought about by a condensation of the greatest possible quantity of animal fibre, particularly of the pure muscular fibre, into the smallest possible bulk, and also by promoting the absorption of the useless and hurtful incumbrance of adipose (fatty) and other interstitial matter; by which abstraction, the lungs are enabled to act more freely; and by which also we gain lightness of body with additional strength and elasticity. This state, if accompanied with a sleek coat and healthy feel of the skin, may be considered as one of *high* or *full condition;* and further, that it is in the attempts to produce such state, that all the art and mystery of training consists. But while we own training or conditioning of the horse to the extent we now carry it, as an artificial process, we would fain strip it of its mystery, and disrobe it of the empirical character it has long assumed, by proving it to be a process based on philosophical principles, and so particularly connected with anatomy and physiology, that although the manipulations belonging to it are usually left to grooms and stable men, yet the rationale of the process can only be derived from other sources. The peculiar idiosyncrasies of some horses, and the accidental ailments of others, which so frequently interrupt the process of conditioning, require something more than the groom's powers of comprehension, or the stableman's treatment. Mr. Darvill could not have written so well on the subject of training, nor have illustrated the means to the end with so much force as he has done, had he not added to his stable education the study of anatomy, physiology, and the practice of medicine, at the Veterinary College. Nor could the letters of Mr. Apperley (Nimrod) on *Condition* have carried with them half their force, or have been so inductive as they are, were they not based on philosophy, and were not the cause and the effect closely coupled, and forced to march hand in hand in his directions. The results, it is true, of many artificial processes are developed by chance, and many such long continue to be improved by observation, without their philosophical connections being at all considered. In the end, however, others with more enlarged views spring up, who, tracing effects to their causes, are enabled to reduce the matter into a rational form; and the processes so long confined to a few hands, and arts also, hitherto so exclusive, stand naked and confessed, and practicable by all. It is to the study of zoology on the broad principles of structure and functions, that we are indebted for the means of breaking through these mists, and of reducing the hitherto *supposed mystery of training and conditioning the racer*, to processes definitely and clearly laid down, readily prosecuted, and as readily comprehended.

1114. *Having said thus much*, it must however be confessed, that there are circumstances in the conditioning of horses for some purposes, which no principles of ratiocination would have at once developed without long and extensive experience, and without a constant collation of facts. *A priori*, we should have hardly come to the conclusion that the racehorse could either bear such a long and severe course of artificial treatment as is found actually necessary to bring him in winning condition *to the post*, or that the hunter would require his natural flesh to be taken off him by active purgings, violent sweatings, and severe exercises, to be replaced by fleshy matter of a very different texture, ere he could be brought with credit *to the field*. It is true, that a certain quickness of apprehension and delicacy of touch is found in many persons accustomed to horses, and in some to a degree that enables them at once to detect the working condition of one, by merely grasping the crest, or by passing the hand flat and forcibly over his ribs. But how few of these would be cognisant of the morbid causes of this want of working condition, and still fewer would be aware of the remedial means to be employed in the removal of it. The horsemen of days long past, as we shall presently see, went as far as the first step; but it remained for those of the present day, by a knowledge of cause and effect, to perceive that all these seeming phenomena now admit of a ready explanation, and consequently, by detecting the cause, they are enabled to resort to such means as are likely to remove the effects.

1115. *The handling of the horse by rib and neck*, to determine the state of his condition, is a very ancient practice. Xenophon and other old authors notice it; and we find one of these writers on the horse asserting, "that there are outward and inward manifestations of fat, some being outwardly fat and yet inwardly lean," which, although it seems to imply a contradiction, is yet in some cases true. Another denies the possibility of this, and a third thus discourses on the subject: — "Some horses feed outwardly, and carry a thick rib when they are inwardly thin, as may be; whereas others appear lean to the eye, when they are all grease within. In this case, the feeder of the horse has two helps to advantage his knowledge, the outward and the inward one. The first is the outward handling and feeling the horse's body all over his ribs, but particularly upon his short and hindermost ribs; and if his flesh generally handle soft and loose, and the fingers sink therein as into down, he is foul without all manner of question: but if he be hard and firm, and only soft upon the hindermost rib, he has grease and foul matter within him, which must be voided, whatever comes of it. And for the inward help, that is only sharp exercise and strong scouring; the first to dissolve, and the latter to bring it away." The same author, with much truth, gives the retraction of the testes to the body as a powerful criterion of condition. Ere we proceed to give directions for training and conditioning the healthy horse, we will cursorily notice the symptoms and causes of morbid condition.

Sect. I. *The Symptoms and Causes of Morbid Condition.*

1116. *The symptoms which characterise the horse being in bad condition* are various, but in most cases some, if not all, of the following signs are present:—The spirits are below par; a little exercise tires him; and although he may not have lost much flesh, yet what remains is not firm, as the examination, conducted in the way we have just noticed, will testify. His eyes are mostly dull, and, when not moist, they present a little inspissated crust at the anterior angle. The insides of the eyelids, and of the nostrils also, are often tinged with a yellow hue; and, when this is the case, the dung-balls are usually hard, small, voided with difficulty, and often streaked with a filmy matter; the urine also is scanty and high coloured.

The heat of the body is irregular; at one time the legs, ears, and muzzle, will be cold, and at another, a feverish heat and dryness may pervade the whole exterior frame. The appetite for water is often increased, while that for food is frequently irregular and fickle, and what the horse does take affords but little nutriment; on the contrary, he slowly loses flesh, his skin adheres to his body, and if he be not actually "hidebound," his skin wants that elasticity and unctuous feel so familiar to us in the healthy horse. The hair ceases to shine, and becomes more or less "pen-feathered;" sometimes it falls off in patches, or lumps break out in different parts of the body. The legs of a horse in this state are very apt to swell; and we believe no individual symptom of bad condition, with the exception of a staring coat, is so common as swelled legs; and it is not unfrequent for cracks either to accompany or to follow the tumefaction; nor is a short dry cough unusual where horses are much out of condition. It is seldom that all these appearances are present in each individual case; the majority of them, however, are represented in *fig.* 171. We shall now proceed to particularise the different causes of morbid condition, and the particular symptoms which usually characterise each variety of this state.

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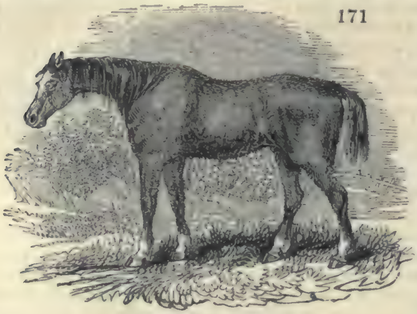

HORSE OUT OF CONDITION.

1117. *The accidental causes of morbid condition are various*, and the remedial treatment must be so likewise. Injudicious feeding, either as to quality or quantity, is very liable to produce it; thus, any sudden alteration in the articles of a horse's diet will frequently, according to the term of horse amateurs, *throw him out of condition*. Of these errors we may note removing him from the grass-field, or the straw-yard, to a full allowance of dry hay and corn, with a scanty supply of water, to "draw up his belly;" both of which errors are probably done at once without the smallest preparation. In these cases the alimentary canal, being hardly yet in a state of digesting capacity, suffers from the increased powers necessary to draw nutriment from substances which, although they are in themselves more generally nutritious, yet prove, in these instances, less digestible than those before in use. Thence follow costiveness, heat, and thirst, as well as an unhealthy state of the coat, which stares and feels harsh and dry, being a necessary consequence of the ordinary sympathy between the stomach and the skin.

1118. *A sudden remove from a generous to a poor diet is unfavourable to condition also*; for in such case the chyle, or nutritious pabulum, from whence all the vital organs are recruited, and all the vital energies derive their vigour, cannot be separated in sufficient quantities. The blood itself thereby becomes deteriorated; universal absorption takes place of the softer parts, which produces a decrease in bulk; while a laxity of fibre in the remaining portions is productive of languor and debility. The quality of the food is also of considerable consequence to the condition. Mow-burnt hay, by exciting a partial diabetes, known as the *lick*, or *pissing evil*, is very apt to throw a horse out of condition; musty hay also, and oats highly kiln-dried, or such as after heating on shipboard have become musty, have an unfavourable effect on it likewise; green meat in too large quantities given to horses long used to hard meat, will often throw them out of condition, by scouring, profuse staling, &c. &c.; vetches in pod disagree with some horses much, and all green meat in a state of fermentation is very unfavourable to condition.

1119. *The liquid aliments* should likewise be attended to in a consideration of the bad condition of horses. Too much and too little water are both injurious, and very hard water, as already noted, seldom agrees well; mineral waters are unfavourable to it in most cases, although there is reason to believe that, in a few morbid affections, they are salutary; and sea-water, particularly in some cases, proves so: but a continued use of the brackish water found near sea-bathing places is always hurtful to such horses as have not been accustomed to it; to which, as well as to the bad care taken of them in most of the livery stables of marine bathing localities, we attribute the universal complaint of the defective condition in which they so frequently return from thence. Badly ventilated stables are also occasional causes of it, and cold ones equally so. Cool stables are favourable to the health of the common hack that hangs about any where; but the racer and hunter, as artificial animals, must be warmly stabled to keep up their "blooming condition." An inordinate quantity of work, particularly if continued unremittingly for several days and without previous preparation, will often produce a very obstinate morbid condition. In these cases the digestive organs themselves, having suffered equal injury with the rest of the frame, become unable to reinstate themselves; much less, therefore, can they be expected to be equal to that of renovating the injuries of the whole mass quickly. Hence, therefore, these particular instances of morbid condition prove obstinate, and require much time and attention to re-

To face p 317.

THE CAREFUL GROOM.

move; such cases are very likely to occur in young unseasoned horses. In all of them, however, we have found a loose box, with a malt mash at night, with carrots and speared corn in winter, or tares in summer, backed by the use of either of the mineral tonics to be presently noticed, a good restorative plan. Swedish turnips, where carrots are scarce, are a good substitute; sometimes mild purges, and a run at grass are required, particularly the salt-marsh run.

1120. *Drastic purgatives, or violent remedies*, as the mineral acids, when injudiciously continued, reduce the condition very quickly, and sometimes irrecoverably; horses are also frequently thrown out of condition by sudden alternations of heat with cold. Swimming a river or brook during a sharp run, or a sudden check, when not guarded against by moving about, and by getting to the lee of the wind, will often prove ruinous to the condition of a horse for the whole of that season. Our best hacks often suffer in this way by the neglect of servants, who hang them by the bridle to gates, pales, or sign-posts, when they are very hot, while they themselves are gossiping or drinking in inns and alehouses. If, by such inadvertencies, inflammations of the lungs, eyes, or feet, are escaped from, it nevertheless frequently happens that the effects of the check are very long felt. The capillaries of the skin become constringed, and the unctuous matter secreted by the sebaceous glands, appears to be either vitiated or lost, by which the elasticity and pliancy of the hide is lessened; the hair also, instead of lying smooth and appearing glossy, from want of the unctuous secretion, becomes elevated, and feels hard and dry to the touch. The dandriff, or scurf, likewise adheres closely to the skin, instead of separating and falling in daily scales. We have already alluded to that consent of parts which is so apparent between the skin and the digestive organs, and how it follows, in almost every instance, that when either of them becomes affected, the other also takes on a morbid state. Indeed, we are convinced that the sympathy between the skin and alimentary canal is so intimate, that these parts change the order of attack as circumstances occur: thus, when the skin is primarily affected, the stomach becomes secondarily so, and *vice versâ*. In the application of cold to the surface, it appears clear that the primary cause originates in the morbid attack on the skin; and when we consider the structure and functions of this investure of the body, we need be at no loss to account for *hide-binding*, as being one of the distinctive marks of want of condition. "Being *hide bound*," therefore, is not a disease *per se*, as supposed, but rather a symptom common to any state which deranges the secretory, and perhaps, also, the excretory functions of the skin; and it thus accompanies, by a common consent of parts, most chronic affections of long standing. A long continued gleet from the nasal membranes in glanders will occasion it; a local attack of farcy on the hinder extremities often brings it on; and the integumental affections of cracks, grease, and mange, claim it as a companion also. In fact, any means which are capable of exciting an absorption of the cellular and membranous medium between the skin and that muscular expansion, by which its motions are regulated, *binds the hide* so firmly to this fleshy pannicle, as to confine its extension and destroy its usual elasticity.

1121. *The treatment of hide-binding* must of necessity, therefore, blend itself with the general treatment of "morbid condition." The primary affection of the skin is not always however confined to an inelasticity of the hide, nor to the staring of the hair upon it; for sometimes, from a kind of reaction and an inflammatory process in the deranged and obstructed vessels, small tumours form generally instead, and then such tumours extend over the greater part of the skin, which affection has received the name of "surfeit."

1122. *Surfeit also*, though commonly considered as a distinct disease, is usually a symptom only, being seldom altogether dependent on a primary affection of the skin. We have in some cases traced its origin to a deranged state of the digestive portion of the stomach, brought on by eating noxious vegetables; and in other instances we have found that it has been produced by the musty quality of the hay used. The treatment of surfeit, as well as of hide-binding, must therefore depend on the view we are enabled to take of its cause. If the affection be consequent on a derangement of the digestive organs, and the horse be robust, give one or two mild doses of physic, followed by a course of alteratives, either No. I. or II. (See *Alteratives*, at the end of this article.) If the patient be emaciated, after a very mild dose of physic, give either of the tonic formulæ, II. or III. We have experienced benefit sometimes from dressing the hide all over with a mixture of sulphur and lard, or with a sulphuretted bath, particularly when there was no reason to apprehend much internal derangement.

1123. *Moulting*, although a natural process, yet frequently produces much systematic affection, and thereby affects the condition often. This is usually more sensibly felt at the autumnal than at the vernal shedding; for the production of a *long* coat must naturally call forth more powers of the constitution than to produce a *short* one. During the process of moulting, the vessels of the skin are in a state of increased action, for the purpose of forming a new growth of hair; and, as such, all the effects of slight fever are present. Horses are then weak, sweat easily, are chilly, suffer from thirst, and are irritable and low in spirit. Moulting therefore, more or less, puts every horse out of condition, but least of all those who are under the hands of a good groom, and have not been turned out. In the early part of the hunting season, the grassed horse is seldom recovered from his moult, and the inconvenience of this is severely felt for a long time. When the coat is changing, it is prudent not to dress horses much, particularly with the currycomb, that the old coat may not be too quickly forced off before the other is ready to replace it. Warmth, both in the clothing and in the temperature of the stable, is salutary and necessary at this time. A sufficient quantity of tepid water should also be given, to allay the feverish thirst present; the exercise should be moderate, and the food liberal, but not too heating, or the coat may become "set." Succulent food, as carrots, turnips, particularly Swedes, or cooked potatoes, &c. may therefore either, or all, of them with propriety alternate with the corn given at these times, which it is likewise often prudent to bruise, mash, or spear, according to circumstances. This plan of treatment, it will be evident, must be modified in the hunter wanted in November. Less water must be given, no soilings, little mashings, but mild physic alternated with alteratives must be tried, and sufficient exercise must be administered to keep down the effects of the corn, and to prevent the horse becoming *foggy*, *i. e.* pursive. The cases in which defective condition is primarily seated in the alimentary canal have been already hinted at; it may however be further remarked on them, that here also some symptoms are mistaken for actual diseases, among which stands the old affection of the mouth, called lampas.

1124. *Lampas*, which is apt to be considered as a distinct disease, is nothing more than a symptom of that derangement of the stomach and its recipient passages which sometimes follows, and sometimes precedes, the binding of the hide and the unthrifty and staring coat, &c. &c. Its treatment must, therefore, fall under the remedial plan detailed for the removal of morbid condition. Burning and cutting the bars are entirely useless. Good reader, when your own mouth is hot, sore, and swollen over its roof, would you expect much benefit from searing it with a red hot iron? Would you not more naturally remove the probable causes, as too much wine, too much meat, &c. &c. Thus also, in most cases of lampas in horses, it is the stomach, or we should rather say, it is the digestive viscera only, that are at fault, unless, as is sometimes the case in very young horses, where it arises from an irregular dentition or teething. Whenever, therefore, lampas is found in a horse or mare under five years old, examine the teeth, and particularly observe the grinders, and act accordingly.

1125. *Ragged teeth.* Not unfrequently in old horses also the teeth wear unevenly, and now and then one becomes actually carious or decayed, in which cases it sometimes irritates the mouth generally. It also follows, that, as faulty teeth grind the food less minutely, so they rob the animal of a portion of his nutriment, and thus injure his condition. We again repeat, that lampas, nine times out of ten, is nothing more than a stomach affection, to which the singularity of the internal conformation of this digestive organ of the horse renders him more liable than most other animals. We allude to the cuticular or skin-like lining which extends from his mouth over two-thirds of his stomach. Any affection of the secreting portion, or remaining third of this important organ, therefore, immediately spreads over this cuticular lining of the stomach; and, extending upwards, it inflames and corrugates the sensitive rugous bars which line the mouth. Under this view it is evident, that, unless we set the whole digestive system to rights, all our burnings, lancings, &c. &c. of the bars of the mouth will be worse than useless.

1126. *Crib-biting.* This likewise sometimes proceeds from a deranged state of stomach, and is therefore a frequent, though not a constant, companion of the other symptoms of defective condition. It is not our own opinion that crib-biting is an indrawing of air into the stomach, as is generally supposed; but, on the contrary, we consider it to consist in the simple eructation or forcing out of a small quantity of gas, let loose from morbid combinations within the stomach and bowels, particularly the latter, which, as it proves a source of irritation, the horse, to aid its expulsion, applies his teeth to a fixed point, by which he gains the help of some of the muscles of the fauces to open and straighten the œsophagus, while at the same time, by means of the abdominal muscles, he presses on the stomach and forces out a little of the irritating air. To guard against the action, it is common to place a tight strap around the throat, which prevents the horse from attempting the dilatation of the pharynx. Exactly the same process takes place in ourselves, except that we have no occasion, from the peculiar shape of our pharyngeal opening, to gain a fixed point for the teeth; yet in the human subject, eructation is facilitated by resting the head against a fixed point. We regard it as both a cause and a consequence of morbid condition, being sometimes a precursor, and sometimes it follows that state. We are likewise disposed to consider its remote cause as originating in dyspepsia; occasionally, however, it may be engendered by an idle habit of biting every thing around, but the former is in most cases, at least, its remote cause. We never remember an instance where it was contracted at grass; but turning out to indifferent keep in a straw-yard will frequently bring it on. It may be traced to a course of chaff feeding, bad hay, musty oats, and long confinement during frosts. Crib-biters rarely carry much flesh; but it can never be supposed that the mere action of crib-biting, were it either a vice or an amusement, could deprive them of flesh. The faulty digestion both keeps them thin, and makes them prone to assume this dyspeptic symptom, which, once acquired, is lasting from habit even, although we could remove the original cause. Under this view, we recommend that the habit be attended to only as far as regards the consequences to the horse which are likely to ensue from the wear of his teeth, to say nothing of the wear of mangers, &c. To suppose that the stopping of the action will do more is fallacious, for, however we may succeed in this, the horse remains as he was in flesh. To prevent the actual biting of the manger to a certain degree, nothing more is necessary than to place a strap of two and a half inches broad around the throat, tightened only to the degree necessary to prevent the action, which it does by rendering it painful to distend and straighten the pharynx by confining the auxiliary muscles. A very ingenious collar-machine is now made, the invention of Mr. Yare, which prevents crib-biting, and does him great credit: but though far superior to the former methods employed, the horse is only prevented not cured, we believe, by it. Mr. Stewart also presents us with a figure of an ingenious muzzle for the prevention of crib-biting (*fig.* 172.); it consists of a kind of rack, with two iron spars joined at each extremity, and curved to receive the muzzle. The spars are about three-fourths of an inch broad; the space between them is wide enough to receive the lips, and let them seize the corn and hay, but so narrow that it will not admit the teeth. The horse can eat well enough; he can reach his food with the lips, but he can seize nothing with his fore teeth. This muzzle is better than a strap, which disposes the horse to swelling of the head, and has been taxed with producing "roaring."

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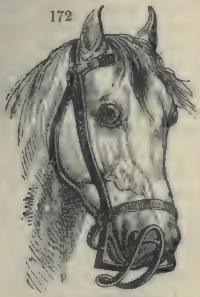

CRIBBING MUZZLE.

1127. *Wind-sucking also attends morbid condition in some cases.* In this habit there appears to be both a taking in and an expulsion of a small quantity of air, but without the necessity of the presence of a fixed point for the teeth, the lips being here the principal means of drawing in atmospheric air, probably as a relief to some morbid sympathy of the digestive organs. A setting muzzle prevents it usually, and will do it more effectively if a few spikes be inserted into the mouth-piece; to which, however, there are many objections.

1128. *The actual morbid change which takes place in the alimentary canal,* in the state called *out of condition,* is very difficult to define with precision; and whether it be a structural disease in the more solid parts, or whether it arise from a vitiation of the stomachic, or rather the general secretions of the alimentary tract, is not altogether clear. If we argued from some appearances which occur, as the swollen state of that cuticular portion of the alimentary canal which lines the mouth, called lampas (already observed on), and the thickened state of the cuticle of the tongue also, we should be led to infer a diseased alteration in this lining of the canal throughout. We have likewise observed, in two instances which occurred of horses having been accidentally killed, both of which were very much out of condition, that the cuticular portion of the stomach was relaxed, and streaked also with marks of inflammatory affection: on the contrary, in crib-biting, which is evidently an eructation of a small quantity of gas, we should, by reasoning analogically, be prompted to believe that the secretions themselves might become vitiated; and that this affection, as well as some other of the symptoms of morbid condition, were purely dyspeptic, and dependent on an altered state of the gastric secretion.

1129. *Worms within the stomach and intestines,* but principally intestinal worms, will injure the *condition,* and produce irregular appetite and costiveness, with a mucous covering to the dung-balls and a staring coat. As a remedy equally efficacious and convenient, we would recommend the daily administration of the muriate of soda (common salt), in quantities of four ounces at a time in a mash, or with bran, twice a day. Many affections of the digestive viscera, and some of the skin also, are relieved by common salt. It is perhaps one of the best alteratives with which we are acquainted: nor is it by any means uncommon for horses near the coast to break loose, and betake themselves to the sea to drink inordinately of the salt water; and as they only do this when not altogether in good health, and are always benefited by so doing, there can be no doubt but that it is an instinctive impulse which guides them to it. A favourite old horse, which belonged to the author's grandfather, made periodical marine visits during all the latter part of his life, and returned apparently bursting with the quantity he had taken. We fancy to ourselves that we now see him, as represented in *fig.* 173. Many other quadrupeds take salt greedily at particular times, and without doubt they do it either as a preventive or a cure of disease. The *salt-licks* of many parts of the world are proofs of the virtue of this prophylactic of nature.

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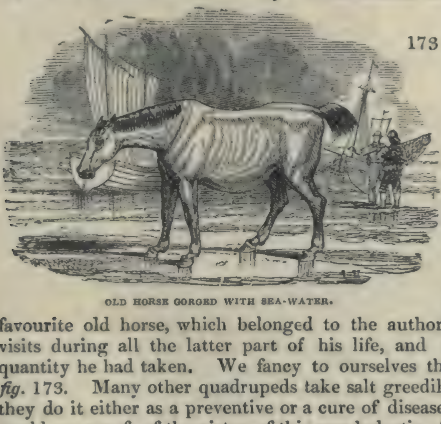

OLD HORSE GORGED WITH SEA-WATER.

Sect. II. *The Remedial Treatment of Morbid Condition.*

1130. *The treatment of morbid condition* requires much judgment and reflection; as, from what has been said, it will be evident that many different circumstances may produce it: thus, in every instance, the first step should be to ascertain the exciting cause if possible; and to that we should direct our principal attention. If it be suspected to arise from impure air, extremes of heat or cold, bad water, musty oats, mow-burnt hay, &c. &c. such morbid agencies must be immediately removed. But when no outward cause is apparent, we must suppose some constitutional derangement to be present; and in such case internal remedies to act on the alimentary canal, afford the most probable and rational means of relief. Morbid condition being known to be consequent on an application of sudden cold to the skin, which affecting the capillaries by a rapid translation of their blood into the interior of the body, and producing congestion of some vital organs, is equally counteracted by stimulating the stomach and bowels, and sometimes the kidneys also, into a sympathy with the exterior surface. Nauseating medicines in man most readily affect the skin, and relax it into a moist perspirable state; but as there are very few drugs capable of nauseating a horse, and still fewer that will do it mildly, so our dependence on antimonials to benefit the skin by a nauseating effect on the stomach is lost; yet experience teaches us still to rely on their action by other sympathetic agencies than direct nausea. For we feel more and more assured, that in all cases of morbid condition dependent on derangement of the stomach and bowels, betokened by lassitude, thirst, irregular appetite, lampas, &c. antimonials are highly beneficial. They are equally so in most cases of constringed skin or hide-binding, and still more so when the skin is principally affected, as in surfeits, attended with either small bumps or swellings, or partial detachments of hair. Antimony received into the blood may relax the vessels themselves, and those of the extreme surface in particular, without disturbance to the stomach; overlaid as this organ is with so large a portion of cuticle, certain it is that, in the above cases, the effect of antimonials on the skin and hair are often striking. In some instances, particularly such as are marked with debility and emaciation, the tonic effect of mineral agents, united with astringent bitters and spices is very evident; and in other debile cases, the more diffusible stimuli of ale, malt, barley, oatmeal gruel, &c. &c. tend to relax the skin, and to promote a return of health.

1131. *Young horses with much flesh on them*, and just taken up from grass, are often put on hard meat without due preparation, the owners expecting thereby to hurry their selling condition. It is however very common for them, instead of benefiting, *to fly to pieces*, as it is termed, i. e. *to break out*, by the skin generally, or by the heels particularly; not unfrequently the eyes become affected. If the inner surface of the eyelids in any such case, or that of the nasal membranes, show any tinge of red, it is necessary to bleed, and to repeat the same with moderation once or twice more, until such inflammatory appearance is removed; lessen the corn and substitute mashes: give two doses of mercurial physic; and on the non-purging days giving also the alterative, No. I. When any obstinate cases of surfeit, hide-bound, or of cracks, grease, &c. occur in young gross horses from neglect of cleansing them when first taken up, it often happens that nothing will avail but again turning them out. Soiling in a loose place may however be first tried in summer, or a course of chopped carrots in winter, after which cleanse them properly ere their hard feeding commences again. For such cases try either of the following recipes: —

No. I.

Crude antimony - - -
Supertartrate of potash (cream of tartar) - - - -
Nitrate of potash (nitre) -
} Of each two or three drachms.

No. II.

Supertartrate of potash, two or three drachms.
Nitrate of potash, ditto.
Powdered sulphur, half an ounce.

1132. *Either of these alteratives* will gently stimulate both the stomach and kidneys, and produce, by consent of parts, a favourable effect on the skin and hair. Violent diuretics are never advisable; but when they are given in a mild form, particularly in company with antimonials, they are useful, and most so when the legs swell, and the heels are inclined to crack. Where there are appearances of emaciation present, give diuretics, which should not however be persisted in without the benefit derived be very apparent. Horses brought low by hard work, bad feeding, either as to quantity or quality, but particularly the latter, or by cold and damp stabling, &c. notwithstanding their weakness, will be benefited if their remedial treatment commences by a very mild dose of physic, the horse being previously fully mashed, to make a small quantity of aloes sufficient; for we have generally found that the renovating regimen, and the stomach tonics to be afterwards administered, have had double effect for this previous preparation of the alimentary canal. But where the debility is very great, and likewise where there has been already sufficient laxity of bowels, or perhaps even superpurgation from drastric physic, begin at once with either No. II. or III. of the following tonics, or of any of those detailed under the proper head in the *Materia Medica of Veterinary Outlines*.

No I.

Socotrine aloes, in powder, one drachm.
Winter's bark, ditto, two drachms.
Ærugo (verdigris), one drachm.
Treacle or honey, to form a ball.

No. II.

Oxide of arsenic (arsenic), eight grains.
Pimento (alspice), in powder, one drachm.
Extract of gentian, half an ounce.
Make into a ball with liquorice powder.

No. III.

Sulphate of copper (blue vitriol), a drachm and a half.
Sulphate of iron (green vitriol), ditto.
Powdered ginger, a drachm.
Horse turpentine, to form a ball.

No. IV.

Sulphate of zinc (white vitriol), two drachms.
Extract of gentian, half an ounce.
Make into a ball.

1133. *Either of the latter formulæ* may be given in most cases of morbid condition, accompanied with debility, loss of flesh, depraved appetite, &c. &c.; but these remedies, in cases of surfeit, hide-bound, or general affection, are to be delayed until after the exhibition of the skin and bowel relaxants: then give one every morning, allowing the horse but a handful or two of hay for an hour after it is given. If a liquid form of medicine only can be got down, either of the recipes may be mixed with a liquid, and horned down as a drink; but it is well to observe that active mineral agents seem to produce their effect best in mass. In all cases of morbid condition, attended with much emaciation and debility, if corn be found too heating, a full allowance of carrots is advisable; and, in default of carrots, mangel wurzel, Swedish turnips, or malt mashes, may be allowed. In our own practice we have found speared corn to be an excellent restorative in such cases. It engages the most fickle appetite, affords nutriment without heating the system or constringing the bowels, and is favourable to the skin and coat. Such are the common causes of morbid condition, and the medical treatment of them is comprised in what has been already said. Want of room prevents our offering more on this subject; we would however refer the inquirer to our *Veterinary Outlines*, 4th ed. for additional hints on this matter.

Subsect. 1. *Of Warmth as an Agent in promoting Condition.*

1134. *Warmth* is particularly depended on for promoting condition in racers, hunters, and superior hacks, and also in carriage-horses: indeed, its influence extends to every good stable, where it is regarded as a remedial tonic for the sick, and a conservator of health to the invalid. Nimrod says, that "A horse which no exertions of his groom can get to look well, and to be well, in a cold stable in the winter, shall, on his being removed into a warm one, be in good condition in a month." Again, "Were my object to keep a horse merely in a state of convalescence, I should keep him in a cool stable; but if I want to prepare him to follow a pack of foxhounds, with a man upon his back determined to ride by the side of them, I must keep him in a warm one." The seeming contradictions implied in keeping up an artificial temperature for the support of natural life, vanish when we consider that the state of existence so supported is to the full as artificial as the various agents employed; and the exertions required from this artificial state of the body are equally unnatural as all the rest. Mr. Percival, in his *Elementary Lectures on the Veterinary Art*, observes, "Heat is indispensably necessary to the production of a fine coat. Cleanliness, friction, and attention to the general health, contribute to this condition of the hair; but the principal, the essential agent is heat, either generated by warm clothing, or conveyed by natural or artificial temperature. To explain the operation of heat upon the skin and coat it must, in the first instance, determine an unusual flow of blood to it, and probably increase the circulation of the cutaneous system; the natural consequences of which are an augmentation of its secretions; among others, of the perspirable fluid, and of the unctuous or oleaginous matter that pervades the hair: this gives a renewed suppleness to the skin, and a kindly feel and gloss to the coat. Without the agency of heat, then, it is absolute nonsense to talk of making horses look well in their coats. A strong sympathy however," adds Mr. Percival, "exists between the skin and the alimentary canal; and we might, *ad infinitum*, bestow our labour on the former without effect, unless we were at the same time to direct our attention to the latter."

1135. *Of grooming and clothing* we have already treated, and we have likewise endeavoured to impress on the mind of the well intentioned groom, that even the most liberal feeding, the best clothing, and the warmest stabling, ought not to supersede plentiful dressing of the hide; and we would again hint, that it is not only to remove dirt and dust that the currycomb, the brush, the wisp, and the cloth, are called into play, but also to encourage a healthy action of the skin, and in some measure to take the place of exercise when circumstances prevent the horse from going abroad. Clothing is principally employed to promote an increase of heat; and as the temperature of our climate varies so much, and as we deny our conditioned horses the benefit of nature's clothing, which is that of a long coat during the rigours of winter, so it is but following the artifices of man, who clothes himself warmly in the north and goes almost naked in the south to cover our horses likewise, and that in proportion to the other parts of the artificial treatment he receives. It is argued, with much apparent rationality, that it is contradictory to clothe our horses in the stable, and then strip them when they come out. But, be it remembered, that we ourselves also very often come out of a much warmer room than a stable without adding to our covering, even in very cold weather, and that without experiencing any inconvenience. Nevertheless, we do not profess to advocate these extremes of stable heat, or of body clothing, but only in those cases where an artificial state of condition is found to be essentially necessary to be kept up, as in racers, hunters, &c.

SUBSECT. 2. *The general Effects of Purgatives on Horses, and the Nature of the Purges employed.*

1136. *Without an intimate acquaintance with the habits and constitutions of horses,* we might be apt to conclude that, when they presented all the ordinary symptoms of health, it was not only unnecessary, but likely to be injurious, to physic them. When however we do well know the constitutional peculiarities of these valuable animals, we become assured, that however healthy they may appear in their ordinary state, yet, that a course of physic, so far from being hurtful, is the most effective method, not only of insuring a continuance of their present health, but also of greatly increasing their spirits, their activity, and capability of endurance under fatigue. On this particular subject any comparison between the constitution of the horse and that of man is apt to mislead; and hence it was common, ere veterinary medicine had made great progress, and before its professors, by sufficient experience and more extended views, had become wiser. for them to decry the general system of physicking horses in apparent health as a barbarism, and an inroad on nature and common sense. " If a horse be already well, according to the common acceptation of the term," they would ask, " Can purgatives make him better?" or, " when well, can they insure him against disease?" We answer, under our view of the matter, they can do both.

1137. *Medicines are administered to horses both in a solid and a liquid form.* The most convenient mode of *delivering, i. e.* giving a ball, is as follows:—Back the horse in his stall, as seen in *fig.* 174.; this done (if necessary), the operator, raising himself on a stool (the bottom of the bucket is a very usual convenience, but it sometimes falls in, capsizes the groom, and alarms the horse), should gently draw the tongue a little out of the mouth, so as to prevent its rising to resist the passage of the hand: but the tongue should not be laid hold of alone, or the struggles of the horse may injure it; on the contrary, it should only be held firmly by the fingers of the left hand against the jaw. The ball, being previously oiled, must now be taken between the tips of the fingers of the right hand, lengthwise, when the hand, being squeezed into as small a space as possible, should be passed up the mouth close to the roof, by which injury from the teeth will be avoided: having placed the ball on the root of the tongue, the hand may be withdrawn, and the tongue may be liberated as soon as the ball is seen to pass down the throat. The head should, during the whole, be but moderately elevated; when it is held too high, there is some danger of choking the horse.

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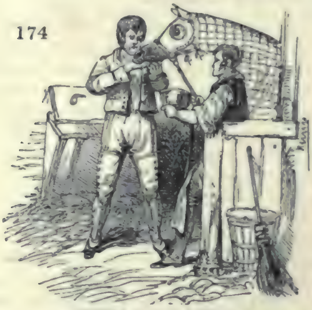

GIVING A BALL TO A HORSE.

1138. *On the theory and effects of purgation,* we may remark, that it is brought about by the same agents in the horse as in man; but that it commonly requires twenty-four hours to produce full catharsis in this animal, whereas two or three, or even less than one hour in some instances, will effect it in ourselves. The alimentary track is of great size and extreme length in the horse, and consequently it presents a vast surface to be acted on. In man, on the contrary, as one of the *Omnivora*, it is comparatively small and short; added to which, the erect position of our kind is the most favourable to the expulsion of the abdominal contents by gravitation alone. Purges act by stimulating the intestines to an increase of their peristaltic or expulsive motion. (See *Anatomy and Physiology of the Bowels*, p. 193.) They also increase the quantity of fluid matter expelled; first, by preventing the customary absorption of fluids from the bowels, and next, by forcing the bowels themselves to furnish fluids by secretion: but which latter effect does not take place unless the articles given are of a drastic nature, either in quantity or quality. As it is evident that when the bowels are so stimulated as to pour out from their own surfaces a vast supply of fluid, they must themselves be highly irritated, and the constitution thereby greatly discomposed, so we learn why it is that, when a horse purges profusely, there is danger, and why it is that he invariably becomes weak and refuses all nutriment, although the loss of so much interstitial fluid may make him greedy after water. From a common consent of parts there is a general gathering of the secretions from the neighbouring viscera during active purgation; and thus it is that the liver, pancreas, spleen, and kidneys, are freed by purging from obstructions. Purges are therefore given to remove internal obstructions, and they are given to remove external enlargements likewise, as swellings of the legs: but no purge can act *immediately* on the legs; for, in the first instance, it is evident it can only remove what is within the stomach and bowels; *mediately*, however, physic can, and does, remove swelling of the legs; for the emptying of the bowels stimulates the absorbents to suck up the fluids from other parts, to make up the deficiency, it being a common law of the constitution to keep the balance equal between the waste and the supply. In this way purging is an efficient agent, not only in taking down swellings of the legs, but also of removing all other extraneous matters, as the unnecessary load of flesh, or rather of fat and interstitial fluids; indeed, of all those matters which, in stable language, are called " fog."

1139. *On the uses of purging medicines in active diseased states,* it is not to our present purpose to enlarge; but we shall content ourselves with a very short summary. Purgatives are useful in all violent inflammatory affections except those of the stomach and bowels; for, by depleting the system, they lower the pulse; that is, they lessen the force of the circulation and the evolution of heat in the inflamed part. In extensive inflammations of internal organs, as of the lungs, liver, &c. and also in the febrile affections, known under the term of distemper, where active purgatives are apt to be injurious, a laxative, *i. e.* a very mild relaxant of the bowels, may yet be very usefully employed. In all derangements of the alimentary canal, as lampas, worms, &c. mild purgatives are remedially used; in complaints of the liver, shown by the yellowness of the eyelids, linings of the nose and lips, and thence called by farriers the "yellows," and in most skin affections also, mercurial purges should be employed after the following manner: — Mix from a drachm to a drachm and a half of calomel with a spoonful of flour, and put them into a bran mash, which being given over night, is to be followed in the morning by the usual aloetic ball. A remarkable remedial effect which purgatives have on the horse is witnessed in very many instances of the following kind: —When horses being in a state of emaciation, are removed from hard work and still harder fare at once to rest and a more generous diet, it is but seldom that their condition improves at first; on the contrary, they retrograde; the belly will become still more tucked up, the eyes more yellow, the mouth hot, and the hair is either set quite fast, or comes off by the slightest handling: but when such a change is accompanied, or rather preceded, by a judicious use of mild and appropriate physic, a few weeks bring forth, as it were, a new animal. The same state also often occurs to horses brought from a straw-yard, and placed at once in a warm stable and indulged in full keep. In such cases, unless physic be administered, it is ten to one but the horse will, in stable language, "fly" somewhere, as at the eyes or heels, or he will become broken-winded, or hide-bound, or foundered. As a preventive of disease, physic, therefore, has likewise much claim on our suffrage.

1140. *Physic*, we therefore repeat, is of the most material consequence in promoting condition, and it proves equally necessary, whether the present state of the animal be above par or below it, as we have already observed. We however, in the latter case, give it in mild doses; and we support the constitution by liberal feeding between the several doses, which then prove a valuable stimulant and tonic to the stomach and bowels, promoting their digestive powers, and increasing their capability of separating more organic *moleculæ* from the *ingesta.* Purges also stimulate the sluggish biliary and pancreatic secretions, which are so necessary to a healthy digestion and formation of chyle, from which alone the strength and bulk can be augmented. Luxury and refinement have introduced an artificial state of condition, beyond that simply implying a healthy functional state. Such condition is not only necessary to bring the animal frame up to our present ideas of beauty, but likewise to enable him to undergo exercises which, in a state of nature, were not expected of him, as hunting, racing, &c. &c. To promote this state, purges are indispensably necessary; and it is from this view that the subject of physicking derives its popularity with horsemen generally, as enabling them to draw more active services from their horses than they could otherwise obtain without risking their safety. In promoting condition, purgatives not only act favourably on the digestive organs, but their beneficial influence extends also to the other solid and fluid parts of the body. By their use the watery parts of the blood are removed, and thus the absorbents are stimulated to take up all the interstitial fluid interposed between the moving masses, as well as that distributed within the cellular membrane, by which means both the strength is augmented, and the weight of useless matter diminished. The unnecessary adeps, or fat, of the body is likewise removed by the same process, and the muscular fibres are allowed thereby to be more rectilinearly placed, and to approximate in their action, by which a great increase in power is gained: it is thus, also, that physic draws up the belly and hardens the flesh. The lungs likewise are enabled to act more advantageously by the agency of physic, their capacity being greatly increased by the absorption of incumbering matter, either solid or fluid. In this way the wind, as well as the strength, is increased by perfect condition. Although thus favourable to the administration of purges to horses, and as perfectly convinced of the actual necessity of using them, as also that, when *judiciously* administered in time and strength, they are as safe as they are useful, we must nevertheless assert, that the specialties of structure which we have hinted at, render any errors committed, both in the quantity and quality of the purge employed, and likewise in the method of conducting the process of purgation, from its commencement to its termination, matters of paramount importance.

1141. *The quantity of aloes administered* had always better be too little than too much; therefore, when a horse with whose constitution we are unacquainted is to be physicked, the first dose should always be a very mild one. So variable are horses in their aptitudes to be purged, that Mr. Coleman instances one of his own that never required more than three drachms of Cape aloes; while, on the contrary, Mr. Percival mentions one which belonged to a veterinary surgeon of Norwich, that, at three years old even, required fourteen drachms to produce a moderate catharsis. Such instances are proofs of the necessity of caution in administering purgatives, particularly the first dose, where we are unacquainted with the constitution of the horse whose bowels we are going to act on. Size, age, and general strength and hardihood, should all be taken into the account; and we might as well expect one pattern of shoe to fit the whole stud, as one strength of purging dose to suit every set of bowels. The number of doses is also a point on which error is often committed. Grooms are apt to suppose that every ordinary case requires three doses: "the first, according to the opinion of many of these sapients, only stirs up the humours; the second sets them afloat; and the third carries them off." These same humours are the very *bogie* of the stable, and haunt almost every one of this class from hence to John O'Groats; nor will any endeavours wipe the mistaken and injurious notion from their minds. The body owns various fluids, as the salivary, biliary, urinary, &c. &c. any one of which may become diseased; but that humours, as ignorant grooms imagine, like peccant detachments from all or any of these, float about to the injury of the constitution, is imaginative only in most cases. To colts of two or three years old, to very weak and emaciated horses, or to such as are naturally of a tender nature, either as regards their constitution generally, or their digestive organs particularly,—to such three strong doses of physic in quick succession is often very injurious: we have known them even fatal; and more often they have left debility that required months even to overcome. To all two or three-year-old colts, two mild doses given at suitable distances from each other, as ten days or a fortnight, are sufficient, particularly when proper alteratives are added to the treatment. When a horse that is a very tender feeder, and liable to scour on any little extra exertion, is thought to require physic, he should be mashed three or four days previously, or until his dung softens considerably, when three, four, or at most five, drachms of aloes will be as much as is prudent to give. Indeed, in all cases we may moderate the strength of the intended dose, and yet obtain a sufficient purgation by the number and frequency of bran mashings. But, unfortunately, the prejudice in some minds in favour of strong purges is such, that they cannot be satisfied unless a horse has from twenty to thirty evacuations; whereas we would contend, that all the evils arising from physic are to be attributed to its over strength. We are also of opinion that very mild physic may be given with benefit on most occasions, and much oftener than is thought of, but it must be very mild; in which case it may be given in the middle of working engagements, or when at grass. No purge can be safely administered without previous mashing; a strong dose so given to a horse in full work and high keep, is very apt to hurry the hardened dung-balls backwards, until an impenetrable obstruction takes place, when inflammation and mortification evince the error of the practice.

1142. *The effects of a violent dose of physic,* when not immediately fatal, yet prove very injurious, and a horse recovers from them more slowly than a child even. It is hardly possible to conceive a more deplorable object than a horse under the action of an enormous purgative (*fig.* 175.); the liquid aliment escaping almost involuntarily from a red protruded anus, excoriated with the violence and frequency of the dejections; the belly drawn to the flank, the legs bending and tottering, while cold sweats bedew the frame from head to foot; appetite totally lost; and the strength so lessened as to leave the animal hardly the power of being moved from one stall to another. Even a mild dose may prove hurtful when the accompanying treatment is injudicious, as when a horse is violently galloped, as ignorantly supposed, "to set the humours afloat," or to increase the number of stools; and it is more particularly so when a sudden chill at these times is taken, the consequences of which are very dangerous. Cold water given during the operation of physic, will likewise often do much mischief; it has frequently proved fatal to the drinker. After what has been stated, it will be evident that it is difficult to prescribe any fixed quantity of aloes as a proper purge under every circumstance. It may however be considered to range between three drachms and ten, as a minimum and maximum. Six, seven, and eight drachms are very usual quantities given by experienced grooms, who advocate the amended system of giving physic of decreased strength, but in more frequent doses. Thus it is no uncommon thing for the young colts, even while at grass, to have a mild purge given to each of them; and still more common is it for the hunter, when partially turned out, to be treated with a gentle purge. Racers also, in their journeyings to meet their engagements, when of a craving nature, frequently have a mild dose given, and always with advantage. In the unthrifty, it often helps to fill them out by removing obstructions; and in the too thriving, it keeps down accumulation without injury to the strength.

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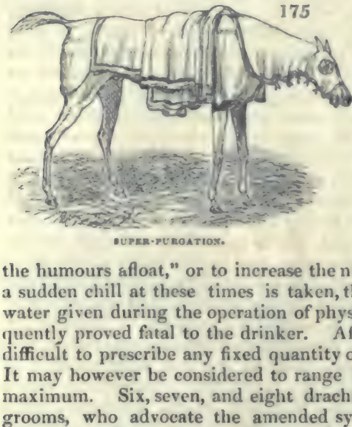


SUPER-PURGATION.

1143. *The quality and nature of the ingredients employed in physicking horses* are also objects of great importance; and they should therefore, in all instances, be procured from a druggist of reputation, or direct from the laboratory of a veterinary surgeon. To the coarsest aloes the groom's prescription often directs gamboge to be added, to increase its drastic qualities, and it is no wonder if the poor animal is almost or quite raked to death by it. Others add elaterium or colocynth for the same purpose, and thereby increase the dangers of the operation. Rhubarb and jalap are favourite additions to the purging ball of some sportsmen; but all these want a steadiness and certainty of action on the bowels of the horse, by proving at one time violent, and at another totally inefficient; consequently they should be abandoned altogether. Calomel, in addition to the purging ball, is not certain in its action in proportion to its supposed stimulating powers: it is therefore more prudent to give it previously in a mash, as already directed, and to slightly lessen the quantity of aloes in the ball which is to follow. Mr. Darvill complains that, in his early days, training grooms always added various other matters to their already over dose of aloes, by which means the ball became eventually so large that it could not be given at once.

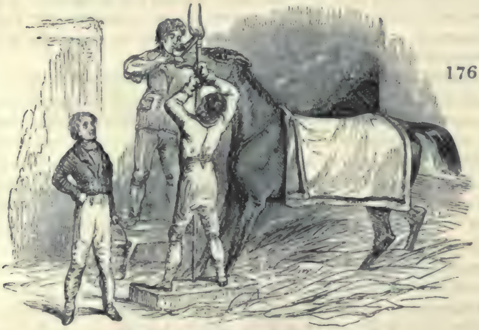
1144. *Aloes, without doubt, form the best physic for horses.* Epsom salts (sulphate of soda), are sometimes employed; castor, linseed, and olive oils, are all of them likewise used on certain occasions as laxatives, with great propriety and benefit, with the exception however of castor oil, which actually proves poisonous to many horses. But the true purge for promoting condition is aloes, of which there are three varieties, as the socotrine, the Barbadoes, and the Cape or cabaline. Formerly, from a supposition of their superiority and mildness, the socotrine were preferred; but in consequence, as well of their great uncertainty of action as of their superior cost, they have lately given place to the two other varieties. Cape aloes are generally the cheapest and somewhat the mildest, so that seven drachms of them are not more than equal in effect to six drachms of the Barbadoes: it is this variety which is used at the Veterinary College, and recommended by the professors there. It is however thought, from the inferior price of the Cape or cabaline variety, that they are apt to be compounded of the refuse of the socotrine and the Barbadian, which tends to throw them into disrepute among some horsemen and some veterinarians.

1145. *Barbadoes aloes*, therefore, are those now principally in use for physicking horses, as more quick and certain in their action than either of the other varieties, and when given with the cautions already pointed out, are equally safe. It is customary with many veterinary surgeons and druggists, who compound horse medicines, to boil these aloes previously to making them into balls; and the purgation certainly appears to be rendered milder thereby, without any decrease of their efficacy. To such as prefer manufacturing their own purging balls, we would recommend a reference for formulæ and ample directions to our *Veterinary Outlines*, 4th edition. Whether any other article adds to the efficacy or safety of the aloes admits of doubt: some add the supertartate of potash (cream of tartar); others think a carminative is useful, as spices: we are of opinion that a few drops of any spicy essential, as oil of carraway, cannot be injurious; but we are by no means certain that any thing of this sort is really necessary. As to the incongruous jumblings of the old recipes, there can be but one opinion of them, and that a condemnatory one.

1146. *Treatment connected with physicking.* With all horses, but particularly with such as are under "the hard meat" system, and also those newly removed from straw-yards, the contents of the intestines should be somewhat softened by two or three days previous mashing with bran, by which a milder, and consequently a safer, dose may be given; and, when so administered, will be found to operate equally well with one stronger. Many owners of hunters and trainers of race-horses, however, object to much mashing, erroneously supposing that it weakens the horse; but they may rest assured that the relaxant quality of the bran itself promotes the condition of the horse, and, on the contrary, prevents that exhausting effect, which a dose given without bran mashing is sure to produce.

1147. *On the morning of giving a purge* it is usual to fast the horse for an hour or two, and with very hearty horses it may be so administered; it is, however, a better plan (and where a very delicate feeder is concerned, it is even a necessary one) to give a little chilled water and a warm mash half an hour before the ball, or he will probably not again touch food for some hours. There is likewise reason to think that the working of the physic itself is rendered more easy and quick by suffering the horse to drink first. It often happens, also, that the ball when given will disgust a horse so much, that he will not drink for hours afterwards, which is not favourable to a ready solution of it. It was likewise formerly the custom, which is still continued in some racing and hunting stables, to shut up the horse during the first day; but this practice is on the decline, and it is right it should be so. On the contrary, give some gentle exercise two or three times during the day, which will quicken the operation: indeed, most horses so treated will begin to purge on the same evening. From the first giving of the ball close the doors and windows, to shut out any in-draughts of cold air, and keep the stable altogether rather warmer than usual, but not oppressingly hot. The clothing should likewise be somewhat increased, and a hood should be put on to exercise in, both now and during the whole working of the purge. These cautions are more particularly applicable to tender, delicate, and high-bred horses, and to all such as are at all times closely housed and warmly clad. Under these circumstances, more than usual care is required; and, therefore, when exercising such in their physic, should one break out into a sweat, he must on his return be rubbed dry and reclad with dry clothing. The food, on the day of taking the physic, should consist of hay and bran mashes; into which some corn may be sprinkled where a weakly or a delicate feeder is concerned. The water allowed should be warm, taking care that it be not offered scalding hot, as we have known it to be; it should also be perfectly clean, or it may be refused, which is unfavourable to the working of the dose. When physic is given, and the horse so treated does not commence purging in the evening, it will come on in all probability in the night, and will be in full action by the following morning, in which case the horse may remain quiet. Should it be otherwise, some walking exercise should be given, and should be repeated at intervals of an hour or two, until the stools are sufficiently copious and liquid. Some persons exercise their horses, whether the purge work briskly or mildly; but with a very tender subject this is wrong. Support a physicked horse during the day with warm water, hay, and mashes; the delicate feeder may have gruel to drink, with some corn in his mashes. Should griping appear during the purging process, throw up a sufficient quantity of warm water clysterwise, which will commonly relieve. Exercise will likewise often remove it, and warm clothes may be rubbed briskly over the belly with good effect, but exercise mildly. We must again observe on the dangerous effects which follow, when the purge given is much too strong. Such effects must be immediately combated, or active inflammation will come on. In these cases, if no veterinary surgeon be at hand, and the horse approaches the state we have already described, proceed in the following manner:—Throw up by clysters four or five quarts of thin starch or rice liquor, with half an ounce of laudanum intermixed, and repeat the same as often as every half hour in very urgent cases, and horn down the following drink — prepared chalk, two ounces; powdered gum arabic, half an ounce; powdered opium, ten grains; powdered catechu, three drachms: mix these in thin starch and give every hour. If no benefit be derived from the first dose, add to each subsequent drench fifteen grains of powdered opium, and half a drachm of powdered alum. Keep the body warm by clothing, and hand-rub the extremities well if they become cold.

1148. *Clystering and drenching.* We may however, before we proceed further, offer some plain directions for these operations, which, although sufficiently common in many stables, may not be so in all. Clysters are administered by means of a large bladder and pipe; but where many horses are kept, a pewter clyster syringe, with a large flexible pipe, is often used for the purpose, and is to be procured at many of the makers of surgeons' instruments, and without fail at Long's, veterinary surgeon's instrument maker, Holborn. Drenching however, very simple and easy in some hands, is not so in all. It requires dexterity, habit, and some height of person. Our *fig.* 176. represents the shift which is forced to be resorted to when the operators (for two are usually required) are neither of them tall, or familiar with the necessary manipulations. In such case, in preference to neglecting the horse, and in spite of the chance of being laughed at, sling a loop of rope across the prongs of a stable fork, and when this loop is made to enter the mouth and embrace the upper jaw behind the front teeth, the fork handle will afford even an assistant, neither tall, strong, or handy, an effective method of opening the mouth and of retaining it so, while the horn is emptying its contents from the hand of the drencher, who, if not sufficiently tall, may also take advantage of standing on a firm stool; but let him avoid using the stable pail bottom upwards, or, as has often happened, the bottom is forced in; the assistant gets an awkward fall; the horse becomes frightened; and, what is worse, he loses his medicine. The head of the horse is to be elevated in the same manner as in giving a ball, observing, however, that a due inclination of the throat downwards be preserved; for, in "delivering a ball," it is placed by the hand beyond the power of the horse to return it, which is not the case in giving a drink, where it is essential to its passing down the throat that the liquid is made to incline backwards by its own gravity. Having, as already observed, at the risk of being laughed at by the *élite* of the stud, noticed the stable fork, we will also venture to make mention of a wine bottle as not an uncommon vehicle for giving a drink, and some clever givers of horse drenches use it in preference to the horn; but as serious accidents have happened by refractory horses crushing the neck of the bottle between their teeth, we cannot recommend this method. To return to the process of drenching,—elevate the head of the horse, when the horn (previously filled with its intended liquid) being carried over the root of the tongue towards the fauces, pour out the contents, when, still keeping the head well up, but letting the tongue loose, the drink will be swallowed. Mr. Bracy Clark recommends us to reverse the drinking-horn, and then closing up the large end, and forming a moderate opening at the smaller end, to introduce that into the mouth. In tetanus, better known as locked-jaw, such a horn would be useful, and at all times it prevents the waste of the fluid; but it will be found on the whole less convenient in some hands, and for some horses likewise.



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A SAFE BUT NOT ELEGANT MODE OF DRENCHING.

1149. *The ordinary operation of a dose of physic* ends on the second day, and the dung will on the third resume its usual consistency, when the horse may return to his former habits, giving him, however, corn rather sparingly, and exercise of a moderate kind only for a few days. The second dose, which is often required to be somewhat stronger, may be given from eight to ten days after the setting of the first; and the third dose, if a full course be intended, may follow at the same distance of time as that of the second from the first.

SUBSECT. 3. *Of individual Peculiarities in the Physicking of the Racer, the Hunter, and the Hack.*

1150. *Race-horses are generally physicked both in the spring and autumn*, and the doses administered by most training grooms are somewhat of the strongest; which practice has, however, been condemned by many of their own body, and still more by veterinary surgeons. It must nevertheless be acknowledged, that the artificial state into which the race-horse is brought before he commences his physic, and the necessity of maintaining such a state entire, or even of increasing it by purgation, will account in some degree for their so doing; nevertheless the practice of giving very drastic purgatives to racers is certainly, and very properly also, on the wane. We know, however, a very cautious stud manager, who advocates the necessity of a full dose where a long course of hard meat has bound up the body: he also observes, in favour of an occasional strong dose, that circumstances will sometimes require that much alteration in the horse is to be effected within a given time. It is to be noted, according to him also, that nothing but necessity can warrant the risk of the consequences which frequently result from them, particularly to such as are tender in their bowels, to delicate feeders, and to the young and unhardened: we ought, for all these reasons, most imperatively to forbid their use in common.

1151. *In physicking of racers*, the spring course cannot always be proceeded on with the same ease and method as the autumn course, when they have finished their engagements and are going out of training. These peculiarities are, however, more particularly confined to horses employed in what is called country running. The spring physicking of these must either follow so quick on the winter course as to be too much for the horses, or, if it be persisted in with the accustomed forms, the owners must give up some of the meetings for the purpose. Such horses, therefore, are sometimes physicked on their journeys, and when they are of a very "lusty" and "craving" kind, their training sweats and their physicking go on nearly together. "The groom to a horse of this description," says Mr. Darvill, "gives him a dose of physic on the morning he sweats, in order to lighten him of his flesh, as well as to take the staleness out of him which the work has occasioned." He, however, does not recommend this in other cases, except indeed when a craving and over lusty horse is to be suddenly and greatly lightened. When racers are to be purged, some previous mashing is unquestionably requisite to render the process completely a safe one. Many trainers, however, are unfortunately not favourable to more than one mash or two being given the day before the ball, under a supposition that more than this "softens" the horse too much; but this we regard as a totally erroneous opinion. Is it, we ask, prudent in the slightest degree to risk the life of a horse, valued perhaps at two or three thousand guineas, on the bare supposition that he may be slightly softened by that which is purposely administered to clear him of interstitial and incumbering matter?

1152. *When several racers are to be physicked together* (a common occurrence in large studs), it is recommended that the purging-ball for each be given at a different period of the day, according to their several ages, degrees of strength, and known readiness of the bowels to be acted on. The intention of which practice, evidently being that they may all be in a purging state on the following morning when at their exercise." Thus the strong and adult horse may have a dose which contains from seven to eight drachms of aloes, immediately after his morning's exercise; those less robust in constitution may take from five to six drachms about twelve o'clock; and the very delicate, from four to five drachms about six in the evening. As regards the quantity, it must not however escape the recollection, that racers in training require their physic somewhat stronger than such as are off training. In physicking these horses, it is well to keep those of the hearty feeding kind short of hay on the night previous to the administration of the ball, by putting on the setting-muzzle. Having taken their ball, it is customary we believe, in most racing stables, for the horses to remain quiet the rest of the day: our opinion is, however, in favour of a little more than the morning's exercise, where the horse is not a delicate one.

1153. *The treatment proper to be pursued the day after giving a purge.* This we will, in compliment to Mr. Darvill, at once an experienced veterinarian, and one well versed in all stud practices, give in his own words: — "On opening the stables in the morning of the day the physic is to be worked off, as soon as the boys have set the beds fair, and brought them sufficiently back for the horses to purge on, each boy may then put two or three plats in his horse's tail, and tie it round at the bottom, to prevent it from becoming soiled whenever the horse purges. The whole of the horses should now have their warm water, each being allowed to drink as much as he likes; after which they should be brushed over and got ready for exercise: they are also to be comfortably clothed, according to the season of the year. In the autumn or spring, they should have good full-sized blanket-sort of rugs next their skin, with a sheet and quarter-piece above: if there is much wind without doors, a breast-sweater may be put on, to keep their clothes down in front; and their quarter-strings should also be put on, to keep them from blowing up behind; or, what perhaps is to be preferred, a piece of binding attached to the hinder part of the sheet or quarter-piece, so arranged as to form a sort of crupper to go under the horse's tail." We should recommend that both these appendages should be used at the same time, to prevent the access of cold to the loins. "The bridle and the hood should be put on each horse as he is standing in the stall, with his head to the rack. If a horse is brought round in the usual way, for the purpose of having those things put on, he may purge in the manger, if his physic has begun to work." (*Training of Race Horses*, vol. i. p.144.) Under similar views, he recommends "that each boy should be made to back his horse out of the stall, when he is going out to exercise." These exercisings should be repeated twice or thrice, according as the purge operates more or less freely. It is however to be observed, that where the purgation is very considerable, no exercise whatever is to be given; and where the liquid flow becomes excessive, particularly when a tender and delicate subject is concerned, we would recommend to horn down thick gruel, if the horse will not take it of himself. Should the scouring, in spite of these cautions, increase, treat as directed under super-purgation, to be noticed anon.

1154. *On the strength of the physic given to race-horses*, the same authority very wisely leans to the safe side; and it is a further recommendation to such a course, that he asserts he can purge any horse, however strong, and whatever his condition may be, by administering from five to seven drachms only of aloes, made into two balls, one of which is to be given as soon as the horse comes in from his morning's exercise, and the other at six o'clock in the evening. This assertion however, from our experience, must be received with some latitude, as exceptions must occasionally occur; but as a general hint it is a very valuable one.

1155. *An autumn course of physic is very commonly given to racers*, both to obviate the ill effects of the constant stimulating treatment that has necessarily attended the spring training, and the fulfilment of their engagements during the summer. It also is given, although it must be confessed on more questionable principles, as a means of renovating the staleness of the limbs, brought on by these exertions. In this "course of physic," which, like the other, is sometimes composed of two, but more often of three, doses, there is, with much propriety, more time allowed between each dose; more mashing also, and a more general relaxation from the severities of training discipline throughout, particularly towards such as most require it, by the admission of carrots, &c. &c. We may further remark, that such training grooms as are very favourable to physicking their horses, independent of the customary courses, give a mild dose on other occasions likewise; as when a hearty one between his engagements is found to be getting too lusty, and is losing some of his high form. Intermediate doses are also often given to country plate horses on their journeyings from one meeting to another, where time will allow, and circumstances indicate the necessity of it. In fact, so favourable are trainers to physic, that on almost all occasions of rest occurring, or when any accident is met with, or the legs begin to gorge, a dose of physic is given, as well to prevent present accumulations as to guard against the chance of others.

1156. *The peculiarities attending the physicking of the hunter*, compared with the racer, are but few. The same intentions are entertained, but we do not pursue the conditioning system quite to an equal extreme; for, were we to draw the hunter as fine as we draw the racer, we should probably affect the duration of his exertions, which is at least of equal importance with the celerity of them.

1157. *The hunter when taken from grass*, which should not be later than the middle of July, is put into physic almost immediately, that he may have time to clear away all his impurities, and consolidate his frame, by exercise and hard meat. When thus "taken up," as it is termed, he should be kept very cool, and if possible in a loose airy box. If it be necessary to take up several at the same time, and a stable be destined to receive them, at least let every other stall only be occupied, and a free admission of air be allowed. In a few days, under this treatment, they will be accustomed to the change, and ready for their first dose, under the action of which some warmth may be encouraged; and when several are to be physicked, an alternate empty stall in the hunter's stable may be with propriety occupied, having a due regard even yet to sufficient ventilation. Under the action of the purge, unless the weather be very warm, and particularly if one is taken out early in the morning to encourage the action of the purge, remember to hood and body-clothe him, or his future change of coat may receive an injurious check. The period when grassed hunters are taken up varies according to circumstances, or according to the views of the owner on summering the hunter; consequently the time for the physicking of a set of hunters may vary somewhat. Mr. Apperley, as a sporting authority, observes, in his *Letters on Condition*, that "when a horse is taken up, for instance on the 20th of July, allowing seven clear days between the *setting* of each dose, he will be through it all by about the 17th of August."

1158. *Hunters summered in the stable on the hard meat and exercising system*, require comparatively but little physic; those which have box summering, with green meat as well as corn, will of course require more; but their state will not call for so severe a course as those which have been wholly grassed and turned out. All such, however, as are kept absolutely at rest, to repair injuries occasioned by severe work, must of course have lost much of the elasticity of their fibres, and must have become washy and pursive from intestinal accumulations. These subjects, it is evident, must be first thoroughly cleansed by a complete course of physic, and be afterwards again hardened by corn feeding, strong exercise, and training sweats.

SUBSECT. 4. *Of Diuretics and Skin Relaxants as Conditioning Agents.*

1159. *Of these alteratives some sportsmen have a great opinion*, and some go so far as to assert that no hunter can be got into "blooming condition" without them; and there is no doubt but that diuretics, by increasing the flow of urine, must assist in depleting the horse: and, as we have elsewhere shown, that there is a particular sympathy between the kidneys and the skin, so far they may assist in producing a fine coat, as well as in drawing the horse finer altogether; but it must be remembered that some horses will not bear them. Active diaphoresis. or sweating, likewise cannot be produced in a horse through the medium of the stomach without danger. Antimonials are, nevertheless, found very useful relaxants in cases of diseased constriction of the pores that exhale the insensible perspiration. Antimonial alteratives, of either crude antimony, or the tartarised variety, are therefore very proper auxiliaries when the skin is either constringed, or foul with adhesive scurf, or patched with breakings out: nevertheless, it must be allowed that many hunters are brought to the field in very fair condition, without the use of either alteratives or diuretics. Turpentine in its various forms supplies the most active diuretic: nitre is also used for the same purpose, and in some cases with nearly equal effect; but strong diuretics we have seen do great mischief.

1160. *The peculiarities attending the physicking of the hackney* will depend on the degree of artificial condition we wish to keep him in; which must of course be greatly governed by the fancy of the owner, the nature of the work required of him, &c. &c. If, for instance, he is to make his appearance in Hyde Park every day, he must have the hunter's treatment, to exhibit the blooming condition of a park horse; but if he is only required to be "rough and ready" in such case, so he be well fed and well worked, a little physic only is necessary for him. We would however recommend that the general run of stabled hacks, of breed and pretensions, should have no settled course of physic at stated periods; but rather that, instead, they may have a mild dose of physic whenever they may seem to require it, or opportunity occurs for giving it; by which plan they may get two or three doses in the course of the year, without being laid by from work. We must however observe, that the more ordinary hacks will do all that is required of them without physic, provided they are well fed, regularly worked, and well housed, because their out-goings and in-comings are sufficiently balanced to keep them in health.

Subsect. 5. *Of Exercise as necessary to the Health and Condition of Horses generally.*

1161. *It is a convincing proof of the necessity of exercise to the health of animals*, that they are universally given to play with each other; and it is also surprising how ardently, and for what length of time, they will continue it. At the moment we write we are in view of a couple of horses, one not young, and the other yet unbroken. For many weeks we have observed them to pass, as we should suppose, at least a third of their time in active play with each other. An unfortunate donkey, and a foal of a few months old, in the same inclosure, have no sinecure, as they likewise are forced into the general scamper (*fig.* 177.). As all animal instincts were without doubt implanted in them for their individual benefit, we infer that active exercise is not only salutary, but essential to life and health. The benefits of exercise may be regarded in two points of view, one as a preventive of disease, the other as remedial when disease has taken place; and how important an agent it is in promoting condition, we need not press on the sportsman.

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PLAYFULNESS OF HORSES.

1162. *Exercise as a preventive of disease is universally acknowledged*, yet thousands of horses are ruined by the want of it. If it be true that, in a state of nature, they are instinctively led to play with each other, that by the exertions so made they may get rid of all superfluous accumulations, it naturally follows, that, when we stable them, and at the same time neglect to give them exercise, the health must suffer; and that in a two-fold degree, from the addition of stimulating food and an increased temperature. In all great cities this evil prevails, and in none probably more than in London, where even thousands are kept, particularly in the livery stables, without moving from their stalls for days and even weeks together. A sporting writer very pertinently conjectures, that of London horses as many are ruined for want of work as from too much of it. "It is true," he observes, "that such horses are ordered to be exercised; but what exercise can be given there, and by whom are they to be exercised? Men employed in livery stables have each seldom less than five or six, and we have known, in some cases, where each had more than this number of livery horses to look after: these men, if they rub the dung off, and occasionally give them a brush over, do all that can be expected of them. Exercising them is out of the question; they cannot do it themselves, and gentlemen very properly object to boys being permitted to ride their horses; and, consequently, unless they keep grooms, their nags must go short of exercise when not used by the owners. Into what state must horses come that are thus shut up, not for days, but for weeks, in stables, dark, crowded, and badly ventilated, even with such as are occasionally moved about, or, as it is called, exercised? The process probably occupies about fifteen, or at most twenty, minutes, where one horse follows another up and down a covered ride of perhaps fifty or sixty yards long, littered with reeking dung, and its exhalations further assisted by the immediate proximity of the dung-pit itself. Is it therefore to be wondered at that the influenza makes such havoc in the livery stables of London; on the contrary, is it not wonderful that any escape? This deprivation of exercise would, without doubt, be even more fatal, were it not that livery feeding is not often too abundant; but, as it is, coughs and colds are constantly prevalent among the horses thus kept: broken wind and ophthalmia are frequent visitants here also; and a sprinkling of cracks and grease is not uncommon, while contracted heels are to be seen by the dozen. In short, without due exercise, horses only moderately fed will still become pursive; and such invariably feel both the vernal and autumnal moulting more than either those altogether kept in the fields, or those whose condition is attended to by regularly proportioning their work to their feeding.

1163. *The salutary and conditioning effects of exercise*, we once more repeat, may be readily understood, when we call in the aids of anatomy and physiology to the consideration of the subject. The muscles of the body, by which all its motions are operated, are fibrous masses, and consequently, as following the general laws of mechanics, they act most forcibly when placed in juxta-position as regards each other. But when they become separated by fat, as we see in the "marbling" of beef, or by any other interstitial matter, their action is interrupted, and we therefore at once perceive how exercise begets strength; and why these accumulations, by interfering with the ordinary functions, weaken the animal, and lay the foundation of dropsy, of broken wind, of grease, &c. &c. By thus reasoning we can also understand why a horse, overburdened with fat, soon becomes winded, as well as why the "washy" horse is soon knocked up. Give both of these subjects sufficient exercise, but with a somewhat different accompanying treatment, and the one will improve in wind, and the other in strength and endurance. The absorbents of the body, as we have more fully described in our anatomical and physiological detail in Part II. are acted on by various stimuli: *exercise* is one of the strongest of these, and by its means fat horses are made lean, and the tender and delicate are made stronger. To reduce the body by long continued gentle exercise is more favourable to retaining the full vigour of the constitution, and the entire contractility of the muscles, than to do it by violent sweatings; not but that there are cases, and very common ones too, where sweatings also cannot be dispensed with, because it depletes or empties the body of its superfluous moisture more speedily in many cases, and more effectually, than even exercise. We introduce thus much to show that the consideration of training and of conditioning exercises, may be in many cases advantageously separated from the sweatings common to both varieties of horse. And this will become more apparent, when we reflect that we can profusely sweat a horse in the stable, and likewise that we can give him a vast quantity of exercise without stirring a hair. These considerations are very important in a practical point of view, as will be further seen as we proceed.

1164. *Exercise enlarges the muscles, by forcing more red blood into them:* thus the arms of the blacksmith, the legs of the pedestrian, the sword-arm of the fencer, greatly increase by use; which is well fabled in the account that Milo, by every day carrying his calf, became insensible to its increasing weight, and bore it also when it had grown into a bull. The *athletæ* of Greece and Rome braced their limbs by constant exertion, and the gymnastics of the forum were the produce of much previous exercise. The boxer also is forced to submit to close training, which is principally composed of strong exercise. Our hounds take their training gallops preparatory to hunting; our hawks their training flights; and our game-cocks are brought into wind and vigour by similar means. It is well observed by Nimrod, "that the ill effects of rest, and the good effects of work, on the powers and energies of a horse, are astonishing. In long continued rest his flesh becomes soft and flabby, and the muscles lose their elasticity, and even their substance. This is particularly exemplified in the human subject; for, let a man forego the use of one of his legs for twelve months, the muscles of that leg will fall away, though they will in some measure recover on his resuming the action of the limb. Horses lame in the fore-feet are generally seen to have the muscles of the chest fallen away, because such muscles are not called into their *proper* action, which a crippled horse has not the power of doing, although he may work every day." This gave rise to the vulgar, but now nearly exploded, opinion of chest-foundering in horses; whereas such a complaint does not exist, the evil lies in the feet, and the wasting of the muscles of the chest is the effect and not the cause. In strong work, when a horse is sound, every muscle, and indeed every fibre, of the body is braced, as it were, until the frame becomes a firm mass as a whole, but possessed of vast contractability in the separate portions.

1165. *Exercise greatly improves the wind*, by promoting an absorption of the surrounding fat from the viscera of the chest, and thus allowing the lungs to expand uninterruptedly: it also enlarges the air cells of the lungs themselves; and hence, by the imbibing of more air, the animal can remain longer between his inspirations. The pearl diver by practice, it is said, can remain under water between two and three minutes, when insensibility follows our own immersion after fifty seconds. And thus the colt, in training, is first able to take a gentle gallop, next a brushing one, and lastly he stretches over the ground at the top of his speed without distress.

1166. *The capability for continuance of exertion* is likewise increased, as well as the speed, by exercise; and the capability, which at first reaches only to the "Rowley Mile," at last extends to distancing all competitors along the "Beacon Course." The frequency of exercise, its duration, and the rate of speed to be observed while it lasts, are all dependent on circumstances. As some guide, we may state that horses for ordinary use, which have regular work two or three days in the week, particularly if it be such as produces sweating, will only require moderate walking on the intervening days: but that they should have both air and motion on what is called resting days, is assuredly necessary to their health and condition.

1167. *Walking exercise*, when long continued, reduces the system much; and it does it also without injuring the limbs; it is likewise very useful for taming such as are got "above themselves," and is particularly proper for fat pursive horses, which from hard work are become too stale in their limbs to admit of more straining than is unavoidable. On the subject of this pace for exercising our horses, with all our respect for the opinion of Nimrod, we cannot agree with him that it is more wearing to the limbs than a jog-trot, which he recommends in preference. In particular cases, however, we think the jog-trot may with propriety be practised, as in the loose-made, lengthy-limbed horse, who strides away ungainly, covering much ground at each step, but with great exertion to himself, which he evinces by every now and then changing the walk for a shuffle or short trot. Here it may be preferable for such a horse to keep him principally to the jog, otherwise he overworks himself; for in his method of walking he is, in fact, going at the top of his speed as regards the pace, whereas his jog is but the slowest type of the trot. It is in this instance only that the walk can prove more injurious than the gentle trot; add to which, the jog-trot is apt to make horses careless, and often brings them down. This author himself, in the true spirit of candour, in another place bears witness to the benefits of walking exercise as seen in the stables of

Lord Plymouth and Lord Sefton, and as testified by Mr. Weedon and Mr. Potter, the managers of those stables. So necessary is exercise to the health of the horse, that unless prevented by sickness, lameness, hard frost, or a previous severe day's work, no one should be allowed to miss some exercise every day; but the quantity, frequency, and quality of it, *i. e.* the pace employed, must depend on circumstances. Full-fed horses, not in much work, require at least two hours' exercise every day; and if they were taken out twice instead of once, being kept out an hour each time, it would be better for them. Very young horses will be most benefited by gentle exercise only, but it should be often repeated; and being continued a considerable time, it should finish with a moderate gallop, to accustom them to extend themselves. In the exercising of the generality of saddle-horses, the groom should be directed first to walk them for full half of the time of "keeping out," next to trot or canter for a mile or so, and lastly to walk them the remainder of the time, galloping being seldom required for hacks in work. All exercisings of horses, except the conditioning sweats of the racer and hunter, should finish with a walk of sufficient length to bring the horse in cool; unless this be done, horses will usually break out into a second sweat, and the groom who is ignorant enough to bring his horses home in this state is not one very likely to strap at them till they are dry. Hence follow colds, cracked heats, &c. It is much to be lamented, but such is the fact, that many valuable horses are spoiled by servants when exercising them: it is not unusual with these gentry to gallop their horses against each other; and a horse gets more severe exercise in one hour's work with the servant, than in a week's riding of the master. To prevent this, horses should either be exercised within sight of the house, or in some road where they may be now and then seen by some one interested in the management: or, what is far better, such a groom only should be employed as will do his duty faithfully without being looked after. This galloping maintained against each other, produces heat and thirst in both horses and grooms; the latter to slake their own resort to the public-house, where half an hour is spent in drinking, and that while the shivering animals stand at the door. The time now lost must be made up by another gallop, and the horses are returned to the stable in a profuse perspiration, by which they frequently contract serious indisposition; which is still more likely to occur, if (as frequently happens), instead of being dry-rubbed they are washed with cold water, and permitted to dry by means of their own warmth.

1168. *It is during the exercising of horses that their paces may be most efficiently attended to.* Under the tutorage of a well informed groom, the action of the young horse may be formed, and that of the older improved. Mr. John Lawrence well observes on this matter in his valuable little work, entitled, *The Horse in all his Varieties*, p. 121. — "The groom, when exercising, may accustom and train the nag to that pace which is preferred and most used by the master; indeed, a skilful groom may act the part of a riding master, and improve a horse greatly in his mouth, paces, and habits. Many horses, good in nature and really valuable, may have been rudely and imperfectly broken. Such are apt to mix and run their paces one into another, shuffling between walk and trot, and between trot and canter. It is the business of a good groom, during exercise, to correct these errors of progression, and to accustom the horse to *change* freely and easily from one pace to the other." We would direct him, also, to alter his horse's centre occasionally, by a change of the leading leg. In exercising horses of value, it is not safe to trust a groom with two led horses: it certainly should never be even attempted, unless the whole are of a quiet disposition; but when it is done, of course the rider will mount the least handy, and lead the others, one on each side of him. Much tact, temper, and steadiness, are required on the part of the exercising groom with three valuable horses; for, however frolicsome or perverse one or all may be, it will not do to fight with them. If one prove very troublesome in his play, keep a steady hand on him, and the sport will soon be over. Never take three or even two horses into a narrow pass-way; for, by so doing, many have been injured bodily, and others have been rendered too timid ever to pass a carriage afterwards without much difficulty. It is better, therefore, if there be not plenty of room, and a carriage be coming in the opposite direction, for the groom to turn back, taking care however to do it so early, that the horses shall not see his drift, or the next time they meet a carriage, they will take care to turn of themselves, as supposing the carriage to be an object for them to avoid. As nothing endangers both horse and rider more than the turning round at the approach of carriages, it should be the especial care of every prudent groom to avoid all occasions of exciting this dread, as one of the most difficult to overcome.

1169. *The cure of the vice of shying* is a most important part of the management of horses. We once purchased a horse with an excellent character for steadiness, except that he was always much alarmed at a passing carriage, whether it was coming towards, or overtaking him. A tilted waggon or a stage-coach on the approach, were such objects of dread as no power could get him to face. We knew it would be in vain to oppose human physical force to brute fears, and that it was only by introducing favourable recollections, derived from those very objects, greater in degree than the fears hitherto entertained of them, that we could conquer this dangerous propensity. We began by leading the horse, previously exercised and fasted, towards a cart filled with clover hay: the smell of the hay was irresistible, and soon dissipated all dread of the stationary cart; but when it was purposely moved gently onwards, he became rather discomposed: a little coaxing however induced him to follow it, and we had the pleasure, at this his first lesson, of seeing him proceed confidently with the cart round a farm-yard, and finally into the road. To vary the effect, after he had steadily walked by the side of the carriage a certain time, we restrained him, so that it got a head of him; when he again reached it, slight indications of fear appeared as he had to make his way up to the side of the cart, for we had a coverlet purposely drawn over the back, that he might not reach the hay from behind. We next passed the cart altogether, but it was a few paces only, and then turned him round to the other side of it;

but his whole mind was so intent on the clover, that, with the most trifling symptoms only of alarm, he fell to again on the hay, which finished lesson the first. Our next attempt was made with a sieve full of corn, presented to him on an empty stomach, which he could only reach from the tail-board of a tilted waggon — an awful object! After a few snortings and sniffings, here also hunger overcame his fears, and he munched the oats with great relish; but when the waggon was put into motion, his dread for a little time got the better of his appetite, and the flapping of the covering of the tilt appeared to him most portentous: his fears even in this case, however, soon gave place to confidence, by the tact displayed by a groom to whom he was much attached. This man mounted the waggon, and, resting on the tail-board, offered the oats to the horse, at the same time calling and encouraging him. This worked wonders; nor shall we readily forget the knucker of acknowledgment with which the confiding brute followed the groom's call as the waggon moved on, occasionally dipping his nose into the sieve. After a few more lessons of a similar kind, one or two of which were varied by giving him hay from the window of a stage-coach, he lost all fear of carriages, and his former owner would willingly have taken him back at a very considerable increase of price. We introduce this merely as an instance of the truth of an opinion entertained by most observant sportsmen, but often acted against by grooms, that the punishment of blows will very seldom cure vicious habits originating in fear. All startings and fears of every description are only increased by them, for the horse in these cases associates the dread of two evils instead of one, that of the object itself, and that of the punishment which is to follow; the consequence of which is, that his resistance is doubled. How common is it with thoughtless persons, when a horse shies at an object, to force him up to it by blows; by which means we are confident that no horse was ever cured of shying, but, on the contrary, he has always been rendered doubly timid. It is however not amiss, when a horse shies principally at any one fixed object, as a tree, milestone, &c. to coax him towards it by every mark of encouragement. If he will not readily approach it, use no force, but dismount, caress, and incline his head from the cause of his alarm, gradually drawing him nearer and nearer to the object itself, which having approached, he will invariably closely examine himself by smelling it. If this be practised with gentleness, it is more than probable that such horse will shortly be cured of shying at that particular object or its like.

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SHY HORSE.

1170. *Gentle treatment of horses in all cases is our stronghold on them.* We owe their obedience more to their confidence in us than to their fear of us. Nine-tenths of the punishments inflicted on horses, therefore, are worse than useless, not only on the score of humanity, but also on that of expediency. Brutal treatment of knocks and kicks beget resistance, and the weakest then goes to the wall; and who that must be, when dealing with horses, we need not apprise the reader.

1171. *Of the punishments which are admissible for decidedly vicious horses*, fasting and forced watchfulness are the most effective, and we have no hesitation in affirming that these, if judiciously managed, will break the most rebellious spirit. But as it is difficult to make a horse understand for what he is so fasted, or so kept in a state of watchfulness, the application of either will require a master hand; but so applied, it will certainly bring even the completely vicious into a state of perfect subjection. Not only will the want of sleep overcome the spirit of a horse, but muscular fatigue also, by being restrained to one position, will subdue the most obstinate resistance, as the following instance will exemplify. At Harlow Bush fair we were rather struck with the appearance of a likely nag, but as we saw our salesman was evidently one of a suspicious order, we squared our expectations accordingly; and having cheapened the nag to a very low price, considering his figure, we bought him, after such a trial as this sort of places afford, and this sort of persons allow. On the next day we mounted our purchase, and proceeded five or six miles on the Hertfordshire road, the horse performing well in all his paces, riding to a good mouth, and being apparently as tractable as one could wish. We were however still aware, that either he must have been stolen, or that, according to stable slang, "a screw was yet loose" somewhere, which would soon jingle, and a turnpike gate was to unfold the secret; for this gate he would not go through, not from any fear of the gate itself, but from the impulse of mere restiveness. We battled it with him some time, but it was to no purpose; and we were too well acquainted with horses to push matters to extremities; for even had we forced him through at this time, he would without doubt have repeated the same trick whenever the same spirit moved him. A radical cure was our object; and as we knew that nothing would do this so well as impressing him with a full conviction that we were in possession of a punishment that would conquer any future resistance, and one that would break the spirit of almost, perhaps every, horse, so we refrained from any further attempts to force him onwards then, but placing his head under the wall of the toll-house, we sat quietly on his back an hour. We then tried to pass him through the gate, but as his determination appeared to remain in full force, we gave him another hour of stationary riding, during which he was evidently very uneasy and oppressed with the weight of our body, unrelieved as he was by any change of position, or any locomotion. At the end of the second hour we believe that we might have forced him through, as his resistances were now feeble; but as they yet evidently existed, and our object was a permanent cure, we gave him another half hour of waiting, and then he went through the gate as tractably as any horse could do. We did not let the matter rest here, but we rode him full ten or twelve miles further than we intended, purposely to give him a sufficient notice that implicit obedience would be his best resolve, as such would be exacted of him in future on pain of a punishment not at all to his taste. It remains to add, that he never after showed the smallest disposition to rebel, although at a future period we learned that he had previously several times passed from hand to hand in the Rothings of Essex as utterly incorrigible. A similar method we recommend with confidence, as an almost certain remedy for restiveness of this kind; and as the subject is by no means an unimportant one, we shall take the liberty of extending our detail, by relating the effects of an ingenious process founded on the same principles which we have so lately detailed, and its satisfactory result by following them up, to which the writer of these pages was an eye-witness. Some of our readers may remember a merchant of great respectability and acuteness, of the name of Grant, whose lamented death was occasioned by a spring-gun set on his own premises in the Mile End road. With this gentleman we were ourselves well acquainted, and it was from himself we learned that, being once in want of a horse, he inquired of a friend if he knew of a saddle-nag for sale. The reply of the friend was, that he had himself one to dispose of, which he could recommend were it not for his unconquerable dread of swine, which rendered him dangerous either to ride or drive, and on which account alone he must part with him. Mr. Grant was not a person to be dismayed at trifles, and was also possessed of much quickness of perception, as the sequel will prove. Under a conviction that he could remedy this evil, he bought the horse, whose cure he set about by the purchase of a sow and large litter of pigs. The horse, sow, and pigs, were all then turned together into a sort of barn stable, well littered down with straw, where, with the exception of giving them food, they were never disturbed. The snortings, kickings, squeakings, and gruntings, were for two or three days great and continual; and the consequence was that three or four of the younglings were demolished, but gradually the uproar ceased, and in a fortnight's time the lady mother was seen, by ourselves as well as others, under the very belly of the horse (*fig.* 179.), busily employed in searching for the grains of corn left in the straw, with her progeny as actively engaged around her. Well might Mr. White, in his *Natural History of Selbourne*, remark, that "interest makes strange friendships."

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HORSE WITH SOW AND PIGS.

Sect. III. *The Training Exercises of the Racer.*

1172. *The ancient and modern methods of training racers differ widely*, and therefore, before we enter on the treatment of those of the present day, we will, rather for the amusement than the edification of our readers, lay before them, from the *School of Recreation*, some olden instructions, which will serve to show the methods of conditioning and training the racer in by-gone times: — "The race-horse ought to be endued with these qualifications: that he have the finest and cleanest shape possible; and, above all, be nimble, quick, and fiery, apt to fly with the least motion; nor is a long body contemptible, it assuring speed, though it signifies weakness too. The Arabian, Barbary, and his bastard, are esteemed the best for this use; these excelling jennets, though they are good too. Having furnished yourself with a horse thus qualified, you are to observe his right and due ordering before your designed racing. Bartholomewtide is the most proper time to take him from grass; the day before being dry, fair, and pleasant. That night let him stand conveniently to empty his body; the next day stable him, and feed him with wheat-straw, but that day, and no longer, lest you, exceeding that time, straighten his guts, heat his liver, and hurt his blood. For want of straw, riding him morning and evening to water, airing, or other moderate exercise, will serve. Then feed him with some good old sweet hay; and, according to the season and temperature of his body, clothe him: water your horse at a running stream, or clear spring, far distant a mile or more from the stable, adjoining some levell; where, after he has once well drunk, gallop him; and so water and scope, till that he refuse to drink more for that time; then walk him gently home, being an hour on your way or more; clothe him, stop him round with soft wisps, and let him stand an hour on his bridle, and after feed him."

1173. *The olden method of feeding the racer also*, it seems, required a general knowledge of the gastronomic arts of baking and brewing, as we see by the further directions of this worthy on the subject: — "The best food for your racer is good, sweet, well dryed, sunned, and beaten oats, or else bread, made of one part beans, and two parts oats, ground together. Boult, through a fine range, half a bushell of fine meal, and bake that in two or three loaves by itself; and with water and good store of barme, knead up, and bake the rest in great loaves, having sifted it through a meal sieve. But to your finer (loaves, we presume), you would do well to put the whites of twenty or thirty eggs, and with the barme a little ale ('tis no matter how little water): with the coarser feed him on his resting dayes, on his labouring dayes with the finer." *For scouring a race-horse.* — Under this head some of the secrets of the prison-house come out, and many a trainer of olden times has without doubt profited by these golden recipes: — "Take twenty raisins of the sun, stoned; ten figs, slit in the midst; boyle them till they be thick in a pottle of fair water; mix it with powder of aniseseed, lycoras, and sugarcandy, till it come to a stiff paste; make them into round balls, roul them in butter, and give him three or four of them next morning after his course, and ride him an hour after, and then set him up warm. Or the following may be preferred, being both a purge and a restorative, a cleanser and comforter, — Take three ounces of aniseseed, six drams of cummin seed, one dram and a half of carthamus, one ounce and two drams of fennygreek seed, one ounce and a half of brimstone; beat all these to a fine powder, and searse (sift, we presume) them: then take a pint and two ounces of sallet oyle, a pint and a half of honey, and a pottle of white wine; then, with a sufficient quantity of fine white meal, knead into a stiff paste, and keep for use. When occasion requires, dissolve a ball of it in a pail of water; and, after exercising, give it him to drink in the dark, that he may not see the colour, and refuse it. [We should rather suppose the smell would be sufficiently objected to with or without light.] If he does refuse, let fasting force him to be of another mind!" The popular instructions of Markham, as regards the preparations for the race, conclude this *vademecum* of by-gone times:—" Course not your horse hard four or five dayes before your match, lest you make his limbs sore, and abate his speed. Muzzle him not (except a foul feeder) above two or three nights before the race, and the night before his *bloody courses*. Give him sharp as well as gentle courses on the race he is to run. Shoe him a day before you run him. Let him be empty on the match day. Saddle him in the stable, and fix to him the girths and pannel with shoemaker's wax! Lead him with all gentleness to his course, and let him smell other horses' dung to provoke him to stale, &c. Lastly, being come to the starting-place, rub him well, uncloak him, then take his back; the word given with all gentleness and quietness possible, start away, and God speed you well."

1174. *The training exercises of the racers* are commenced at a very early period of their age, and are most frequently pursued, for obvious reasons, in company; and as the exertions these young ones are hereafter to make are very severe, so in proportion are their training exercisings severe also; and in what is to follow, we are constrained to remark that there is but little of nature throughout this fashionable sport. There is infinitely more of nature in a fox hunt (unnatural as it may appear to be for a horse to follow a dog, a fox, or any other animal, for ten or twenty miles) than there is in a racing match; for no impulse of nature would force a set of horses to gallop a continuous race of four miles, and much of it at the top of their speed too. The very exertion would probably destroy them, if even their fears or their inclinations prompted them to the attempt. In an undomesticated state, the fleetest Arab, or the stoutest barb, notwithstanding the fables related of both, would be found unequal to vie, either in speed or duration, with even a moderate race-horse of our breed when in racing condition; such inequality, arising less from their enlarged size than from the increase of the powers of their bodies, which has been gained by our methods of conditioning and training them.

1175. *The training of the young stock* is materially forwarded by liberal feeding, both while "at foot" and after weaning, as already insisted on. That respectable correspondent to the *Sporting Magazine*, Lord Harley, known as the Old Forester, observes, "A very little attention to their (young racers) condition in the paddocks, would put them half prepared into the trainer's hands, and thus much time be saved; which, it must be allowed, is no unimportant article in the short life of a race-horse even formerly, but of much more consequence now, when they last but a year or two. The earlier the breaking of the racer takes place, the better; first, because of the number of two-year-old stakes now going; and, in the next place (even if not wanted until a more mature age), in case of moving, accident, or illness, they are managed with comparatively very little or no trouble." He also reprehends confining them in too small paddocks, justly remarking that, by early exercising of themselves, they do not only supple but strengthen their limbs, so that, when taken into training, they are able to use them without injury, from their whole frame being already somewhat hardened by good meat, and lightened by the room they have had for frolicking about. It must however strike every reflecting sportsman, that subjecting the young stock to the fatigues of training before they are two years old, which we know is now frequently done, strikes at the very foundation of our attempts at any further improvement of our racing breeds; indeed, it rather favours their deterioration, and that even under every advantage we can possibly give them between their birth and this period. How can it be otherwise, when such juvenile forms are made to take nearly the same gallops, and some of them to sweat nearly as often as those which are two or three years older?

1176. *Training should be conducted according to the circumstances of the horses themselves.* The processes pursued vary also according to the age, the condition, and the hardihood of the horse. "A four or five-year-old," of course, must be trained so as to be able to run a race of from two to four miles. Such a horse, therefore, must in his exercisings be accustomed to go at a telling pace a longer length than his intended racing length. This he must be accustomed to do, if it is expected to get, as it is called, *the length he has to run into him.* Without good training, and that training made commensurate with the length of course the horse is to run, he cannot be expected to continue at a winning pace any considerable distance. It is also of the very first importance, that the horse that has any of these lengths to run should have his training sweats and gallops carried up to the time of his going to post. If he is a *craving, i. e.* a hearty feeding horse, not a sweat must be missed on any account. The judicious trainer will also carefully mark what flesh a certain horse can best run under; some can do it under a "load of flesh;" others "sail," as a sailor would say, "best under bare poles." When the observant trainer finds that, as he "trains on," the limbs do not suffer, nor the constitution either, but seeing that the finer he draws his horse the faster and the longer he will go, he profits by his experience, and pursues the system;

To face p. 336.

GROUP OF RACING STABLE BOYS.

but he will now do it with a double portion of vigilance. He must watch the process with a keen eye, and stop the severity of his plan the moment any unfavourable alteration takes place; but ever bearing in mind, that, with "the hearty and craving horse," he must continue his training exercises and sweats until he is, as it were, leading to the post. It is a turf maxim, liable to fewer exceptions perhaps than any other, that horses should be trained to the day on which their engagements are to take place; and further, that should any thing prevent the running of a horse on that day, it will require extreme vigilance on the trainer's part to keep him up to the exact mark.

1177. *Race-horses are either trained at home or abroad.* By this we mean that many gentlemen, particularly such as are breeders as well as turf professors, have large training establishments of their own, either on their estates or near some popular racing locality: others train their racers at some public training stables, of which there are many excellent ones to be met with near sporting towns or popular race-courses. When public stables are used, should the proprietor find at once a clever and a faithful groom, who has been brought up to attend on racers, he may, if he pleases, engage such a one and send him with the horses; but it is by no means, in a general way, a judicious measure; it would be better to let the whole responsibility rest with the owner of the public stables; for, in the other case, whatever happens will be placed to the groom's account. But in accordance with the writer of that clever *multum in parvo, The Turf Expositor*, we would caution every turfite from placing a horse to train with one who is either owner or part owner of any race-horse. It is unfortunate that so many of our public trainers have sprung from a low origin, for by it they contract low cunning; they also seldom acquire real information, but attempt to disguise great ignorance under an air of mystery. Science they laugh at, and affect to despise, although it was science that made the race-horse what he is; and further, that it is by science only that he can be kept up to the same standard. The trainer ought to be made aware that mystery is only a cloak to hide ignorance; and we assert, without any fear of just contradiction, that there is not one secret in the knowledge of any trainer living, that is not to be found in the practice of every well-conducted hunting stable. It is also to be found in the admirable work on *Training*, by Mr. Darvill, who is too truly informed to make any secret of the matter; and we hope that these gentry will now leave off the affectation of knowing more than others, if it is only that we may not suspect that they know very little: if they really knew one half they pretend to, it would teach them the true value of honesty. As knowledge becomes more generally diffused, it will drive ignorance even from the stable, and with it all affectation of wonder working by secret operations and mysterious processes. Should this happily occur, we must mainly attribute it to Mr. Darvill's writings, which have tended to clear the Augean stable, and bring into daylight what has been heretofore held in almost total darkness. Our pages have been in no small degree benefited by his hints. Amongst the great number of volumes which we have examined in the preparation of this work, none has supplied more useful information on the subject of which we treat, than that of Mr. Darvill, and we regret that his ill-health at the time prevented our personal communication with him.

Subsect. 1. *The Trainers, &c. of Race-horses.*

1178. *A training establishment* is necessarily composed of a motley group of active agents, from the training and the trial grooms to the numerous subordinates of riding boys, stable boys, &c. &c.

1179. *The duties of the training groom*, as we have already hinted, are both numerous and important; and before we proceed further, it may not be uninteresting to glance at the progress of this turf auxiliary, from boyhood to manhood. "A training groom," says Mr. Darvill, "should be thoroughly acquainted, not only with every thing relating to the business of training them (*i. e.* his horses) to run, but he should know how to guard against accidents, and give the necessary orders how they are to be ridden in their different races, according to the constitution and temper of each particular horse." When tracing the history of the training groom, the same authority observes, that "he should be small in his frame, but strong and well set;" and he lays the greater stress on this, because not only are the horses less distressed by the weight of a light than of a clumsy bony boy, but because the groom also looks forward to a common occurrence, that at a future period he may become a jockey; consequently, one of much bulk being under the necessity of reducing himself greatly, becomes too weak to compete with a difficult horse, or to ride three or four-mile heats, as is sometimes required in country running. The training groom is therefore first a stable lad, who is usually entered at the age of twelve or thirteen years. After directing the initiation of the boy into the grooming of horses, Mr. Darvill next details the method of teaching him (the stable boy) to ride, under the direction of a head lad, or of one more advanced in the training practices. "Let us suppose," he says, "a string of race-horses to be clothed up, turned round in their stalls, with the boys on them, ready to go out to exercise. Before they start, the head lad gives his instructions to the young boy; he arranges the length he is to ride in his stirrups, by making him stand up in them, and leaning his body forward, with his fork over the pummel of the saddle; his breeches being loose, should just lightly brush the top of it, as he is directed to move his body forward and backward. This length answers the purpose well enough at first, until the boy gets more inured to the habit of riding; he will then exercise his own judgment in this respect. The bridle-reins are knotted at a well proportioned length, so as to enable the boy to have a very firm hold of the horse's head, whenever he finds such to be necessary. He should now be directed to sit upright, but well down in his saddle, keeping his knees and the calves of his legs tightly pressed to its flaps; his toes should be as much turned in and up, as the hold with his knees and the calves of his legs will admit; and with his feet rather forward, he should have a pretty firm hold of his stirrups. He is to be told the distance he is to keep from the horse in front of him. He is next to be directed almost invariably to keep his hands well down, more particularly when the horse is going up his gallop; they must be well down on each side the horse's withers, as seen in the moderate gallop of a young racer (*fig.* 180.). The boy's hands thus placed give him some support against the horse whenever he feels inclined to pull; nor is he to move his hands from this position (walking exercise excepted), unless to take a pull. If the horse should be making too free with himself in the gallop, he may then move his hands to take a pull, or rather, first gradually give with the reins, and take the pull afterwards. By these means the horse's mouth is kept alive, or, in other words, sensible to the pressure of the bit; and thereby the boy is enabled to hold the horse in the gallop, and to pull him up at the termination of it. But he should be cautioned, that, when the horses are making their run at the end of the gallop, as they will sometimes have to do, he is to lay a little out of his ground to the right of the horses in front of him, so that he may have room to pull his horse up gradually, and not balk him of his stride." (*Treatise on Training*, vol. i. p. 299.) Young horses in their training are apt to be skittish, or, in turf language, "to be calfish," and in such cases they frequently throw one such youngster, or "give him a calf." To guard against this, the boys are directed to sit upright, firm, and well down in the saddle, and as much as possible to prevent their horse from getting his head down.

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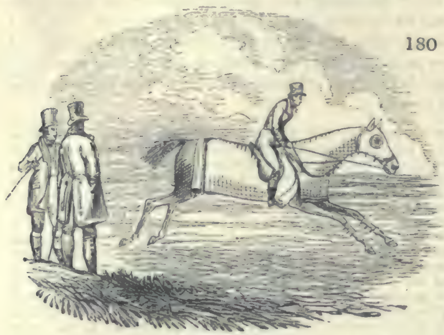

TRAINING GALLOP.

1180. *The bridle-reins and bits used on these occasions*, as well as those ridden with by the jockey in the race, are important matters, and will, most of them, appear as accompaniments to the various figures which embellish our subject. Many of the colts in training are skittish, and may pull hard; and as the lads riding these younglings are necessarily light, so the want of strength in their puny arms requires a form of bridle that will supply the required restraint. A snaffle bridle with a spare rein is all that is wanted with some. Another that pulls somewhat, is best managed by the addition of the martingal and spare martingal-rein. A still harder puller will require a gag-bit and rein, and where the horse is inclined to throw up his head and bolt, add the running martingal-rein to the gag-bit. The common martingal-rein will lower the head on all ordinary occasions. The reins of these restraints had better be knotted and allowed to lie on the neck, and only pulled at when the horse appears inclined to get his head up, and even then should not be used at a dead pull, but in "a give and take manner," which will keep the mouth alive.

1181. *Race-horses should enter on their training exercises in a proper state of body.* The young ones should not only be perfectly sound and healthy, but they should also, according to the trainer's vocabulary, have "a good bit of flesh on them." This is a matter of some importance, we feel assured, because we have always heard it insisted on by experienced trainers, that, except with very "craving horses" (*i. e.* ravenous feeders), it was more easy to take flesh off than to put it on; and also that, though the trainer would rather *run* a lean horse than a very fat one, he would, nevertheless, rather *train* one with a superabundance of flesh than one with too little: for it should be remembered that training exercises are of themselves sufficiently severe, without setting out with emaciation as a foundation. It must, however, be taken into the account, that although these remarks in a certain degree will apply to all horses entering on training, it does so with most force to the younger ones. The quantity of flesh that may with propriety be left on any horse intended to run soon, will also depend not only on his own nature and constitution, but also on what he has to do. Some of our best judges are not averse to bringing their three-year-olds to the post high in flesh, when they have only to run short lengths; but then they take care to discriminate between the flesh laid on the surface of the body and that entering within all its cavities, which they call being *inwardly* fat. *Fat at heart*, as they term it, is a dreaded state with turf-trainers, and it must be worked down either in young or old; but, as before observed, where it is allowable in any degree, it is only in such as are to run short lengths. Nevertheless, after all the rules that may be laid down, much must be left to the judgment of the trainer; who, if observant, will soon discover in what state each horse can best perform his trial exercises; and in that state he should be brought to post.

1182. *Classing of horses in training* is now more practised than formerly, when, as Mr. Darvill observes, "it was too much the custom with grooms to work too many horses together in one class, without their sufficiently discriminating as to how their ages and constitutions might vary, as well also the lengths their horses were to come in their different races; consequently, some flighty delicate horses lost their tempers, and went off their feed; while others, by being kept too long in strong work, were drawn too fine, became stale, and got amiss on their legs." Horses in training therefore are, or at least ought to be, classed according to their ages, to their physical powers, that is, according to their constitutional hardihood or stoutness; next, they should be classed as relates to their different rates of speed, or their mechanical powers;

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RACE HORSES EXERCISING

and lastly, according to their tempers; which is so variable, as to make a distinction in favour of some very obvious. Some, indeed, are so very peculiar in temper as to require to be trained entirely out of company; and as it often happens that these oddly tempered beasts are among the very best if taken aright, it is always prudent to attend to them carefully. In training, therefore, the yearlings, the two-year-olds, the three-year-olds, and the four-year-olds, each should occupy their separate class only, unless any particular circumstance renders a removal to another class prudent. All horses in training after four years old, fall under the adult denomination, and train with the aged.

1183. *Training exercises for race-horses* are confined to walking, cantering, and galloping; trotting forming no part of turf practice. Early in the morning, the horses having been rubbed over and corn fed, each being mounted by a boy, the whole are ridden out of the stable in their body-clothes and hoods into the stable-yard, where they continue to walk round and round as long as it is thought necessary to steady the colts and settle the saddles to their backs, which it is very necessary to do, to prevent the vice of kicking from growing on them. In very bad weather the court-yard is often the limits of their exercising; but at all other times they proceed to the exercising ground, where they walk for a longer or shorter period, according as they are only in moderate or in strong work. During this time, it is usual with the groom to give the requisite instructions to the boys and to class the horses, after which they proceed to canter and gallop over such distances, and with such severity of pace, as is correspondent with the state of their condition, their age, and their strength of constitution. As regards the quality of the different training exercises generally, it may be observed that walking, when long continued, will reduce the flesh effectually, and at the same time it will not injure the *stale* horse. Cantering supples the limbs and improves the wind, but it does not increase the stride in the degree of the gallop.

1184. *Training gallops are of different lengths and different degrees of speed*, according to the different circumstances already alluded to. In extent they vary from half a mile to a mile and a half, and in some cases to more than two miles; but these latter distances are seldom forced on any other than the hearty strong horse, that cannot be continued in high form by any other means. Our critical authority, Darvill, says, "The length of gallops for different horses varies occasionally. There are two lengths in general use; but as these lengths are at times deviated from, I shall give four, namely, half a mile, three-quarters of a mile, a mile and a quarter, and a mile and a half. Generally speaking, the two middle lengths are in most frequent use, as there are few horses so delicate but that they will exceed the former length, and but few so 'craving' but that the latter will be found sufficient for them, the pace being properly regulated." It will however be evident, that, to teach them to extend their stroke to its utmost limit in the gallop, it is necessary that a sufficient portion of their galloping practice should be almost at the top of their speed. This being not only necessary to get the "length into them," but also to enable the trainer to form a just estimate of their several powers both of speed and endurance. Horses in training sometimes have morning and evening gallops, which become necessary, on some occasions, to keep the craving horse from a too rapid accumulation of flesh, or, in turf language, from "putting it up too quickly" between the sweating days. Some horses require this frequency of gallop to increase their wind also, as well as to handy them in this important pace, and also to teach them how to extend themselves fully in their stroke. At all these times it is absolutely necessary that the groom be present; and he must be alive to every move of the horses, and to every action of the boys, who will otherwise become "tricky," and teach their horses to become so too.

1185. *Sweatings are important agents in training*, as by this process the body is relieved from all unnecessary interstitial matter. Further, when they are pushed to their utmost limit, it is not only the fluids which pass off, but even the solids of the body are also taken up; and thus jockeys can reduce themselves several pounds by violent perspirations, repeated for two or three days only. Sweats therefore promote speed, by lightening the body; they likewise are favourable to stoutness, or endurance of running, by unloading the air vessels of the lungs; perhaps also they do it by actually enlarging their dimensions, and thus allowing of an increased aëration of the blood. But their most efficient action is by promoting absorption, *i. e.* by the act of taking up, whether by capillary attraction, or other inherent power, we know not; but we do know the fact, and that by sundry depleting processes we can stimulate what we call the absorbents of the body to suck up and remove, by means of their innumerable open pores distributed over the surfaces of the interior, all superfluous matter, or, in other words, whatever fluids, and even solids, can be spared, so as greatly to lessen the general weight and dimensions of the body throughout.

1186. *The process of giving training sweats* is to clothe the horse very warmly, and then to walk him to the exercising ground, when he is to be soon started into a canter, which the rider, at a proper time, quickens into a smart gallop over a mile or two. On his return he increases the pace, yet not so as to "over-mark," *i. e.* distress, the horse; but, judging by the difficulty, or the ease, with which he maintains his stride, he allows him to gallop moderately, or he forces him home nearly at the top of his speed, where, being stripped and scraped, he is in many cases again taken out and given another brushing gallop. This scraping is, however, often performed on the training ground, and particularly so when there are

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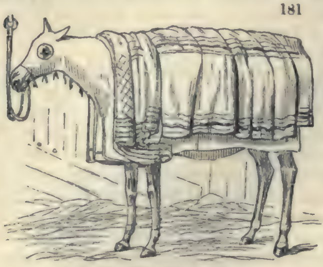

SWEATING THE RACER.

appropriate sheds or a rubbing house; but when stripping and scraping are done on the ground, much care is required that the horse does not take cold from exposure. In cases where the sweats are intended to be very severe, as soon as the horse arrives at home additional clothes are put on; and the stable being closed up, he is allowed to continue to perspire violently under the united effects of the exercise, the extreme clothing, and a heated stable. But this system of inordinate sweating is getting out of fashion among trainers in general. Chiffney, the celebrated jockey, in his curious work, called *Genius Genuine*, remarks, "It is destruction to sweat horses as they have been sweated at Newmarket, their sweats being repeated every six days, and sometimes oftener, and between those days of sweating, it is usual for the horses to go out twice a day, each time having strong exercise. In those sweating days the horses are mostly covered with clothes, two or three times doubled, and go in their sweats six miles, more or less, and at times go tolerably fast." In some cases also a strong sweat is given to a horse the day before he is to run, which cannot, we think, be otherwise than injudicious, as tending to detract from the powers of the animal more than it can benefit by lightening him; but a gentle sweat, under moderate clothing, is found to assist the speed and stoutness, particularly of the craving horse. "Longwaist was beaten at Manchester by Granby, by being too lusty; he was therefore well sweated, and went to Newton the following week, and there he won the cup easily, beating Granby, who carried four pound extra for having won at Manchester; but which extra weight evidently did not win Longwaist the race, as they met on the old terms at Preston, where Longwaist again defeated him, and also Fylde, the winner of the two Chester cups." This serves to show the necessity of training sweatings during the engagements of race-horses. Those familiar with turf matters of by-gone days will recollect that the failure of Escape against Lord Grosvenor's Skylark was attributed to his having been a fortnight and a day without a sweat. In proof, Escape lost on the 20th of October, 1791; on the next day he beat the same horse, in consequence, as is supposed, of his sweat the day before. These sweating exercises are repeated at intervals of five, seven, or ten days, according to the age and condition of the horse. It remains to observe, that the duration of systematic training varies according to circumstances; but it is always a process of several months' continuance, inclusive of the course of physic, &c. &c. When completed on a young horse it ends with the "trial."

Subsect. 2. *The Trial of the Training Racer.*

1187. *The trials which are to determine the goodness of the rising stock of a great racing establishment*, are of course very important matters; and although a "tolerable judgment may be formed of the probable goodness of young racers from their training performances, their thriving, furnishing, &c. yet nothing short of an actual trial can be safely depended on. In small establishments the horse, or horses, under training are tried against the best known racer in the owner's possession, or he hires a trial horse of some other sportsman: and horses of repute used to obtain considerable sums for running trials; but this hiring of a trial racer is growing into disuse. As trials are strong indications of what a horse can do, public notice is usually given of the time fixed, that no person may come within sight; which it is evident is but a fair adjudication, as any certainty previously known would destroy all interest in the race pending between the horses. Much fraud is, however, practised in this way, and always will be. Mr. John Lawrence informs us that, "Eclipse's trial at Epsom was watched; and although the parties, men no doubt employed by blacklegs, or blackguards, were a few minutes too late, yet they obtained the intelligence they wanted from a casual passenger, and thence the flying reports of the great powers of that horse were confirmed, and the odds so considerable upon him on his first starting at Epsom." By a reference to the rules and orders of the Jockey Club at the close of our discourse on racing, it will be seen how careful this respectable body have proved themselves to prevent improper interference or collusion in these trials. It is, however, to be doubted, whether means are not yet resorted to calculated to frustrate all their caution. On this subject the Old Forester remarks, "Speaking of trials, there is no contrivance by which more money can be thrown away than in the so called trials. The trial horse is often stale, and with hardly a leg to stand on, at high weights, and perhaps on a course which does not suit him, brought out against a young one in the highest possible trim, fresh, and ready to fly out of his skin, and a light weight on his back. The old one, whether it be his forte or not, must make the play; and, as naturally may be expected, the young one runs up to the old one like a shot, as the trainers say; he is accordingly backed heavily, and on the day gets a comfortable beating, to the very great surprise of those in the secret. This is not always the case; but I fear too frequently it is. Another evil in the usual mode of trying is, that boys, not jockeys, are put up in trials by way of greater secrecy, as if a trial ever yet was kept quite a secret."

1188. *The trials of racing colts and fillies in great breeding establishments* are however, in most cases, privately made; nor is any other horse, as a trial horse, engaged to run against them: but the young racers are classed against others of the same sex and age; and instead of going on any known course, or hiring any public ground, a strictly private trial is made on some spot belonging to the owner, as a home paddock, or retired part of his park, &c. The colts, as we have observed, are usually tried with each other, and the fillies also by themselves. The former, if yearlings, being weighed to carry eight stone, and the latter seven. The two-year-olds usually carry two or three pounds more, and so on with the three and the four-year-olds; thus weight, severity of pace, and length of course, all increase with the age. The yearlings are commonly tried against yearlings, and the two-year-olds against their fellows also. The lads who ride these trials, though sufficiently handy and accustomed to the horses, yet require to be carefully looked after by the head groom, or other trusty person. They should be strictly cautioned to keep a steady hold of the colts, that the flighty ones do not break away at first, but that they get well settled in their stride by degrees. Any tricks learned now take deep root, and may never be got rid of. Many a flighty horse of great promise has been made not worth his keep by the mismanagement of the riding boys. Having had a short gallop to steady them, the colts for trial are brought up in a line, abreast of each other, to the starting-post, and are fairly started from thence by the word *away!* given by the head lad, who then follows in the rear to mark their running, and to report his observations to the head groom or trainer, who is awaiting the arrival of the first colt at the winning post, and is further ready also to notice how the others are placed. From the account he receives from the boys, as well as from his own observations, he draws his conclusions relative to the merits of the horses individually and generally; and if the winner shows much promise, he communicates his opinion to no one but his principal. The fillies are also tried together, either on that day, or, as is more common, on the following morning. In the private trial with either yearlings or two-year-olds, &c. &c. if any one of them should particularly distinguish him or herself by length of stride and apparent powers of endurance, so as with seeming ease to outpace the others, it is recommended not to restrain such from any fear of the consequences, for as long as the animal goes of its own accord no harm will occur; but, on the contrary, it is advisable to let such an one do its best, for checking a forward and hearty colt, or filly, might balk the animal in its stride, and do the temper and spirit irreparable injury. This advice, however, evidently applies only to yearling and two-year-old colts. In trials of these kinds every care should be taken not to flurry the young colts and fillies; but, on the contrary, to make such trials as much like the ordinary exercise as possible: indeed, some irritable tempers have been irreparably injured for want of due caution in this respect. On the results of the trial it will only be necessary to observe, that if any one of the colts or fillies should determinately take the lead, and so keep it the whole distance to the winning post, and the owner be present, we would advise him not to show his pleasure on the occasion too warmly, but rather to seem cool on it, taking care nevertheless to treasure it in his memory. Much of this caution however will be rendered unnecessary if he be quite assured of the fidelity of his trainer and head groom; but their caution also on such occasion should be doubled, lest these favourable circumstances of the trial should transpire. The trial of four-year-old, five-year-old, and all older horses, as already observed, is a mere formal matter; the methods of conducting which, and the regulations concerning them, are dictated by the Jockey Club, and may be seen at the end of our racing treatise.

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TRIAL OF YOUNG RACERS.

Subsect. 3. *Of Training Grounds.*

1189. *Exercising grounds*, expressly appropriated to the purposes of exercise and training, are essential to the safety and convenience of race-horses for both purposes. Such grounds should present a smooth soft surface of elastic turf; such as is to be met with on moorlands is the best, when sufficiently dry. Uneven surfaces, as ruts, mole-hills, foot holes, &c. endanger the legs and feet, and they also tend to make the young horses go high in their action; whereas smooth ground accustoms them to go low and skim fearlessly along the surface, stretching their limbs well over their ground with increased speed and diminished exertion. A dead level plain is not altogether the best training ground; gentle undulations of hill and dale extend the stroke and improve the wind, as precipitous ones injure both, and shake the legs and feet too much.

1190. *The best English training grounds*, Mr. Darvill considers to be those of Newmarket in the south, and of Black Hamilton, Langton Wolds, Middleham, and Whiteclift Moors, in the north. In Scotland the Links afford favourite spots, as they present a level surface and excellent foot hold. In Ireland, the Curragh of Kildare has been long celebrated as among the best training and racing grounds of Europe. It is said the nightly workings of the earth worms keep these courses in a constant state of elasticity, and afford at all times good foot holds. There are eighteen courses on the Curragh, varying from each other, so as to present hill, dale, and level; which diversity enables match makers to choose their own ground, and to adapt them to their own tastes, or to circumstances connected with their horses.

Subsect. 4. *Training Exercises of the Hunter.*

1191. *The object of training the hunter* being the same with that of training the racer, *i. e.* that of making him equal to extraordinary exertion, it might seem to follow that the processes would be altogether similar; and to a certain degree they are so, but beyond that degree they vary. We train the racer "to keep the length in him," *i. e.* to insure a burst of speed; but we train the hunter to exhibit stoutness as well as speed. A few minutes end the exertions of the racer; and if he be rendered light in shape and weight, spirited by high keep, and emulous by rivalry, his flight is sharp but short. The hunter as well as the racer requires to be completely freed from all gross matter: but were he to be drawn as fine as the racer, he could never support the weight of a full sized man in such a burst after foxhounds of the present day as is often met with; still less could he live under such a weight in a protracted chase, where the *clipping pace* finds little other change than in the *rasping jump*, and the finale of the sport often leaves a journey of from eight to eighteen miles home.

1192. *In the training of the grass summered hunter*, it is recommended that his exercise be confined to walking and trotting until he has completed his course of physic, with which we fully agree. But we would also recommend during that time, if the horse be very full of flesh and of a craving nature, that his walking exercises be taken twice a day, each walk occupying an hour and a half or two hours; not but that trotting, and even gentle galloping, might by degrees be added to the walking exercise with benefit in some cases, particularly after the first dose of physic; but in the outset of a hunter's training, particularly when direct from grass, or when very full of flesh, or at all stale on his legs, continued walking exercise, by gently but effectually reducing the bulk, will be the best preparation for his future sweats and training gallops. As it is evident that the training process of the grass fed hunter must occupy several weeks, it should commence by the middle or latter end of July. If he was taken up the first week of the month it would be better, for his legs and feet get battered by stamping, and his coat gets unthrifty, sun-burnt, and fly-blown; in fact, the turning a hunter to grass at all is now rarely practised.

1193. *In the training of the box summered hunter*, as there is less fat and fulness to get rid of, or of hard flesh to get up, it is not imperative that the process of conditioning should commence so early as that of the grass summered horse. Neither will it be necessary that so much preparation in accustoming him to the heat of the stable be observed; having therefore put him through such a course of physic, &c. as his state requires, it is recommended that, in addition to his regular exercise, he should have some gentle sweats. "Having clothed him," observes Nimrod, "pretty heavily for this purpose, put a light boy upon him to ride, or have him led in a soft meadow; or, if you have not that at your command, in a fallow field which has been rolled and dragged in the course of a preparation for a wheat crop. The common exertion to get over such ground, at the same time that it will benefit his general action as a hunter, will soon cause him to sweat, though he does not exceed a trot of about seven or eight miles an hour. If the weather be never so warm, take him into a well sheltered place to scrape him, so as not to expose him to a stream of air; for this being his moulting season, his skin will be very susceptible of cold, more particularly so if he be at the same time taking emetic tartar, or any other antimonial alteratives. When he is nearly dry, which, if he has been treated as I recommend in the summer, he will soon be, put a dry hood and other dry clothes upon him; let him walk quietly for twenty minutes or half an hour, when he will be in good order for dressing. The currycomb with blunt bars to it, and the hay wisp, are the only implements to be used in dressing him, as he will part with his dust sufficiently for present condition in his sweats. Let him have his water tepid, and be shut up for six hours without being disturbed. (*Letters on Condition*, p. 181.) A similar plan must also be pursued with the grass summered horse; but as with him that conditioning process cannot be undertaken before September, which is commenced as early as August on one that is box summered, it must be evident that, where it is requisite that the horse be in good form in November, which every hunter should be, whether he is to be engaged in cub hunting or not, this difference of time will operate very disadvantageously on such as are grassed. Mr. Weddon, the head manager of Lord Plymouth's stables, and one of the earliest partisans of the box summering system, in a communication to Nimrod, says, "The time I begin to condition my hunters is about the middle of August; I trot at a moderate rate, but only sufficient to warm them; and thus I continue until the middle of September, when I begin to sweat, which I do on soft ground, with as little clothing as I can help, except when a horse happens to be very stout, and then I think more clothes necessary." Where very valuable horses are concerned, in cases of much staleness of legs, it is prudent to have such an one led by a lad on a hack.

1194. *A moderate sweat on the day before hunting* is also advocated by some crack sportsmen. Nimrod is very favourable to it, and in reply to an argument against it, "that it is not the practice in racing stables to sweat their horses the day before running," says, "that the race-horse in training is always going, but the hunter lies comparatively still for two or three days after his last chase." And without doubt the hunter during this holiday has been filling his vessels, and accumulating more solid matter than is proper, which makes it certainly in favour of the preparatory gallop. It is to further the same intention that the hunter is kept short of hay on the day before he hunts, and that his setting muzzle is put on at night, and that he is either wholly or greatly debarred from water on the day itself.

Subsect. 5. *Trimming, Clipping, and Singeing of Horses.*

1195. *Trimming of horses* is not practised to the same extent as formerly. Few of our nags even are without a fair portion of blood; our hunters are either three-parts or otherwise full-bred, and consequently have not an unsightly exuberance of hair; nor indeed is our rage for decurtation of the hair so great as heretofore. Some trimming, however, most horses require; and as it is an object with every master to have this operation well performed, and with every young groom to learn how to do it well, we will offer a few hints on the subject, being ourselves, when we kept horses, somewhat particular in having it done in the best manner. We would however premise, that in no case will the difference in the degree of submission which the horse yields to a kind and humane groom, and that which is forced from him by a rough and unfeeling one, be so apparent as when this operation is going forward. Every horse dislikes it, but, notwithstanding, a general system of kind treatment, coupled with particular marks of conciliation at such times, will in most instances be acknowledged by obedience from even the naturally refractory horse. The process of trimming on the contrary, under the hands of a hard-hearted groom, is usually followed by violent resistance on the part of the horse; and when trimming can only be effected by cruelty and severity, in most cases it is badly done after all. To such grooms and stable men as are naturally unfeeling towards the animals committed to their care, it will little avail us to oppose argument to their habitual violence. But when addressing those who feel for the animals under their care, we would, for the sake of such, recommend that mild methods only be pursued, particularly when certain considerations are allowed their due weight. If the shy horse be a late purchase, it is ten to one but that, under former trimmings, he has been ill-used, and therefore very naturally looks forward to a repetition of the same, as soon as he has reason to suppose he is going to be trimmed again. Is he to blame? No, we reply; therefore do not punish, but first coax him by kind actions and by kind words, which all horses well understand. It is very seldom that beating will have any other effect than to make him more troublesome, and not unfrequently it leaves him irreclaimably vicious, at least to that groom or his co-mates. However, when so much resistance is offered as entirely to prevent trimming, the twitch may be very properly applied either to the ear or nose, and in every case this is much more likely to force submission than beating; and further, it seldom leaves the horse alarmed or rebellious.

1196. *Trim neatly or not at all.* The grand aim in trimming should be to do it in such a manner, that not only the appearance of the horse shall be greatly improved by it, but that the process whereby its improvement was effected shall not stare us in the face; on the contrary, let it be so done that the horse shall rather appear to have parted with his superfluous hair by one of the ordinary operations of nature than by trimming. The marks of the scissors, therefore, must not be detected, nor the crisped ends of the singed hair disgust us by their prominence. Some parts are particularly difficult to trim neatly, as hollows, bendings, &c.; the heels, for instance, which are to be trimmed blood-fashion, although the horse himself is only half-bred, can only be well done by a first-rate workman. Scissors of two or three sizes and of different shapes are necessary; a crooked pair will be found very useful for the hollows. The combs also, both steel and horn, should vary in size and shape, to suit every part of the body; thus a curved comb will be found very convenient. It will however be well to hint, that unless the scissors are very sharp, the work cannot be neatly done, and that to keep them with a good edge, all dirt, and particularly gravel, must be first got out of the hair, especially from the legs. To the mane the scissors should not be used at all, but employ the mane puller. The patent mane puller sold by Long, of Holborn, was our own invention, and was given by us to Long, whose liberality on the occasion was shown by charging us a good round sum for the pattern one he made to our order. To return to our subject, use this on the mane in preference to scissors; but when the mane inclines to become either too thin, or too short, use a brush only. The tail also must be treated according to the fancy of the owner. The blood tail is now left pretty much to nature, and is only squared when it is very full; if it must be thinned, pull the hairs from each side. The squaring of the tail requires some dexterity to do it well; and to keep it in good order, it should be attended to frequently. The tail scissors should be long in the blades and very sharp: when using them elevate the tail, by means of the hand, to the height it is usually carried; begin the cutting in the middle, and carry the scissors round towards the circumferent edges. The mane when very thick and bushy, should be thinned a little every day by the patent mane puller already noticed, until it presents the requisite appearance, but by no means do it with scissors, or the short ends will show their stubs. However, should such a disfiguration take place, lead the whole mane slightly, and pursue a different method the next time. Be very careful how the foretop and the hairs around the ears are treated; and although it is not uncommon to cut it away where the bridle rests, it is not a good practice, as it leaves an ugly vacancy in the mane, and does nothing towards accommodating the bridle or halter. The hair of the ears we would advise to be left entirely alone and never to be singed. The long hairs around the eyes &c. *pull* out, but do not *cut* off, or a sudden flinching may carry the scissors into an important part. The hair of the muzzle should be trimmed very neatly, that is, close and even (*fig.* 183.). Some singe the muzzle, but the doing it by fire frequently alarms the horse; and when it is done, each singed hair carries a rusty bulbous point, as though a nit was stuck on it: avoid therefore singeing the muzzle if possible. Some pull out the hairs, but it is often resisted by the horse; but when it is determined on, wax the fingers.

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TRIMMING THE HAIR.

1197. *Trimming the heels* is also an operation that many pretend to, but few excel in. In the first place consider what service the hair, if left on the legs, will render your horse; thus in a flinty and chalky country, too close leg trimming exposes the hunter and even the hack to severe cuts. When any horse is coarsely haired from his knee downward, we have found that careful singeing left less gaps than the best scissor trimming: particularly avoid, however, cutting the hair too closely from the upper part of the shank, otherwise the legs will suffer much in appearance, for it is the object of every judge of a horse that the back sinew should stand out on a line with the fetlock. Some grooms are clever at trimming the heels blood fashion: we ourselves had such an one; and we well remember that he used not only scissors, but his fingers also, which he either waxed or resined; sometimes he did both; and certainly he trimmed blood legs better than any servant we ever had. We should observe, however, that he was a Yorkshireman, and had been brought up among race-horses. It is more than probable that some of those gentlemen who visited us and our stables in Wells-street, will call him to mind, as all his manipulations bespoke the workman.

1198. *The natural coat of the horse*, as we have already observed, is deciduous, being alternately short and long. When the summer heat dies away, provident nature, sympathising with the wants of the animal, removes the short coat and substitutes a longer one for winter wear; but we having accustomed ourselves to a sleeky smoothness of the exterior of our favourite breeds of these animals, contrive by artificial means to keep them short-coated during the rigours of winter also.

1199. *Clipping*, as a technical term, is only a variety of trimming, and to that we wish now to draw the attention. Our ideas of beauty are regulated by custom; and hence the Shetland pony, the Scotch terrier, and the Newfoundland water-dog, would appear monstrosities were they not shaggy and rough in the extreme. But to please other tastes, our blood-horses, in imitation of their primogenitors, are only admired when the general covering of the whole body as well as the legs, &c. &c. is short, smooth, and glossy. Now as, in our climate, this can only be so *naturally*, for little more than one-third of the year, it follows therefore, that if we determine to have our horses continuously sleek and smooth, instead of periodically so, we must either keep the animals themselves constantly in such a temperature as, by imitating an eastern climate, shall prevent the formation of long hair; or we must make use of some means to reduce the length of the winter covering to that of the summer measurement. It is notorious that by uniform warmth throughout the year, we can establish in most cases a permanent short coat. We say in most cases, because there are some few exceptions, of which it is said Parasol was an instance, all attempts being fruitless to make him carry other than a rough coat. We have also ourselves met with similar cases among horses, and in such likewise as were not wanting in a preponderating share of blood. Some good judges of horses, and thoroughly well informed and experienced sportsmen, are so strongly prejudiced against a heated temperature of stabling, and what they think the enervating effects of much clothing, that nothing could persuade them to adopt either of these expedients to make their horses fine. The argument that the horse thrives best when surrounded by heated media, because the temperature of the eastern countries is high, they consider to be an argument of necessity; and, on the contrary, they attribute the superior development of our racers actually to our diminished temperature, in union with our increased ratio of nutriment; arguing that, if we could really always surround them with an uniform increase of temperature, without the additions of extra nutriment and careful breedings, they would degenerate from their present size and form, and fall back into the contracted dimensions of the Arabian and barb. We shall not, however, pursue this line of argument further, but content ourselves with stating some of the advantages and some of the defects of the practice of clipping which led to it.

1200. *A long rough coat*, while it protects the horse from the cold without doors, exposes him to an extra degree of it when shut up in a cool stable after considerable exertion; for it is seldom but that such a horse, however dry he may enter it, will again break out into a sweat; and how hurtful is the cold which is generated by the evaporation occasioned by this state, from the determination of blood it makes to the lungs, &c. let the numberless colds taken, and the fatal pleuritic effects which follow, answer. It has also been well observed by an ingenious writer, that the long coat is further injurious to horses out of condition, inasmuch as "in cold weather, even when the exercise is not such as to excite actual sweating, the insensible perspiration, which is constantly issuing from the extremities of the cutaneous vessels, is condensed among the hair, and appears on the surface like dew," whereby such cold is produced on the skin of the body as cannot fail to be injurious. Clipping here would be a preventive of evil; and unless a horse with a long coat is in such hard condition by generous feeding and full exercise, as either to seldom sweat, and when he does to dry quickly, it is better to clip him than to suffer him to remain rough. On the other hand, it must be allowed, that where a horse is clipped, he certainly becomes more exposed to accidental cold; such as is experienced at a check in hunting, or a long draw on a cold scent, or during rain.

1201. *Clipping owns one very favourable feature*, which is, that it is often found to be a remedy for that most debilitating of all affections, the secondary breakings-out into sweat. Constitutional laxity occasions this in some horses, and want of condition in many more. Wherever this *breaking-out*, as it is called, is common to a horse having a long coat, it would be prudent to try the effect of clipping, in hopes that the stable complaint of "very bad to dry," and a very bad complaint it is, will cease. Nimrod is very decidedly in favour of clipping, that is, when a natural short coat cannot be obtained by other means; but which, he justly observes, does not happen in one case out of a hundred with proper stable management. "With common precautions," he says, "as an extra rug and a hood at exercise, for two or three days after the operation, no danger need be apprehended; and I will take upon myself to say, that a clipped horse will come out once, if not twice, more in a month, and at the same time keep up his flesh better than one with a long thick coat." It must however be admitted, that, having once clipped your horse, you must always do it; and it also effectually destroys that blooming appearance, so much admired by the horse amateur. It likewise deprives horses of much protection, and very particularly so against the thorns, briars, &c. which are constantly met with in hunting; nor is it unlikely that some tender skinned hunters might be led to "balk their leaps" by its effects in this way; particularly they might be led to do it through thick hedges.

1202. *The practice of clipping is thus described by Weal*, and we think it equally just and descriptive: — "Clipping for some horses, I think, is a good custom, and perhaps even necessary. Those of a light grey colour, or indeed greys of any colour, look very well when clipped; but black does not suit this operation so well. If the horse is to be clipped, I think his coat will look much better if it be clipped in December, after it has done growing; but many think it ought to be done early in the season, that his coat may grow a little after it is clipped. I should never advise clipping a horse, unless he has a very rough coat and a strong constitution. For clipping, you must be furnished with three pairs of scissors — one pair straight, one crooked in the shanks, and one crooked in the blade: you must also have thin and fine combs, which you may bend to any crook by holding them before the fire, as they must be crooked for the hollow parts. Before you begin clipping a horse, you must let him be well sweated and dressed to remove all dust, or your scissors will require sharpening every two minutes. The scissors may be sharpened by a piece of whetstone. You may begin clipping at any part of a horse. It will be easiest, however, to work from you; and if you begin at different places, it will rest your arms, for you must be able to hold the scissors and comb any away with a very light hand, as one hair ought not to be left longer than another. Great care is required in finishing off, by degrees, at the mane and tail. The hollows of the head, over the eyes, are very troublesome, and must be done with the points of the comb and scissors, taking very few hairs at a time. It is a good plan to leave the coat thickest under the saddle or collar to prevent it from chafing; and leaving it rather thick on the legs, preserves them from thorns. If the hair is cut too close at the small of the legs, below the knees, it makes them look spindle-shanked. The hair should be either trimmed close at the heels, or left blood fashion, which is done by finishing them off properly; and this observation and experience will soon teach. If the horse refuse to let you clip any particular part, the hair must be singed off. The coat should not be cut closer than about half an inch in length, or the skin will appear through the coat. If a horse be extremely rough, it is advisable to clip him twice in the winter, at the middle of October and the end of November. By this means he will look well all the winter, and be less liable to take cold than if his coat were taken off at once. You must have somebody to pull the skin in places where you cannot get at it in hollow parts, &c. Steel combs and scissors for clipping may be had at Long's, High Holborn." (*Young Groom's Guide*, p. 97.)

1203. *Singeing is sometimes used as a substitute for clipping*, and sometimes both are employed at the same time. We need not inform the reader that singeing, more or less, is a part of the common process of the trimming of almost every horse. We however here allude to it as a means of removing a superabundance of hair generally, which it does more quickly and more evenly than clipping, unless the clipping be performed by a very superior artist. Even then, if only a moderate stripping be the object, the balance is in favour of singeing, with this defect however attached to it, that the crisped ends of the singed hair leave a rusty granulated surface, unpleasing to the eye for some time afterwards.

1204. *The process of singeing is well known.* Grooms effect it by means of gas or a two-wicked candle, which is sufficiently convenient for the usual purposes of circumscribed singeing. The long hairs which present themselves over the whole body extending out beyond the general coat, they singe off by means of lighted straw. But the singeing in lieu of clipping, as well as that in aid of it, is best done by means of a spirit lamp; or, if the horse be unquiet, it may be effected with a twist of tow attached to a stick of a convenient length, and which, being dipped in lamp oil, spirit of turpentine, or spirit of wine, may be applied to the hair. By using a stick instead of a lamp, all danger from the resistance of the horse is avoided; but in general cases, the nose will require twitching, and the eyes to be covered. To do the work neatly, first rough up the hair with a brush in one hand, while the light in the other sets fire to it. Remove the light, and having passed the brush over the singed hair renew the operation until finished.

SECT. IV. *The Winter Management of the Racer.*

1205. *The management of such horses as have periodical respites from labour*, has varied much within the last half century. It was formerly the practice to turn out such horses to grass in the summer, and to a sheltered straw-yard in the winter, where absolute rest and natural food were to repair the damages of over exertion. As long as the mode of life and the occupation of the horse bore any analogy to what he might be supposed to meet with in a state of nature, no fault could be found with this practice: but when racing became a trade, and hunting grew to be little more than an experiment to determine with what rapidity a horse, a dog, a stag, fox, or hare, could race over a portion of country, it then became necessary that we should, to satisfy the fashion of the times, train our horses to an extraordinary degree, not only of speed, but also of strength and endurance. To bring a horse into such a state, quite a different treatment became necessary. The accomplishment of such exertion could only be effected by much artifice and vast expense; consequently it was very desirable, when once acquired, to retain both these properties in full activity. It is a very generally received opinion, that race-horses, after having been turned out, never wholly recover their former speed; and that the hunter, when summered on grass, can seldom if ever be brought into "high form" again before the middle of the hunting season, and even then not in the most blooming condition. Neither is this all, for it is an equally prevalent opinion among observant sportsmen, that horses, which after having been stabled for several years, are then turned out to grass, do not thrive; but, on the contrary, lose their flesh, and become altogether out of condition. Neither are these presumptions at all irreconcilable with sound philosophy; for a long course of artificial treatment, combining as it does an over heated temperature, stimulating food, and warm clothing, with the effects of exertions gradually forced on the animal, until they far exceed in intensity and duration the natural maximum, may and do alter his constitution: for, by introducing new habits, new wants are generated; and, thus altered, the body cannot without much force, and without some injury, be again completely naturalised: on the contrary, that being once fully subjected to this kind of domestication, it will not bear at the will of the owner to be let down and wound up again like a spring. But as it requires much care and much artifice to mould the constitution and organs into a capacity for this unnatural condition and these unnatural exertions, so it appears it is only by a uniform continuance of the same means that such condition, and such exertions, can be with certainty insured when called for by the owners. We cannot therefore wonder that some methods should be tried, by which rest to the body and renovation to the injured limbs may be gained without a permanent loss of former qualities. The opinions just hinted at, it is true, may be doubted by some, but they are strongly insisted on by many more, and, as we believe, are reconcilable with sound philosophy. Lord Jersey's Cobweb, if we recollect right, was favoured with "a run" at grass, and was in consequence never afterwards able to run any where besides; and a similar result has followed the same experiment on others.

1206. *Wintering the racer embraces two separate intentions:* one, to sustain the horse until his services are again required on the next season; the other, to repair the injuries which his constitution may have suffered by his close trainings and severe racing engagements of the last. These being generally terminated by the end of September, or the beginning of October, the horses employed in them are returned either to the home stables of the owner, or to some public training stables, of which there are always a sufficient supply in the vicinity of great sporting towns and popular race-courses. The horses and mares of any large racing establishment which require to be wintered, must be of various ages, various sizes, and possessed of varied qualifications. We will, however, consider them either as aged horses, that is, such as are more than six years old; or as young horses, which, in turf calculation, are under six years old. This apparent discrepancy between the senility of racers and that of all other horses, is to be accounted for only on the consideration, that the exertions made by racers are of a nature to show the wear and tear of their limbs, after they are over six years of age, particularly when they have been brought to post at the time now usual, their work and modes of life having produced effects equal to those seen in other horses when eight years old.

1207. *The racers we allude to, now return home from their summer engagements at five, six, or seven years old;* and, consequently, are such as have been used as summer plate horses, and employed in running long lengths, and under high weights. To fit them for these exertions, it is evident that they must have undergone training proportionably severe; and thence, as may be supposed, they usually return very fine drawn in their carcasses, and many of them very much battered in their feet, and indeed stale in their limbs altogether. For the wintering of these racers, Darvill directs that each be turned into a large box, or, as he has it, into "barn-like sort of stables," where, if they are well attended to, each according to its individual wants (the mares totally apart and distinct from the horses), the whole will daily amend; their carcasses will gradually come down, and their gorged limbs will become fine. Those which are not decidedly lame, stiff, or foot-battered, should be groomed and exercised daily: but those that are otherwise, it will be sufficient to turn wholly up "in the rough," without dressing or exercising; observing, however, to let the limbs be attended to, as where the sinews are much gorged, by blistering, bandaging, and, if necessary, by a mild application on the firing iron. Each of them should also have two doses of mild physic; and once a month after let any one have a single dose or so, if becoming too fresh, or if seen to be gaining flesh too fast. When thus managed, it may be expected that the whole of these horses and mares, however stale they were before, will by March be ready to go again into training. The food of racers thus put by in the rough, as it may be called, must be at once nutritive and cooling. Darvill recommends for such a mixed food, as "of oats a quartern, bran a double handful, ditto of sliced carrots, and the same of the best hay chaff." (See also our own instructions on *Feeding of Horses*, p. 309.) We need hardly observe, that in this winter management the horses and mares must be kept apart, otherwise neither will thrive; the horses particularly will not, if placed within sight, scent, or hearing, of the mares.

1208. *The second or younger class of these summer plate horses* require a treatment variable by circumstances. The youngest of them can hardly be ranked under the turf term of "hearty horses;" on the contrary, they are apt also to have been run off their speed by running short lengths for some of the great stakes at Newmarket, &c.; consequently they have to pass another season ere they are fairly entitled to rank with the second class in treatment. This season of these juveniles is often employed, as Mr. Darvill expresses it, "in a campaign or roving commission; in other words, they are got ready as early in the spring as may be necessary, and are then sent off to run as plate horses at the different meetings on the circuit, in which they have to travel during the summer; when, like those of the first class, they return in autumn to the home stables to winter. These in general are horses of some pretensions, and figure well if they have fair play, that is, if not forced to come out to run too often. Racers of this kind, if they be, in turf language, brought fresh to the post, can most of them come tolerable good lengths under racing weights; and as there are many of them that do not require such close training, and do not run so frequently as the first class we have noted, they generally return fresher also in the autumn to the home stables."

1209. *The nature of the exercise for racers put by for the season* must depend on the state they return in, and the periods of their next engagements. When the weather is very unfavourable, the wintered racers should not go out, particularly such as are tender; the young and the flighty should, however, be well walked about in the yard, which, in severe frosts, may be well littered down with straw. We cannot close this portion of our subject without recommending to any who are concerned in wintering racers, Mr. Darvill's exercising ground, figured and described by him in his excellent work on *Training*, vol. ii. p. 118., which is peculiarly adapted to afford comfort and security to its inmates. In such an one, the terrors of frost are in a great measure banished by sheltering and well littering it down: nor is it without other advantages connected with horse exercisings at large, and to the trainer particularly.

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EXERCISING WINTERED RACERS.

1210. *Physic is very frequently administered to race-horses during their lying by for the winter.* It used to be given directly on their giving up their engagements; but though this practice is still pursued by some, it is not in these days forced on every horse indiscriminately as it was formerly. It is self-evident, that three doses given then, and three more between that time and the end of February, when they are forced on all alike, whether fat or lean, whether weak or hearty, must be injurious to some. An occasional dose we not only admit but recommend, or the want of it will become apparent, by some one or more becoming pursive in wind and obese in frame. Such, if previously stale, can also better stand lowering through the agency of his bowels than that of his limbs. Here also chaff, bran, carrots, &c. come in aid of the cooling, aperient, and lowering, intentions, without injury to the constitution. We have said little on the medical treatment of their gorged limbs, or of any other accidental ailments which may occur, as these will more properly be referred to the head groom, and by him to the veterinary surgeon; or, failing him, advice may be sought for in the author's veterinary works.

Subsect. 1. *Summering the Hunter.*

1211. *We hope that we have already stated sufficient reasons for the convenience and propriety of treating on the indoor and outdoor management of all horses* intended for sporting purposes under one view, from a conviction impressed on us, that, after generalising the subject thus, the necessary variation in the treatment which each variety of horse would demand, would tend materially to illustrate the subject generally. This granted, we beg further to state, that whatever relates to the horse, will find a place in this portion of our work, as whatever relates to the dog appears with the sports of hunting and shooting.

1212. *Of all the subjects which have of late engrossed the attention of the votaries of Diana,* none perhaps has done it in a greater degree than the best method of treating the hunter during his summer vacation. Of course there will remain many strenuous advocates for the olden method of turning the valuable animals, which have carried them gallantly through many a soul-inspiring chase, into his much longed-for pasturage. Others as zealously contend that this is but a seeming boon; and that, if we mean really to befriend him, we shall retain him near us, and confine him within doors, where neither accident can reach him, nor relaxation unnerve him. Unquestionably much may be said on both sides; and here, as in other disputed matters, we shall be prudent in concluding that *in medio tutissimus ibis.* For our own parts, we confess we incline to what is called "the new system," which is somewhat erroneously so named; for, had our limits not been already intrenched on, we could offer several proofs that "summering in the stable" is not by any means a novelty; on the contrary, it had been long before practised by many sportsmen on their hunters, although it had not hitherto occupied much of the public attention. Mr. Apperley, better known as Nimrod, was one of the first writers who warmly advocated it; and it was his representations, with those of a few others who espoused it, that at length brought it forward, but not without much opposition and hostility to it from other sportsmen. It being an imperative part of our duty, as the editor of a didactical work, not only to offer our own opinions and our own experience on each subject, but even more sedulously to glean whatever is worthy of note in the opinions of others on the same, we now proceed to offer the principal arguments which are urged on both sides of this popular question. In following this investigation, it would however be well to premise, that when we adopt the child of a stranger even, we naturally incline to look to the side of its good qualities only, and to be entirely blind to its defects. Others, however, may not view our bantling in the same light; for a certain perverseness in the nature of man, when any object is pressed on him as supereminent, which he thinks to be only equivocally so, forces him usually to retrograde; and he not only views our darling with suspicion, but very probably becomes altogether opposed to it. Such we believe to be the case between the great patrons of indoor summering, and those who favour the system of paddock summering, or otherwise of *general* "turning out."

1213. *Three principal objections* are started by the opposers of the old system of turning hunters out to grass. The first is the risk that is run of injuring their legs by their training exercises, which, as Mr. Apperley justly remarks, must be given at a time when they are pursive and unusually heavy by grass feeding. The second is the great stress which is laid on the sinews when in the act of grazing. The third, and most essential objection to grass summering is, "the destruction of their previous condition, and the certainty that it is hardly possible that it can be restored by the time they are required to go into the field again." To the first objection it has been replied by the outdoor summerist, that no prudent sportsman would put valuable hunters in any other than an upland pasture on a short bite. The second objection, it is alleged, is not very likely to tell much against any other than a very long-legged horse with a very short neck; and even with such an one the evil, it is said, may be obviated by summering him on an undulating surface, where he may take advantage of the inequalities in the ground and graze against the hill. In our opinion the teazing of flies, which keeps horses stamping on the hardened surface, and racing about it to avoid them, is often more injurious to the legs and feet than the flooring of a box, particularly of one that is littered down with rushes, moist turf, wet sand, &c. &c.: nor are the kicks frequently received to be omitted in the account. Mr. Goodwin, whose experience must be considerable, and who is of a similar opinion with ourselves, remarks — "I have invariably observed, where horses are turned out to grass during the dry and hot summer months, that, on bringing them up to be put into stable condition, their feet are in a much worse condition than they were when they went out, dried up, and so hard and brittle, that, on the application of a tool to bring them into a form fit to receive a shoe, the horn breaks like a piece of glass, and all the naturally tough and elastic property is lost, so that it requires some months to remove the bad effects." Surely, from such an authority, this statement ought to have much weight.

1214. *The moulting process*, which may be much influenced by the summer treatment of valuable horses, is a matter of importance also in this discussion. When horses are kept wholly within doors, and in a uniform temperature, their moulting is not only hastened, but the process is rendered much milder to the constitution, because it is not called on to produce a long coat, perhaps not to change the whole of the old one. We know that well groomed stabled horses hardly feel their moult; on the contrary, it is equally notorious that horses which are kept out night and day are debilitated much by it, and often feel the effect for a long time after; as many sportsmen, so mounted, must have felt at the commencement of the season.

1215. *Economy without doubt has much influence on many persons in turning out their horses;* but the calculations of Nimrod, in his *Letters on Condition*, p. 261. show that the actual difference between the expense of summering six horses within doors, and that of summering the same in the fields, is about ten guineas only; a sum certainly not worth noticing, unless the grooming be taken into the account, and which, in a regular hunting establishment, would hardly be a matter of any moment.

1216. *The humanity of turning out the hunter is a popular plea*, and, *a priori*, a forcible one. Mr. Beckford observes, "After a long and tiresome winter, surely the horse deserves some repose. Let him then enjoy his short-lived liberty; and as his feet are the parts which suffer most, turn him out into a soft pasture. Some there are who disapprove of grass, saying, that when a horse is in good order, the turning him out undoes it all again.

It certainly does; yet, at the same time, I believe that no horse can be fresh in his limbs, or will last long, without it. Can standing in a hot stable do him any good? And can hard exercise, particularly in the summer, be of any advantage to him? Is it not soft ground and long rest that will best refresh his limbs, while the night air and morning dews will invigorate his body? Some never physic their hunters, only observing, when they first take them up from grass, to work them gently: some turn out theirs all the year. It is not unusual for such as follow the latter method, to physic their horses at grass; they are then taken up, well fed, and properly exercised, to get them into order; this done, they are turned out for a few hours every day when they are not ridden. The pasture should be dry, and should have little grass; there they will stretch their limbs, cool their bodies, and will take as much exercise as is necessary for them. I have often remarked that, thus treated, they catch fewer colds, have the use of their limbs more freely, and are less liable to lameness than other horses. Another advantage attends this method, which, in the horses you ride yourself, you will allow to be very material: your horse, when once he is in order, will require less strong exercise than grooms generally give their horses; and his mouth, in all probability, will not be the worse for it." There is perhaps but one objection, decidedly unanswerable, to so apparently rational a plan as this, which is, that horses did not even in Mr. Beckford's time go the pace that they now do. Mr. B. undoubtedly would not have turned out his racers thus. And what is hunting as it is at present practised, but racing over immense distances at three-quarters speed? And what can maintain this but a long standard condition, wound up to the mark, and kept there by one uniform artificial treatment? "That horses can exist, sound and well, for fifteen years without grass," says Nimrod, "my own experience has assured me; but the following well-authenticated fact out-Herods Herod. The circumstance is thus related in the *Sporting Magazine*, vol. viii. p. 160.: — 'Lately died, at Barnstaple in Devonshire, a chesnut horse, in his thirty-ninth year. He was well known in many hunts thirty years ago. The gentleman in whose possession he died, bought him at two years old, at which time he took him to house, and rode him summer and winter for between twenty and thirty years, without ever turning him out, and he died from an accident at last.'"

1217. *Count Veltheim's opinion is likewise strongly in favour of stable summering the hunter;* and he assures us that the cavalry of all continental countries, except Turkey, are no longer turned out in the summer. "I hope," he says, "I may be permitted to adduce something from my own experience, having for nearly thirty years past constantly had, at my country seat, from seventy to eighty horses — partly saddle, partly coach, draught, and breeding horses and colts; and that, from predilection for horses, I have always bestowed particular attention upon them. For a long time it has not been customary on well managed estates in this part of the country, to turn horses to grass in summer, or to give them green food in the stable, with the exception of brood mares and their foals." (*Sporting Magazine*, Nov. 1826.)

1218. *Mr. Apperley's method of summering the hunter is thus stated by him:* — "The first step I should take, would be to put the horse into a loose box, if convenient, and by degrees diminish his corn, giving him an hour's walking exercise every morning as usual. I should then give him two doses of physic, which would not only cool his habit of body so as to prevent the danger of inflammatory attacks, but would have that effect on his legs as to enable me to see what injury had been done to them in his work — whether there were any ligamentary enlargements — any injury to the joints or sinews — any callous substances produced by blows — or, in short, any thing going wrong. The clear state of his legs which this treatment will produce, would prevent the possibility of working in the dark, as they will become finer, to use the language of grooms, in three weeks than they would at the expiration of a three months' run at grass in the summer." (*Letters on Condition*, p. 104.) We must not, however, do this ingenious writer the injustice to suppose, that he is so wedded to this system as never to relax from it when occasion requires; on the contrary, we find him observing, "So far from being averse to it, *i. e.* to turning out, I would strongly recommend it under favourable circumstances. In case of having recourse to blistering it is most serviceable; and, after firing, almost necessary: but then they (the hunters) should be turned out only at night, and into a place where there is but little grass, and have two, if not three, feeds of corn a day, but nothing else to eat till they go out, unless it be a few vetches, for four or five days at a time, when they (the vetches) are young and tender in the months of May or June; but these should not be repeated more than three or four times, as they tend to make horses very foul, and when *in pod* are most injurious to them." Here follow other similar remarks, but particularly some valuable instructions on the making of paddocks, for the express purpose of indulging hunters with a run under judicious regulations; and we cannot too strongly recommend them to the notice of the sporting reader, as being equally useful and practicable.

1219. *For grass summering*, as already observed, there however still remain many strong advocates; and we apprehend these seemingly adverse systems will eventually modify themselves so as to meet, by which the evils of both may be avoided, and the benefits of both be retained. Our further limits are so narrowed by what we have already advanced, and that which we have yet to introduce from the pen of Mr. John Lawrence, one of the strongest opposers of stable summering, that we dare not trespass further by additional suggestions of our own; nor, indeed, is there any occasion for us to do so, inasmuch as all that can be said on the other side is comprised in the following quotation:—"Nothing," says Mr. Lawrence, "can come in competition with the soundness of the horse's legs and feet, and the refrigeration, and, as we may say, reanimation, after months of excessive labour and straining, and confinement to a solid, heating, and constipated diet. There is no equal remedy in the case to that best of all coolers and alterants, the spring grass, the purifying elastic external air, and the dew of heaven. What can a horse possibly lose by rational and natural treatment like this, excepting in the mere imagination of his owner? The fineness of his skin is easily recoverable, and with respect to good order (condition), that, one would suppose, must rather consist in renovated vigour and augmented powers of action, than in appearance, or any presumed virtue of custom. The holiday of a month or two out of the twelve, is a kindness we owe to the horse which so dearly earns it, whilst it contributes to lengthen and to render his services of more worth." "The grass of this country has made horses, why not mend them? I am aware we have our gentlemen condition hunters, those *preux chevaliers*, who decide, *sur le champ*, by the imposition of hands, and we formerly had our land-tasters: but the proof of the pudding is in the eating; and what hunter summered abroad, and subsequently trained with judgment, has ever been known to fail in consequence of such practice? Ask the noble Lords Derby and Petre, Mr. Farquharson and Mr. Maberly; I should rather say, ask the majority of the keepers of hunters throughout Britain. In that famous run of forty miles by Mr. Farquharson's hounds in Dorset, about three years since, when out of a field of seventy horses five only were in with the hounds when they ran the fox to earth, these five had been summered abroad? A hunter become very stale in his limbs from work, may be stripped and turned off early and fed abroad, the spring grass not being ready. In the fly season, convenience admitting, he may be sheltered by day, should that appear necessary. A horse, indeed, must have an inclosure to himself, but the geldings and mares used in the field, I apprehend, form a great majority. Suppose the hunter taken up on the first of August, he will have a month to get through his physic, and two months' exercise, since there is seldom much doing in the field until the beginning of November, excepting, perhaps, a little cub hunting; and the commencement of the season frequently proves to be nothing more than good training for the hunter: but even should a severe run then occur, he would not be caught unprepared after two months' constant and regular exercise. Or a hunter turned off in March, and fed, may be taken up at Midsummer. The old notion of a horse losing his 'hard meat' accumulated in the stable, from the purgative effects of the grass, takes no credit here, as invariable experience has shown. So liable is the horse to be stuffed and confined in his intestines while at dry and hard food, that the change appears to be generally beneficial; and I hold that, after such thorough cleansing, two or three months of hard meat will impart equal strength and superior activity and energy, to any length of previous stable keep." We would also recommend to the inquirer on the subject two well written letters by an opponent to the indoor summering, which appear in the *Sporting Magazine*, No. lxxxiv. new series. They will be found argumentative, and yet are written in a spirit of much candour. As regards the arguments of Mr. John Lawrence, that venerable and steady advocate of humanity towards brutes, and one whose "very errors lean to virtue's side," we must dissent from his reasoning, because he appears rather to study what the horse himself would prefer, than that which would most tend to his future good. So shrewd an observer as Mr. Lawrence was on most subjects, we are surprised that he does not take into the account the very different style of our *present hunting*, and, consequently, the equally different style of *horse* now used in the practice of it; which must naturally bespeak a variation in the treatment of the hunter of the present day, to that of the hunter of former days. His very breed, admirable as it is, may be said to be in a measure a forced and artificial one; and it is not therefore to be wondered at, that a treatment, somewhat artificial also, should suit him best.

SUBSECT. 2. *Grassing the Hack.*

1220. *Nothing tends more to renovate the stale limbs of the common hackney, or the bad condition he sometimes falls into, than a quiet run at grass,* particularly if some shelter be afforded him against the midday heats, or the autumnal rains and blasts; which, occurring when the moult is on him, tend to set the coat and bring on colds, surfeits, &c. But even here we must guard the reader not to expect much benefit, if he have to deal with one that has been for many years stabled on hard meat without intermission; for it seldom happens but that such a horse is rendered worse instead of better by the change: a *spurt* with the hounds, as it is sometimes called, is entirely out of the question on this plan.

1221. *Salt marsh turning out is often very beneficial,* particularly when worms, biliary obstructions, surfeits, and general eruptions, show the system at large to be at fault. We have also known soiling in the day in the stable, and turning out to grass at night, of extreme benefit in various eruptive cases bordering on farcy. Exercise can in this case be given, and thus the horse made useful at the same time; but very high condition in appearance and endurance, under either fast or long continued travel, is not to be expected from horses in general under this plan.

SECT. V. *Horse-shoeing.*

1222. *Horse-shoeing* was not practised for some centuries after the horse himself was in very general use. Nor were hoof protectors essentially necessary, until paved tracts and hard roads had rendered the abrasion of the horn of the feet much greater than its renovation by growth. We have already proved that asses were for a long period the principal beasts of burden used by the early races of man. Their safety in progression, particularly over rocky and precipitous countries, with the extreme firmness and tenacity of their hoofs, gave them a decided superiority over the horse for the use of the eastern aboriginal tribes. The mounting of the horse, ass, and mule, which led to the more extended intercourse of the inhabitants of distant localities with each other by means of public roads, at length forced on them the invention of some defence for the feet of their horses, asses, and mules.

1223. *The first foot defence of the horse* seems to have been copied from that worn by his master. Man first wore sandals, and sandals appear also to have formed the first defence of the hoof of the horse. These early foot protectors seem to have been made either of matting, rope, or leather; and were not at first in constant, but only in occasional, use. The addition of the metal rim to the sandal, which was a much later invention, must have formed a very important improvement. Xenophon, who commanded the cavalry of the Grecian armies about five hundred years before Christ, and who wrote expressly on the subject of horses, mentions such a defence for their feet in use in his time. In Columella and Varro, who were subsequent writers, we have additional evidence of this. Two hundred years after these, Apsyrtus, a famous veterinary writer, who lived in the reign of Constantine, gives express directions for the treatment of bruises and galls of the shank, brought on by the thongs or fastenings of the *foot shackles* (*hippopedes*). At later periods these shackles were strengthened by plates of metal, which, in general cases, were of iron; but, on occasions of great magnificence, appear to have been sometimes made of silver, and, as it is said, occasionally of gold: such, according to Pliny, were those used by the mules of Poppæa: —

> "Et superum animum in gravi derelinquere cæno,
> Ferream ut soleam tenaci in voragine mula." — *Catullus.*

1224. *At length the inapt and injurious fastening of thongs, &c.* gave place to the present method of shoeing with iron plates attached to the feet by nails; but it may be considered somewhat remarkable, that this improvement did not take place until comparatively a late period. Vegetius, who lived in the reign of Valentinian the Third, though he accurately enumerates every thing connected with an army forge, makes no mention of any apparatus for shoeing horses, nor any artificers for that purpose. And from Beckman we learn, that the first account of the modern horse-shoe that can be relied on, is gathered from an account of the furniture of the Emperor Leo, of Constantinople — *Ferra lunatica cum clavis eorum.* The use of shoes of this kind was, however, very confined at this period; nor did, perhaps, any horse continue to wear such altogether, but now and then only; nor was it until long after their introduction that the use of them became general. Père Daniel, in his *Histoire de France*, of the ninth century, informs us that the horses of his country were only shod in times of frost, or on very particular occasions. The art of horse-shoeing, however, even then appears to have been considered as a very important matter; for we are informed, that the reigning monarch appointed Henry de Ferrers, a favourite, who came over with him, superintendent of the shoers; and hence the future earls of Ferrers, his descendants, have always borne six horse-shoes in the quartering of their arms. It may be observed that the practice of horse-shoeing in England advanced with the continental farriery for a considerable period; but, for the last half century, it has taken its own ground, and has certainly been more varied and improved in this country than in any other.

1225. *The improved seated shoe*, first brought prominently forward by Osmer (*fig.* 185.), next adopted by Mr. Clarke of Edinburgh, and then taken up by Mr. Morecroft, is that which has been much employed in the practice of the best veterinarians, and extends now to most good forges. We have represented this shoe in two halves (*a* and *b*). The half *a* presents its *ground surface;* and it will be seen that its nail-holes extend no further towards the heels than is necessary, to keep the shoe fast. The half *b* presents the *foot* surface, which is bevelled off, but not entirely to the heels, that there may be no invitation to the heels to contract, from an inward inclination of the quarters of the shoe. The nail holes of the toe portion are carried around its whole circumference, that portion of the horn being best able to bear the shoe pressure without producing contraction. Of course this shoe may be modified in various ways: it may be made wider or narrower, heavier or lighter, or it may be steeled to meet unusual wear; but the principles are probably adapted

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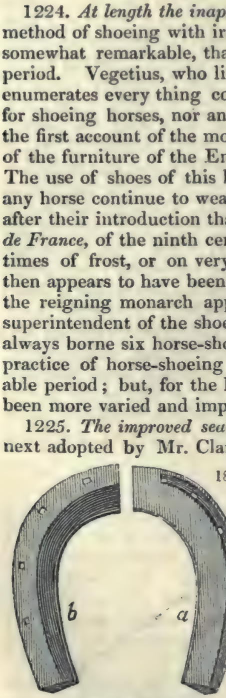

SEATED HORSE-SHOE.

to the protection of most healthy feet; and no one that ever was, or ever will be, formed, will be applicable to every foot. A standard pattern horse-shoe is therefore an *ignis fatuus*, long sought for but never found, though much ingenuity and research have been wasted in looking for it. All horse-shoeing, like the iron they are forged from, must bend to circumstances; as the form of the foot, the place of wear from the direction of the limbs, or from peculiarities in the method of progression, &c. &c. Even that which is said to be an invariable principle, "that the shoe must be made to the foot, and not the foot to the shoe," is only so in part. For in a diseased foot, or one getting out of shape by injudicious shoeing, the shoe must adapt itself only in a degree to the foot; for frequently, by a slight deviation from the general principle at each shoeing, we shall at last bring back the ill shaped foot, to allow of a well shaped shoe to be in future made use of. A well made "seated shoe" should present a "web" of uniform thickness throughout, and of a width sufficient to protect the foot; and both this and the thickness should be regulated by the size of the horse, the nature of his work, &c.; but it should in all cases be sufficient to obviate the effects of occasional hard wear, or the accidental neglect of renewing. To an animal so strong as the horse, the additional weight of one or two ounces to each shoe is very inconsiderable; but this addition to the support and protection of the foot is very material in many cases. Had the majority of horses perfectly healthy well formed feet, and had the greater numbers of them only moderate work on level roads to perform, then a shoe altogether lighter in weight, and less in frame, might be sufficient. But it is to be considered, that there are very few feet met with but what have undergone some unfavourable alteration, which makes them more or less sensible to the effects of concussion; add to which, a great proportion of the horses in general use are worked, if not continually, at least occasionally, very hard, and often on very bad roads. It is, therefore, under these circumstances that we would recommend rather more thickness as well as width than is sometimes employed for the web; particularly where there is any tenderness in the feet, and still more so where corns exist. As some guide also, the web should be so thick, that, when placed on the pared foot, the pad of the frog should be just on a level with the ground surface of the shoe; by which it will be sufficiently protected, and yet meet with that degree of pressure which Mr. Coleman thinks so necessary to the healthy functions of the foot.

1226. *To recommend that the heels should stand less wide than they are usually made to do*, is so greatly in opposition to the directions commonly given, and to the ideas entertained on the subject, that we should lay ourselves open to animadversion by so doing; but whoever will attentively examine a shoe *well set off* at the heels, as it is termed, will find often only one-third of the surface, and sometimes hardly that, protecting the heels, the remainder projecting beyond the crust, and serving no purposes but those of a shelf to lodge the dirt on; a convenient clip for another horse to step on, or a more ready hold for the shoe to be forced off in clayey grounds. We, on the contrary, maintain, that if the shoe heels stand wide enough to allow for the growth of the foot, and that such growth shall not draw the points within the crust, it is sufficient. The length also of the heels of the shoe should be regulated by the nature of the work and the form of the foot: where the heels are round, and overhang at all, the shoe should be of sufficient length to receive and guard them; but where hunting is followed in a clayey country, any extra length is dangerous, as frequently causing horses to force off the shoe, by lodging the hind toe on the projecting heel. The ground surface of the shoe should be critically flat; nor should any shoe be put on a foot that has not been first tried on a plane iron kept for that purpose; which practice, were it more generally pursued, would prevent the evil of applying a thick club-heeled shoe to the weakest part of the foot, as is too often done, by a refinement of absurdity and carelessness.

1227. *The ground surface of the shoe being fullered*, is then punched with either five nails on the outer, and four nails on the inner side, or with four on the outer and three on the inner, according to the size and weight of the shoe and tread of the animal. This disproportion is occasioned by the greater thickness and strength of the outer side, which will thus admit of the principal attachment to it; and because, not only is the inside the thinnest and weakest. but expansion probably is also greatest there; at least we are warranted in so concluding, as we know contraction principally occurs there, and that its greater weakness is the cause of its becoming the seat of corns. It is therefore of consequence, that we put as few nails as possible into the inner side of the hoof, and particularly that what are put should not approach the heel, but reach only to the centre of the wall; the nearer the last nail-hole is to the toe, provided the shoe be firm, the more room is left for such a foot to expand: indeed, there are strenuous advocates *for omitting all inside nailing*, as will be again noticed. The foot surface of the seated shoe presents a bevelled portion over two-thirds of its extent, except at the heels, where it is partially plane on both surfaces, which plane portion is intended to receive the heels. This bevel, or seating, allows for the descent of the sole, which certainly does take place in a slight degree; but principally it favours the ejection of stones, &c. which, lodging there, might injuriously press on the horny sole. The seated shoe is certainly the only one which can be worn with safety by the flat-footed horse; and the shoe itself is also rendered lighter by seating, without detracting from its strength. An outward seating, according to the plan of M. St. Bel and some later practitioners, presents, at first sight, an appearance of following nature, and of giving a surer support by a more pointed pressure downwards, with an equally stable support upwards; and if we could make shoes at once ductile and durable, this would, for all well formed feet, be an excellent mode; but, unfortunately, this outer rim soon wears down, and the expectations raised, relative to its utility, are not fulfilled; and, what is worse, the shoe must either be rendered improperly thick, or this loss of lower rim will weaken it.

1228. *The preparation of the foot for the shoe* is a subject of much moment. It is of course commenced by pulling off one old shoe; for it is better never to take more off at once, otherwise the horse is apt to break away the edges of the horn while standing so long bare on the rough ground or pavement. In removing the old shoes, great care is necessary that the clenches be first thoroughly raised, so that the crust may not be torn, or portions of the nails left within the horn. This being done, the rough edges of the crust should be rasped, which prevents its breaking away when set down, and also detects any stubs of old nails left behind, and removes loose portions that would hold gravel, either of which might turn the nail that may chance to be introduced there. The next process is to thoroughly pare the sole throughout, until it can be what is called "thumbed," *i. e.* felt to spring by a forcible pressure of the thumb. In this paring, the natural form of the arch of the sole should be as closely imitated as possible, and particular care taken that no part of it be left to protrude beyond the line of the crust; on the contrary, its concavity ought to commence immediately from the line of separation between the crust and sole, but not from the edge of the crust, as we have seen done. The whole thickness of the crust, be it more or less, ought to be left perfectly flat for the bearing of the shoe. Habit, and a correct eye, can detect any inequalities in this surface, without a momentary application of the heated shoe to try the bearing parts as is usually done; and which, if the shoe be also previously tried with a plane iron, may very well be avoided. Nevertheless, the outcry raised against this practice is, in a great measure, unnecessary; for, unless the shoe he very hot, and held on too long, no harm probably results from its application. In common rough shoeing, also, this error is infinitely less than the application of the unequal pressure which it is intended to prevent would prove. The portion of sole, between the bars and quarters, should be always pared out; and, if properly done, is the surest preventive against corns. The heels should be an object of great attention, and ought to be carefully reduced to the general level of position, which it may be supposed the hoof was originally placed in, and which may always be judged of by observing the line of the pasterns with it. It is, we repeat, of great consequence that the inner heel be not reduced beyond the outer, for its natural weakness gives it a tendency to increased wear: instead, therefore, of paring both equally, in case the outer is the highest, pare only the outer; and, moreover, set the shoe very lightly on the inner heel. A want of attention to this circumstance of inequality in the heels, lays the foundation of corns and splints.

1229. *Paring of the frog is an important process.* We indeed think it so much so, that we again introduce *fig.* 135. from p. 266. on purpose that we may more readily give force to our directions how to pare the foot preparatory to shoeing. Formerly the frog (*b*), and the inflections or returns of the hard horn of the hoof, seen at *c e*, were the first objects of attack by means of the butteries of the shoer. The slightest knowledge of mechanics must convince any one, not either stupidly or determinedly blind, that they (the horny returns, *c e*), are purposely thus inflected, as resisting props to support the internal parts of the foot from pressure, by the contraction of the inferior and lateral portions of the hoof. It is therefore under these views that we object, strongly object, to their removal; and, on the contrary, recommend that the sole, crust, and heels, be first attended to, and then a mistake in paring the frog is less likely to arise; for it may be regarded as a general rule, that, when the frog is a very little beyond the level of the returns of the heels and the crust, it is as large as it ever ought to be; and the heels of the shoe will raise it sufficiently for protection against too much wear, but will not elevate it beyond a proper share of pressure. Smiths are too apt to be impressed with an idea of the necessity of "opening the heels;" which, with them, is nothing more than cutting away the edges of the flexions of the hoof, where they turn to form the horny heels; the same being then continued under the names of bars or binders. In contracted feet these flexions do sometimes press inwards, and actually squeeze the frog; from observing which, smiths cut away the extreme edges of the pressing part; and as, in such cases, this practice is observed to give some present relief, so it has become a principle in their minds that it is a salutary process to every foot; and leaving, as it does, a momentary appearance of widened heel, it is not possible to convince them but that a real enlargement of the posterior part of the foot is the consequence. It is hardly necessary to remark, that this practice is founded in the grossest ignorance; and that, instead of eventually opening the heels, it tends permanently to contract them, by weakening the bars; the practice should therefore, in every instance, be forbidden, except as before mentioned, in cases where the inflected heels contract, or 'wire in,' so much as actually to press the frog between the horny edges, when it is justifiable to relieve the immediate pressure by cutting out the binding portions of the inflexions; but it must not be forgotten in this case, that the remedy is only palliative, and more permanent means should be adopted for the healthy expansion of the parts. Although the returns of the heels are only to be meddled with in such cases, and the continuation of the horny inflexion or bars in no case, it is yet otherwise with the intermediate portion of horn which fills up the angle: this should be moderately pared out, in every instance, for it is the seat of corns; and if accidental pressure alight and remain there, a corn is the inevitable consequence. If even a small particle of gravel should lodge here, each step forces it further; and, as soon as it has reached the sensible parts, inflammation and suppuration ensue.

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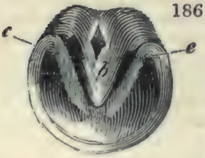


OPEN HOOF.

Subsect. 1. *The principal Varieties of Horse-shoes.*

1230. *As under our present methods of working horses*, deterioration in their limbs generally, but in their feet particularly, is almost an inevitable consequence, so, much of this wear is attributed to the shoes, which we are forced to put on them to prevent abrasion. Whether the pace itself, and the duration of it, is not also an equally efficient cause, let the number of slow ridden hacks and moderately driven carriage-horses, flanked by the thousands of agricultural horses which reach old age without lameness, testify. But as our habits of riding and driving are now fixed, and as the animals themselves would be apt to rebel did we not allow them to "go along," we are ever and anon starting a new principle of shoeing, that, besides being protective, is alleged to be also preventive, of the tendency to contraction attributed to shoeing at large, some even pretend to be curative. Our limits will only allow us to glance at the principal varieties of horse-shoes, and the methods of applying them which have engaged public attention. That the foot of an unshod horse expands as soon as it is placed on the ground, and has received its share of the weight of the body might, *a priori*, be expected, and has been, moreover, proved by experiment. But what happens when the horse has each foot bound within a solid rim of iron firmly nailed around the horny crust? The answer is plain; the expansion being thus prevented, occasions reaction within, and turgescence of the blood-vessels, by which heat is evolved, and the horny segment so heated contracts its dimensions, and thus presses painfully on the sensitive organ. Much tenderness in action ensues, and ultimately disorganisation in a greater or less degree is the consequence. To form a horse-shoe, therefore, that while it effectually protects the foot from abrasion shall leave it in full possession of its natural elasticity and expansive properties when ground placed, has been the aim of many eminent veterinarians and many ingenious smiths.

1231. *Lafosse's shoe* was much lauded for this purpose, by its being framed with short and full heels. Mr. Coleman's ingenuity supplied artificial *frog pressure*, which promised much, and, without doubt, would have performed more, could it at the same time have unbound the fettered sides, fixed as they were by side nailing of an unyielding shoe.

1232. *Mr. Bracy Clark's paratrite shoe* certainly appeared to strike at the root of the evil, but the blow was too feeble to cope with the absolute necessity there appears, that an effective shoe for the foot must be so attached, as to unite these seeming discordant substances or horn and iron into one solid mass. To effect this, and yet to allow the healthy expansion of the foot by ground pressure, this ingenious veterinarian brought forward a shoe, which, being hinged at the toe, allowed at once of firm side nailing, while it retained the property of expanding with the downward pressure. Ingenious as the device might be said to be, it nevertheless presented two considerable difficulties in constructing it: first, that of making a hinge at once strong and retentive during the usual period of wearing a set of shoes. The second difficulty arises from the tendency, which the expansive nature of the shoe has to tear away the horn hold which the side nailing embraces. The hinged shoe is, however, yet advocated, and, we believe, even yet used, but in a very limited degree. It must, however, be considered inferior to the plan of shoe of Mr. Rogers, because it weakens the necessary connection between the two limbs of the shoe.

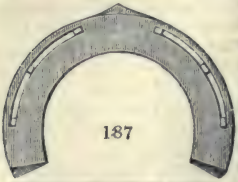
1233. *Mr. Goodwin's curve-toed shoe, with the French method of nailing*, although it has many advocates, is yet thought, from the lateral pressure of the nails, to injure the sensible laminæ; and also by the necessity there exists of cutting away the horn of the toe, that it predisposes the internal organisation to effect a displacement of the coffin bone: we, however, have our doubts as to any such results from the use of it.

1234. *The shoe of Mr. Rogers, of Exeter*, has been strongly recommended by Mr. Apperley, who considers it as the most likely of any shoe he ever met with to counteract the effects of an inflexible substance nailed to a flexible organ, on which great weight is to be placed. We ourselves also knew Mr. Rogers well as a domesticated pupil under us, and we can bear testimony to his ingenuity as a veterinary surgeon, and his worth as a man; but we fear that the processes necessary in the making of this shoe will prevent any extensive use of it, otherwise the device of the hinge is an excellent one.

1235. *One-sided nailing of the shoe* has been strongly advocated by Mr. James Turner, and certainly this method, even after a trial of some years, retains many partisans in its favour. In its application it entirely liberates the inner quarter of the hoof, at which part contraction usually commences and spends its greatest mischief. Our limits prevent our prosecuting the subject further, interesting as it is; but we would recommend the inquirer to visit Mr. Turner's forge, and also to *The Veterinarian*, No. xliv. new series, where a full account of its effects are detailed by one who practises it professionally, and, apparently, from a full conviction of its advantageous properties. A recent publication (*Miles on the Horse's Foot*) strongly advocates Mr. Turner's plan of nailing on one side of the foot only. This work, published by Messrs. Longman and Co., is illustrated by highly-finished plates, and is one we strongly recommend to the perusal of the reader.

SUBSECT. 2. *The Shoeing of Race Horses.*

1236. *Race-horses train, travel, and exercise, in the common seated shoe*; but for them it is made somewhat narrower, and also lighter in substance than that to be figured and described as proper for hunters and hacks. For race-horses which have had their feet battered about, Mr. Darvill advocates the use of a stout clip to the toe of three-quarter shoes, and recommends that four nails be put into each side of the shoe, but that the hinder nail holes be placed farther back than is usually done in shoeing. We presume we need not state that this method refers principally to horses having weak feet, being out of training, and put by for the season, after the manner already described. Of course we would recommend that any departure from the usual plan on which a race-horse has been heretofore shod should be narrowly watched, or much mischief may be done where it was remedially intended. Short shoes, however, certainly suit battered feet very well, particularly those that have much injured them by road travelling from one racing locality to others far distant. It is here that the advantages of the caravan for the removal of racers is conspicuous. The three-quarter shoe may be either fullered or stamped, and may be made either with or without a clip at the toe, and with either three or four nails on each side of the shoe, but which nails should not approach closer to the heels than is absolutely necessary to keep the shoes on (*fig.* 187.). Every third, or at farthest every fourth, week (depending much on the growth and strength of the feet) we would recommend that the shoe should be removed, and also that the horny sole of the feet be properly cleaned out; and, if necessary, that the toes be shortened also.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THREE-QUARTER SHOE OF DARVILL.

1237. *In the plating of race-horses,* much caution is required in the selection of a proper smith. In the first place, the process of plating differs somewhat from common shoeing, and in the next, it is to be performed on horses of great value, and often under engagements on which immense sums are dependent. Some country smiths shoe horses very well; but in general cases they have but little experience in *plating* race-horses; and, what is worse, it frequently happens they have, in such cases, the most difficult feet to put plates upon. It is however fortunate, that such shoeing smiths as live in a racing neighbourhood, are commonly *aufait* at this business, and are in general not above receiving instructions and hints from the training grooms to be careful in fitting the plates, preserving the feet, and driving the nails in such a manner as to meet any peculiarity of structure or failing in the hoof of the horse to be shod. Thus experienced, and thus watched and cautioned, it usually happens that all goes on well; but as accidents will occur even in these stables, it may be advisable, as Mr. Darviil observes, "to plate such horses as may have good sound feet, and that are standing in stables close to the running ground, the evening prior to their running, after their coming in from exercise." And to make the surety double, it is common to walk the horses on the morning of running to some turf, where, in a short canter, it may be seen whether his plates are settled well to his feet or not. If the horse is observed by the groom to go stiff or short, and if the groom should be of opinion that this is occasioned by any thing wrong about either of the feet of the horse, there will yet be time to remove the plates, and to give the nails less hold, or a different direction. The foot may be afterwards placed in a water-boot, and thus treated he may be brought to post, and run without much danger of being lamed, particularly if the ground be moderately moist and yielding.

1238. *Racing plates for the feet are of two kinds — the full and the three-quarter.* The full plates for the feet (*fig.* 188.) are marked 1 for the fore-foot, and 2 for the hind-foot. That for the hind-foot, it may be observed, is clipped, to give it a firmer hold on the ground. The full plates are in general use wherever the horn of the hoof is strong and healthy enough to bear them. Each shoe is usually pierced with eight nail holes. The three-quarter plate (*fig.* 187.) is usually pierced with six nail holes only, and is used for horses which either have naturally weak feet, or for such feet as have been much battered about, as is often the case with horses engaged in country running. In these cases it is evident "the plate must not be put on nearer the end of the horse's heels than there is sound horn for it to rest upon; and that the hoof hold be sufficiently strong to give the two last nails a secure bearing, so that the plate may not spring at the heels when the horse is running." In the forging of either of these varieties of plating shoes, it is very necessary that reference be had to the size and powers of the horse that is to wear them. For one of a medium size and weight, the breadth of the plate need not exceed three and a half eighths of an inch; but these dimensions may be somewhat increased for a tall and heavy horse.

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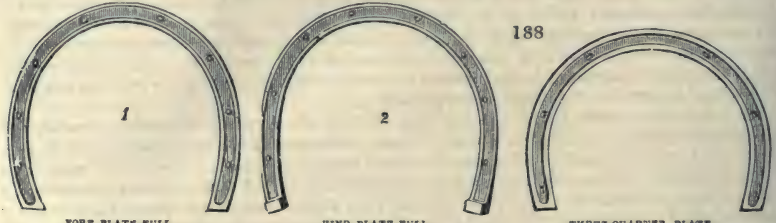


FORE PLATE FULL. HIND PLATE FULL. THREE-QUARTER PLATE.

The fullering should be made in the middle of the plate, that it may not weaken the shoe (*fig.*188.). The plate being thus narrow, there is little fear of its pressing injuriously on the sole; care, however, should be taken that its edges do not extend beyond the crust of the hoof, or the projecting portion may be trodden on by a fidgetty horse, and the shoe be thus subjected to be torn off when saddling, or at the moment of starting.

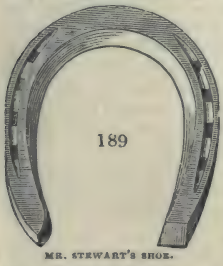
1239. *The hind plates may be made much like the fore ones,* but they may be brought rather more home to the heels, as the heels of the hind-feet are mostly in a good state. Darvill observes that, " If the horse is a long striding one, and a free runner, he will be likely to be rather a difficult one at his turns; and although it may be bad judgment to run such a horse over a small round course, yet, if such should happen, it may be advisable for the safety of both the rider and the horse to give the latter some hold of the ground, by turning up the heels of his hind plates. But with a horse of the middle size, that has a short but quick stride, gives his race kindly, and is handy at his turns, there may be no occasion to turn up the plates. (Vol. i. p. 441.)

1240. *Caravans, as already hinted at,* are now used to convey such racers from place to place as are likely to injure their feet, or otherwise suffer by travelling on hard roads; and the practice cannot be too much applauded, whether we consider the prudence or the humanity of the plan.

Subsect. 3. *The Shoes worn by Hunters and Hacks.*

1241. *The common shoe usually worn by hunters and hacks is the seated shoe,* figured and described at p. 350. As adapted to the hunter, the form, the size, the substance, and number of nail holes of the shoe worn, may with propriety vary according to the size and weight of the horse, his method of shoe wearing, and the nature of the ground usually passed over, &c. &c. In all cases it should, however, be well fastened on; that is, firmly placed without hoof binding. The heels of the hunting shoe are by many sportsmen preferred to be rather short than full home; and not without some reason, for many horses are otherwise apt in their galloping to tear the shoe off, to the injury of the horse, and the certain loss of the sport. As an additional prevention also, the shoe of the hinder foot may be set rather within the crust at the toe; which will not only prove useful in this respect, but will likewise materially lessen the danger of cutting by an overreach, from the toe of the shoe at least.

1242. *On overreaching,* Mr. Stewart, of Glasgow, observes, "that it takes place most frequently at the heel, exactly where the skin connects itself with the hoof." He very justly remarks also, that this accident seldom happens except the pace is fast, and likewise that it is more likely to occur to short-backed than to long-backed horses, for obvious reasons. The wound made is a semicircular one, and the skin is raised up like a flap, and folds backwards and downwards, never upward or forward. Mr. Stewart considers it as a great mistake to suppose that this cut is inflicted by the toe of the shoe. We had also long ago taught the same as a general rule, but not an invariable one, as we have so lately stated. The cut certainly is more frequently inflicted by the inner circumference of the hind shoe, and it is done also as it is withdrawn from its ground placing, between or beside the hind feet, which does the mischief; and Mr. Stewart, without doubt, is likewise right when he says, that "sometimes the incised portion is actually cut out." He also presents us with a representation of a hind shoe (*fig.* 189.), from which the inner circumference is forged or filed away, which is well calculated to prevent the evils of this species of over-reaching. Mr. Apperley likewise strengthens Mr. Stewart's account, by informing us, that he has ever since had the inside edge of the hind shoe what the blacksmiths call "bevelled," or rounded off, and has never had an overreach since. Nevertheless, we are sorry to be forced to observe, to our cost, that every overreach is not thus made, but that it takes place sometimes on the back sinew.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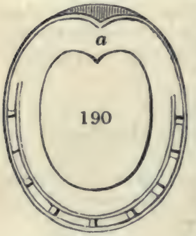
Mr. Stewart's shoe.

1243. *The cast iron concave-seated shoe of Mr. Goodwin* is also worn by many hunters. The owners of these horses being impressed with an opinion that its concave ground surface will act in the same manner with the calkin or catch, and to a certain degree they are calculated to do so. At all events less evil is likely to result from their use than from an elevated catch to the outer heel of the shoe; of which catch, we must again remark, that unless it be applied to both heels of the shoe, it must by its uneven pressure be apt to lame the horse; and even when worn double is still injurious by its increased pressure on the posterior walls of the hoof, and consequently is only admissible in very frosty weather, or over soft and yielding ground. Our opinion of Mr. Goodwin's method of forging the horse-shoe has already been given; but although ourselves unfavourable to it, for the reasons assigned, the reader should at the same time be made aware, that it has the sanction of several sportsmen we know, who recommend it as calculated to obviate the necessity of a catch to any shoe. It certainly is particularly applicable to riding on the chalk hills, where something more than the plain surface of the shoe is wanting to prevent the danger of the feet sliding or slipping.

1244. *The shoes for the hind feet of most horses* are forged somewhat different to the fore-shoes, by being made a little squarer at the toe for about an inch; to which squareness the hoof also is to be adapted by rasping it slightly; avoiding, however, to do it injuriously. By this mode, a steady point of bearing is afforded to the feet of hunters in the great exertions they are often called upon to make in galloping, leaping, &c. The hinder shoes, when thus formed, are likewise less liable to interfere with the fore shoes by clicking; when, however, horses either click or overreach very much, it is also common, not only to square but also to shorten the toes of the hinder shoes, or otherwise to set these shoes a little back, by which the hoof meets the middle of the fore shoe instead of the shoe itself; and the unpleasant noise of the stroke or click is avoided.

1245. *The bar shoe* (*fig.* 190.), as here seen, is tongued (*a*), but which is proper only where very bad thrushes exist, as to be presently noticed. It is an important and well-known variety of horse-shoe; and, as such, it is to be regretted that so much prejudice prevails against the use of it, which can only arise from its supposed unsightly appearance, as betokening unsoundness. As a defence to weak thin feet it is invaluable, as it removes a part of the pressure from the heels and quarters, which can ill bear it, to the frog, which can well bear it. In fact, it may be so forged as that it shall effectually protect any weak part of the under surface of the hoof by a projection; or, otherwise, by an entire supernumerary cross bar. By shifting the pressure from the unsound to the sound parts, and consequently stronger portions, great mischief is often prevented by the bar shoe. When the frog is altogether undermined by ulceration, and the ravages of thrush render the foot tender in the extreme, by widening and tongueing the heel portion of the bar, as seen at *a*, proper dressings can be applied and retained, and protection also be afforded. When a corn exists, and the short heeled shoe fails to relieve, a bar shoe should be tried, being so made as while it protects, it yet *lies off* the corn itself, which is the grand desideratum with such feet.



BAR SHOE.

1246. *Frost shoes* (*a*, *fig.* 191.) have the heels turned up, and the practice of frost shoeing is a very necessary one, and unavoidable; but the calkins, from the extreme hardness of the ground, are apt to be very soon worn down, and consequently to become useless. To remedy this, many inventions have been tried; one of the best is that of Dr. Moore, in which the frost clip is made distinct and moveable, by means of a female screw (*b*) worked in it, to which a knob, or wedge (*c*), and male screw (*d*) are adapted; a key (*e*) being used for fixing or removing it. One of the principal difficulties in forging efficient shoes to protect the feet, and prevent them from slipping and sliding on the ground in frosty weather, is in tempering the iron from which they are made. If it be made too soft, they wear smooth immediately: on the contrary, if too hard, they crack or break. When our own journeys were not long, we managed thus: instead of removing the shoe after it had been roughed in the common way, we made the smith file the calkins every other day.

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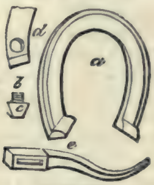
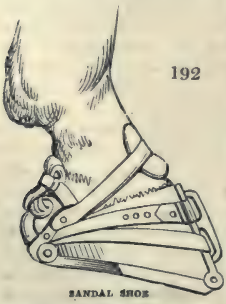


FROST SHOE.

1247. *The sandal shoe* (*fig.* 192.) is a very useful invention for the safety of the feet of horses from the effects of shoe casting. The best is that of Mr. Percival, which consists of two parts — the iron shoe of the usual form, and the webbing straps which fasten it on. It is very portable and light, its weight not exceeding half a pound, at the same time it is strong enough to afford sufficient protection to the foot until a shoeing smith can be met with. This ingenious pedal protection is sold by Tate, a respectable saddler in Park-street, Grosvenor-square. Its price is half a guinea, and it is requisite that the size of the foot be sent with the order. With all the danger of travelling a good horse over stony ground, with one foot entirely bare, to his certain, perhaps irreparable, injury, how few will trouble themselves with this useful preventive against such danger: surely the beast that carries the sportsman well deserves this forethought. However, when the mischief is done, it is too late to repent, and our next effort should be directed to find some substitute of defence. We once advised some double sacking to be placed under the foot, and next a single piece, of larger size, under that: this being drawn round the foot and fastened, enabled the horse to reach home in safety.



SANDAL SHOE

1248. *The sock and leathern sole shoe* for bruised and tender footed horses, manufactured by Woodin, of Regent's-park-place, is also an invention of merit; and if it will actually remain on the foot during the travel from place to place, and we are not informed to the contrary, it well deserves every encouragement. The sock, which is of hair, is placed as a bed on the sole, over which is fastened a leathern covering, so as to exclude all gravel, and to prevent abrasion of the foot.

CHAP. IV.

HORSE RACING AS A SPECULATION.

1249. *The theory and practice of racing* involves various other considerations besides the mere galloping over the turf, and the methods of determining the merits of the contest. The several localities where this sport is pursued, the value of the prizes, the chances by which the bettors are governed, and the laws by which the whole of the turf practice is regulated, are all topics of interest and importance in this noble sport.

Sect. I. *A few Points of Information necessary to every Principal of a Racing Establishment.*

1250. *In our opinion*, nothing will tend so much to prevent that total loss of character with which racing is threatened, as that the influential supporters of it should simultaneously join in attempting the detection of fraud, and in the fearless and summary punishment of malpractices, whether perpetrated by prince or peasant. To enable them to do this effectively, it is essentially necessary that their own knowledge of racing in all its branches should be as extensive and as minute as that of the *blacklegs* themselves. Such knowledge on their parts is the more necessary, when it is considered that the taint is apt in too many cases to extend to the operatives in their own stables. Every one at all concerned in racing matters, but particularly the great owners of large racing establishments, should fully understand the laws and customs which regulate the practice of the sport, local as well as general. Both the *Racing Calendar* and the *Stud Book* should be at the finger ends of the turfite. Cadwalleder himself should not be better informed on the lineal descent of his ancestors, than the racing amateur on that of every running horse of repute. His knowledge of horses generally, and of the race-horse particularly, should be critical; indeed his eye should be familiarised to *take in the points of the winning form at a glance;* and they really are comprised in a few peculiarities of conformation. It is not in height, for the greyhound of less than thirty inches, and the hare of twelve, can run as fast; but it is in the perfect mechanism of all the parts as they relate to each other, and also as they constitute a whole, of numerous points and angles, that the winning form consists. He should perfectly understand the principles of training, as well as the practice; his scientific knowledge of it being the more necessary to him, because it is only known dogmatically by the stable attendants. He should also be able to pry deeply into human nature, as the only guard against fraud in those in his employ. No villain is always on his guard, and the first act of roguery almost necessarily bespeaks a confederate, and of course an evil with extensive ramifications. In the breeding of stock, his judgment should be based on principles, and extended by critical observation. Here also he must in all important matters be himself present; or at least if he act by proxy, let it be by some intelligent friend, or his very breed may be misbegotten, or otherwise marred in the person of the sire or dam, so extensive and all pervading are the arts of the *honourable fraternity of legs.* To be at once the kind and liberal patron of fidelity and real merit in the person of his stable attendants, is so common with the "high-blooded" gentleman, that we hardly need hint at the necessity of it: but we do not fear asserting, that sometimes it requires time even in the best disposed *young* minds, to learn how to draw a just line between the extremes of too much stable familiarity and those of haughty reserve or dictatorial commands. The kindness of manner of the gentleman of birth and education can always convert the request into ready obedience, even from the most sullen; while the "Damme sirrah, do ye hear," if obeyed, is only half done, and that half ungraciously; and we need not dwell on the value of those services which are performed under the sense of protection, and the feeling of intended kindness. The professed turfite should not only well understand the training of horses, but should likewise accurately inform himself of the result of all the trials which succeed thereto; by which he will be enabled to judge to what extent he can back the individuals of his own stud, or otherwise hedge off, as circumstances may dictate. He must avoid all fancies, and be very careful, as Darvill observes, "how he backs his fancy, or takes the odds, out of his own stable." As the times of performance approach, he must be guided by circumstances how far it will be prudent to unfold his opinions to his training groom, private jockey, &c. The best method of keeping them honest, is to act both liberally and kindly towards them. "If they are allowed," as Darvill says, "to stand their money to a certain extent in his (the master's) own book," it may do much, and will further insure their future fidelity, if, when on the settling of his book, he finds he is from five to ten thousand pounds a winner, that he adds a handsome present to each in the order of their standing, as a reward for their actual services, and for their faithful keeping of his and their own secrets.

Sect. II. *Of Jockeys and Race Riding.*

1251. *The jockey is a very important personage in every race.* The origin of the jockey, as we have already shown, is in most cases low, and too many of them are not wanting in low cunning, and too frequently they even exhibit consummate villany. Nevertheless, many others among them rise on fair fame to high respectability and competence. A few become owners of horses also; but, what is much worse, they are too apt to be bettors as well, which of necessity opens the door to fraud, and gives reason to suspect that many horses have been "run to lose" by them when they had the race in their power. An inherent attachment to this sport can alone render this occupation an object of choice. "A jockey," in the words of Nimrod, "should possess the following not every-day qualifications:—considerable bodily power in a very small compass; much personal intrepidity; a kind of habitual insensibility to provocation, bordering upon apathy, which no efforts of an opponent in a race can get the better of; and an habitual check upon the tongue. Exclusive of the peril with which the actual race is attended, his profession lays a heavy tax on the constitution. The jockey must not only at times work hard, but the hardest of all tasks, he must work upon an empty stomach. During his preparation for the race, he must have the abstinence of an Asiatic; indeed, it too often happens that at meals he can only be a spectator, we mean during the period of his wasting. To sum up all, he has to work hard, and deprive himself of every comfort, risking his neck into the bargain, and for what? Why, for five guineas if he wins, and three if he loses a race. The famous Pratt, the jockey of the no less famous little Gimcrack (of whom, man and horse, there is a fine portrait by Stubbs), rode eleven races over the Beacon Course in one day; making, with returning to the post on his hack, a distance of eighty-eight miles in his saddle." (*Quarterly Review*, No. xcviii. p. 394.) It is not, however, by the mere customary fee for riding a race that their honest profits are to be measured. In most cases, when a jockey exhibits any extraordinary tact, and wins a large but somewhat uncertain stake, he is complimented with an additional douceur, which is often a very considerable one. It is said that James Robinson, in the same year that he won both the Derby and the St. Leger, received 1,000*l.* from a Scotch gentleman, who was a great winner by the latter race.

1252. *The Newmarket jockeys* bear away the bell for their seat in riding, and the general elegance of their costume. The northern jockeys have, however, among them many excellent and workmanlike riders, as the Yorkshire meetings can testify. Neither is it very unusual for gentlemen to ride their own races, at country meetings particularly; and we may further remark that the equestrian mania with some is so great, that they will volunteer to ride for others also. Sir Tatton Sykes some years since was an instance of this; he would ride almost any distance to enact the jockey for almost any one that solicited his aid, and being an undoubtedly good race rider, and a man of unimpeachable honour, he had frequent requests thus to officiate. It is said, that when thus called on, if it was a hundred miles off, instead of refusing, "he put a clean shirt in his pocket, his racing jacket under his waistcoat, a pair of over-alls over his leathers, and jumping upon some thorough-bred tit, arrived there the next day by the time of starting; and, the race over, set off on his return home again." But how well soever these gentlemen jockeys may perform, and however such a practice may accord with the classic doings of Greece and Rome, we would hold up to them the motto, *Ne sutor ultra crepidam.*

1253. *The training of the jockey is a process of severity*, unless by good fortune he is naturally stunted in his form. A pigmy, with sharpness of intellect and strength of arm, it has been observed, would make a fortune at Newmarket by bringing a feather weight to the backs of the two-year-old colts which are brought to the post. Mr. Sandiver informs us, that the length of the jockey's training "continues for about three weeks before Easter to the end of October, but a week or ten days are quite sufficient for a rider to reduce himself from his natural weight to sometimes a stone and a half below it. It is asked, what food do they live on? For breakfast, a small piece of bread and butter, with tea in moderation; dinner is taken very sparingly, a very small piece of pudding and less meat; and when fish is to be obtained, neither one nor the other is allowed. Wine and water is the usual beverage, in the proportion of one pint to two of water; tea in the afternoon, with little or no bread and butter, and no supper. What exercise do they get, and what hours of rest? After breakfast, having sufficiently loaded themselves with clothes, that is, with five or six waistcoats, two coats, and as many pairs of breeches, a severe walk is taken from ten to fifteen miles. After their return home, dry clothes are substituted for those that are wet with perspiration; and, if much fatigued, some of them lie down for an hour or so before their dinner, after which no severe exercise is taken, but the remaining part of the day is spent in a way most agreeable to themselves. They generally go to bed by nine o'clock, and continue there till six or seven next morning. What medicine do they take? Some of them, who do not like excessive walking, have recourse to purgative medicines, glauber salts only." (*Quarterly Review*, No. xcviii. p. 408.) Some change has taken place of late years, and the severity of their walking exercise is now moderated to about four miles out, where in some house, before a large fire, the jockey sits and drinks some diluted liquid, which greatly increases the perspiration; to keep up which he walks briskly back again, swinging his arms and shuffling along, at once to excite his secretions and nerve his muscles. We would particularly caution the jockey against indulging in spirits while in training, as a certain means of lessening both his mental courage and his bodily powers. More strongly we would warn him against using it as an excitement just before he is going to race; for he may rest assured that a hearty meal will not affect his weight so much as a glass of spirits, which, acting as a powerful stimulant on the absorbent system, will set them to work to absorb from the atmosphere a quantity of fluid matter that will greatly increase his weight, and this will be more particularly the case if the weather be moist.

Subsect. 1. *Riding a Race.*

1254. *The true seat is easy and natural* in the saddle as in a chair, the feet home in the stirrups, the hands somewhat above the pommel of the saddle, the elbows near to the sides, and the view directed between the horse's ears. The length which a man rides should be so regulated that he may be able to stand easily in his stirrups, without being so much elevated above the saddle as to depend on the bridle for his support; nor must he ride so long as to sit a dead weight upon his horse. In alluding to the position of the hands, or indeed, the body and legs, no undeviating rule can be laid down, as all must be varied in accordance with the different mouths, tempers, and style of going of different horses: the quiet seat, and all but motionless position of the hands and legs, quite proper on a timid or flighty two-year-old, would never get a cunning, lurching, four or five-year-old horse along; and *vice versâ*, the means used to get him to exert himself would alarm and irritate the other, or very possibly cause the young one to bolt or become ungovernable. The seat and hands require also to change position at different periods of the race, be the horse what he may as to temper or disposition. There must be a concentration of muscular power and energy in the rider's arms and shoulders, and breast and knees, for the holding and support of his horse. The spine or back bone of the jockey must always be prepared to bend in the middle, since in the horse's running there is a necessity for some inclination of the body forward, and pliability of frame must be united with the power of a firm grasp with the thighs and the knees.

1255. *The preparations for a race have been thus animatedly described:* — "The glorious bustle of the course now commences; the meridian sun; the dust flies; the coaches rattle along the road; the inferior vehicles rumble behind; the horsemen push forward, and the pedestrians earning pleasure as well as bread by the sweat of their brows, trudge, and toil, and labour towards the goal! — and now, behold they have attained it! and see them in myriads spreading the heath or down, horse and foot, in all quarters, in all colours, and in every variety of equipage, from the splendid coach-and-six, the gay barouche-and-four, the modest postchaise, the smart curricle, the trim gig, and crack tilbury, to the convenient tilted cart, and most humble donkey drag. In the interim the functionaries of the stable have not been idle. The chief or training groom having waked early, and assembled around him his assistants, sets them to their accustomed morning task of cleaning out the litter, stripping and brushing over their horses, which, duly performed, a slight breakfast is, on this occasion, allowed them; and the sleek and high-bred steeds are then left to their repose until the next stable hour, when the same ceremonies are repeated. The eventful crisis approaching, the gallant steeds are led forth towards the course, in proper costume, each having his full share of attendance for safety and dispatch. This attendance consists of one or two helpers from the stable, whose business is stripping and clothing the horse, holding and leading him, assisting the rider to mount, and then taking charge of the clothes, until again wanted for the horse's return to the stable; or, in case of heats, for those which are to come, and which good or ill fortune has numbered. The train groom now mounts his hack, and likewise the jockey, hastening to that which is to be to him the post of honour and emolument, or, perhaps, of hazard and dangerous service, barely requited; but he philosophises on the way, repeating, with a degree of confidence, the old saying, 'luck's all.' The race-horses are now paraded up and down in their clothes, to preserve their warmth and vigour, amidst crowds of admirers and amateurs, until the bell rings to 'saddle.' Immediately previous, the jockeys, casting off their external ponderous toggery, as serpents do their skin, stand prepared in their light and party-coloured costume, the badge of their employers' or masters' tastes, to submit to the unerring test of scale and weight. The bettors now assemble around the post, crowding and jostling, their horses wedged compactly together, eagerly vociferating their offers and takings, and apparently without the slightest apprehension that they are met, 'some to undo, and some to be undone;' and with no more idea or dread at the moment upon their minds of 'levanting,' than of reflection of what the Greeks and Turks may be doing in the Levant." (*Sporting Annals*, No. xix.)

1256. *Stripping and saddling now commence* (*fig.* 193.), and few turf matters strike the eye of the wholly uninformed spectator more than the saddle of the jockey, *so little and so light.* Occasionally the weight is but two pounds, which however seldom occurs: but when a colt is engaged to run, and under a very light weight, a saddle of three pounds' weight is by no means unfrequently employed; and such an one from the hands of a good maker, and uninjured, is found sufficiently strong to carry a jockey of nine stone. We believe the generality of light-weight jockeys prefer a four pound saddle to any other, as it gives room to the rider, and allows of a little stuffing before the knee; which some find a great stay in riding. A seven pound saddle is the size of that in common use, and is much in favour with some race riders. We have heard of one rider, but we will not vouch for the truth of the report, who was so fond of a roomy saddle, that he preferred at any time rather to sweat himself down, than to curtail the dimensions of his saddle. The king's plate horses are usually run in these saddles, and they are much used for trials also with all but very young horses. All racing saddles are made of the very best materials, to avoid the serious consequences which, from the want of this care, must and indeed have happened, by the giving way of a stirrup bar or stirrup leather. The weights which are made up for horses to carry, are very frequently attached to the saddle; sometimes the trees of the saddle are leaded for the purpose, by which means one of seven pounds is made to weigh a stone. Pipes made of bed ticking are also carried along the seat part of the saddle, and which are filled with shot; but great care is required in loading these pipes, that the lead may not escape; in which case the jockey might lose the most important race by coming in short of weight. To prevent the shot escaping through the lacing of the canvass pipes, which has happened, Darvill recommends that the shot be first sewn up in strong canvass bags, which may be laced within the ticking pipes, and thus confined they cannot escape. Weights attached to the saddle are called "dead weight," and are thought to distress the horse much more than those carried about the person of the jockey, and there is much reason to suppose such to be really the case. Jockeys also append leaded trusses to their thighs, and sometimes they hang shot round their waists after the manner of shot belts, either single or double; instead of these, of late years, weighted saddle cloths are frequently used. All racing saddles, in addition to the girths, are further secured by a circingle to insure the safety of the rider. Racing saddles of every popular form may be seen at Mr. Tate's, saddler, in Upper Grosvenor Street, as bits and stirrups of racing fashion may be seen at Latchord's in Piccadilly.

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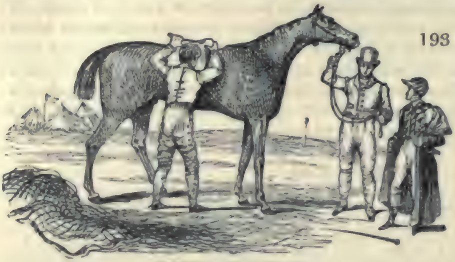

STRIPPING AND SADDLING.

1257. *A few additional remarks on the subject of race riding* may not be irrelevant here, as the seat of the jockey is so totally different to that of other horsemen, that of the hunting rider with his horse at full speed approximating the nearest to it. The hands of the jockey are, we are told, usually held somewhat above the pommel of the saddle, nor do we deny that such is a common mode of placing them: but we beg to remark, that in our opinion it is not the best placing with every variety of horse; on the contrary, this, as most other methods, must bend to circumstances, as we ourselves have frequently observed. Darvill, indeed, alluding to the flighty horse, either in training or racing, directs when such a horse is started, that the hands be "well let down on each side of the horse's withers, by which firm purchase he is enabled to keep his head up and in place, for if in the start he should get his head down he may break away." It is not to be supposed that Darvill recommends this as the constant placing of the rider's hands, for no man living is more aware than Mr. Darvill of the difference of mouth, temper, habits, and often vices, in the race-horse, each of which require a different control by the hand as the great means of counteracting them. While the hands of the jockey give and take, they may yet be firm, though not obstinately rigid; and the reins may be allowed to vary in the angle they bear to the bit, several degrees, with propriety. Were the reins uniformly tight, or the hand uniformly fixed to one position, the *pull* and *hustle*, the rallying point of the last grand effort, could seldom be made. No admirer of the noble art of equitation who has seen Robinson ride a race, but must have been struck with the effects of his master hand on the mouth of his horse, and which are more particularly displayed at the critical periods we allude to. Even in jockey riding, its method must be made appropriate to the horse ridden; horses, like ourselves, differing from each other, necessarily require a treatment which varies according to their peculiarities. A loose rein can never be required in racing, but one held rigidly tight will shorten some horses in their stride, and the willing animal asks for more liberty by reaches of the head, and the moment he gets it he extends his stroke. A good mouth and a good hand on the horse are equally important on the turf, in the field, and the manège also. With a flighty horse, a dead pull at his mouth, by destroying its sensibility, enables him to make too free with himself before he is wanted, or altogether to bolt and break entirely away; and no jockey who really understands riding, but is aware of the necessity of keeping his horse's mouth alive, to insure obedience and prevent wasting his strength. It is also when the racing horse is well settled in his stride, and going along at an apparently winning pace, that great judgment is required in the management of the hand, which, if judiciously done, can support as well as restrain.

1258. *The pull and hustle are effective bridle manipulations*, and are necessary both to the training groom and racing jockey. When the free-going horse is pulling somewhat harder than either of these personages think it prudent to suffer, he may be then checked by a steady and firm use of the bit. On the contrary, the dropping of the hands suddenly, and employing them in a moderate pull, is a signal to the young one in training that a moderate gallop is intended. It however sometimes happens that, when he appears to be making a little free with his head, he is merely throwing or drawing it forward to obtain a little more rein, not to break away, but to continue his stride without distress to his wind, by bringing all the air passages more into a direct line. Such a mistake the riding lad may make, but the jockey, we should hope, never! Again the horse, which in his exercise is so free and kind a goer as on no occasion to require the pull and hustle, is the very one that will be benefited by it when *running in*. The well practised jockey, by what he has previously learned of the horse he rides, and what he feels of him when under him, judging that though the length of the rally is considerable, there is yet enough left in him to carry him home at his best pace, now raises his hands and makes his pulls, and now he relaxes them again, when the horse extends himself; and thus pulling and thus relaxing, he "hustles" him along at a winning pace. Every movement also of the body of the well practised jockey is made in exact unison with the motions of his horse, so as not to impede the horse's exertions when running. There is almost the same difference between the riding of such a jockey and that of some others, as there is between the dead weight of a drunken man when carried and that felt from one equally heavy, but sober and active. Finding his horse equal to the *whole rally*, and knowing not only his game but his temper likewise, the experienced jockey applies the persuaders to the sides of his horse, and perhaps follows this up, when within a few strides of home, with a smart cut or two of his whip, which the gallant beast answers, and immediately he is at home and has won the race. It is, however, to be remembered, that chastisement is often prudently avoided, as will be seen by what follows.

1259. *Changing the leading leg* is to apt to follow a sudden and violent application of the whip, for it often occasions the horse to swerve, and being thus thrown off his equilibrium, he advances the other leg and shoulder as the leaders; which of course embarrasses his stroke, and momentarily shortens it, and this alone has lost many a race. Punishment is requisite on some occasions, to stimulate the sluggish, but it should be done with judgment, and, as well observed by a writer in the *Sporting Magazine* for May, 1837, p. 29., "When a horse is at the top of his speed, the least adverse movement balks his stroke and injures his pace." To illustrate the effect of this forced and irregular action of one side, let the reader place himself upon a chair, lift his feet from the ground, and keeping the left arm perfectly still, let him wind the right forcibly, as if flourishing a whip: so doing, he will find that a hurtful jar will be given to his whole frame. On the contrary, let him, in such a position, work both arms simultaneously, and his body will remain perfectly steady.

1260. *Collecting at the starting-post.* Our sketch, though a slight one (*fig.* 194.), shows some of the horses which are intended to run the next race, and the remainder may be expected to arrive shortly. Look at them, how tall they are, yet not one has reached his fourth year by several months; yet it is intended to be shown that they have already done work, and are slightly stiffened in their legs. How fine they are drawn in their figure by their exertions, and already they are steadied to their business at an age when their grandsires had hardly been handled. There is little curvetting or prancing among them at present, but when a few more impatient ones arrive, the enthusiasm will extend to these also; their members will relax, and all will be alike animated by the same stimulus. The jockeys all neatly, some gaudily, and others even splendidly, attired in the colours of their masters or employers, add much to the interest of the scene. One youthful competitor to the left of the scene, as would seem,

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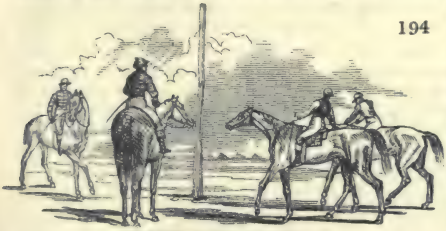

COLLECTING AT THE STARTING-POST.

easily restrained, has been indulged in a canter, and is now joining the party; and as others, still more impetuous, arrive, the scene becomes more animated, until all is bustle and confusion. Nevertheless, there may be seen anxious countenances in plenty. The bettors are weighing the chances in anxious mood. The jockeys, particularly such as have made bets on their own account, exhibit some anxiety, and the gaiety they affect is but forced. Independently of their own stake of money, they have a mighty trust in hand; and the well principled among them, and there are many such, are deeply meditating on the chances for and against them, and are anxiously employed in developing the characters of the opposing horses, and the probable intentions of their riders; at the same time, although to all appearance frank, yet are carefully concealing their own. As the whole arrive, and the signal for the start is given, the demon, foul play, steps in; and now the turf manœuvres begin to be called into action, and a false start is made, which we will give, not in our own, but in the words of one deeper in the secrets than we either are or wish to be.

1261. " *When the horses are started*, a fair and reasonable indulgence is allowed, in case any one from fright, awkwardness, or other accidental circumstances, should fail to get off with the rest: in such a case they are called back, and a fresh signal for the start is given. Now a handle has been made of this indulgence immemorially, but of late years to such excess, that the clerks of the course have found a strong necessity to check it. When there have been young, or hot and impatient, horses to start, the jockeys mounted on steady horses, which they could manage in any way, would go off at the signal, and immediately pulling up, call out a false start! by which *tour* they got them all called back again; and this has been practised to the third, even the fourth time. By such means, the hot horses were so flurried and harassed, that at last it was difficult to make them start at all; and the experienced, who know the delicacy of temperament and constitution in the running horse, and on what seeming trifling circumstances both his speed and stoutness depend, are well convinced of the ill effect of such treatment on those which are delicate and irritable. Now and then excessive caution in the jockey has overshot its mark, and completely changed its nature. When several capital horses have started together with others, without the least right or prospect of winning, the former, each afraid of his equal competitor, or bound by orders, have deferred their run, and waited such a length of time, that they have suffered the inferior horses to gain so much ground, that the capital ones, with all their superiority of speed or goodness, were unable to overtake them; and so the race has been won by the slowest and the worst! The race is thus not always to the swift. The late Lord Grosvenor once won a heavy stake in this way at Newmarket; which, however, might be much reduced by the bets he had, in all probability, made against his own horse." (*Sporting Annals* for May, 1822.) Having elsewhere accompanied the winning jockey to the post of his ambition, we will return to our former subject of distinct notices on race riding.

1262. *Jockeys riding to order.* Unless the owner of a horse is a very good practical judge of race riding, it is considered to be a dangerous thing to tie the jockey up to any one particular method of riding. He may do it for a trifling stake, but it is better avoided for a heavy one; and it is more particularly needless, where the owner of the horse is also master of the jockey; for here it may be supposed that the jockey, from his own observations of the horse when in training, must be the best judge how to go to work to win the race. Even should this not be the case, that is, should he be hired for the occasion, still every good jockey makes all due inquiry of the trainer as to the temper, the game, and the peculiarities of the horse he is going to ride. Nor will the veteran jockey content himself with information only relative to the horse, but he will also learn as much as he can, both of the riders and of the horses he is going to ride against. Thus, for instance, if his own horse be six or seven years old, and his engagement is in some of the royal plates from two to four miles, in which his antagonists are mostly young ones, he would in such a case be prudent in making such running as should keep the young ones at nearly the top of their speed from the very start, by which they would be beaten before they had run their length. But without this *ruse*, the young ones, if not early blown, will get second wind by a little lagging, and as they approach the post will find strength to run in and win to the surprise of the jockey, who had calculated differently, but evidently " without his host." Again, suppose that in running heats, the horse which a prudent jockey is mounted on should bolt or lag a long way out of his ground, will such jockey, when he pulls up, make play and attempt to run in? By no means, unless he knows his horse to be twenty per cent. better than any other of the set. On the contrary, aware that he has already two chances out of three, he avoids taking all that he can avoid out of his horse, but having pulled up and got as quick as he could into the course, he would make strong running to come within the distant post, when he would walk quietly to the weighing house. It is evident that having thus spared his horse useless distress, his chances of winning in the two next heats are increased. Innumerable other instances might also be cited to show that, except under very particular circumstances, and where some great point is to be gained, it is not advisable to tie a jockey up too closely to any one line of conduct in the management of the race. And if the opinion entertained of his abilities and his integrity be good, it is still more advisable to leave his method of riding pretty much to his own discretion, particularly if he has been in communication with the trainer of the horse, from whom he has received the leading traits of the character he bore in training. On these several points, see the excellent hints of Mr. Darvill. We have, nevertheless, known so much jealousy to arise between these two important racing agents, that the one would not inquire, and the other would not inform. This is, however, less likely to happen if the trainer has any stake on the horse, or is allowed to stand for something in his master's *book*, "verbum sat." The trainer will then take care to inform the jockey what lengths the horse is capable of running, and at what pace and what length of rally he can stand at the grand push; also, whether he is so free as to expend himself, without the jockey economises for him, or whether he is of the craving or lurching kind, and, in sporting language, is *a lawyer*, and must be well paid for all he does, &c. The state of the horse as he comes to post will also much influence the riding of the prudent jockey. If the horse be in high form, and have had his sweats and training gallops up to the eve of his engagement, he may be made more free with. If, on the contrary, it is a country horse, and one that has been much on the move, he will probably require to be cautiously ridden; for though good in nature, his state will not allow a long rally at his best pace.

1263. *A jockey challenge.* It is not uncommon for a jockey at some particular part of the race, or part of the course, to challenge another jockey; we will suppose it our own. The challenging jockey brings up his horse, head to neck, or perhaps head to head. Should we recommend our jockey to accept it? We reply, very seldom: because it is ten to one but there is a very dangerous motive in the challenge. Here, however, the prudence and discretion, and not the pride, of our jockey should guide. If he knows the horse he rides is both honest and stout, and if he has any reason to suspect his antagonist's horse is otherwise, let him try it, but otherwise let him beware of the trap. The young jockey is often beaten by this bit of jockeyism. It remains to add, that we have endeavoured to depict the exertions of the racers, the efforts and seats of the jockeys, with the effect produced by a racing scene, in the foreground of the *Doncaster Race-course*, (*fig.* 137. p. 230.); and also by our cut of the *Trial of Young Racers*, p. 339.

1264. *The bridle most commonly in use upon the course is the snaffle, with a double rein,* and the bit should be as mild as possible for a light-pulling horse; but for one having a hard mouth it may be severer, and in some cases a gag snaffle and rein may be required. In other instances a curb, that is, double bridle, is employed. Having accompanied our jockey to the starting-post and from thence throughout the race, until he has been acknowledged a winner, both by the pace he went and the weight he carried, we shall now leave him for a time to enjoy the congratulations of his friends and the approbation of his employer, while we shall betake ourselves to mark the sports and occurrences which are to follow.

1265. *When the first heat is won, and the jockeys have been weighed,* the horses are led about in order to be cooled and breathed, after which they are well rubbed down, and being clothed, they wait until the time of saddling for the next heat. The company amuse themselves during the interval of the heats in conversation, in betting, and in examining the racers as they are walked up and down in their clothes, whilst the hawkers are parading and bawling out their lists of *the terrible, terrible, high-bred horses, which are to run.*

1266. *Heats,* as they are called, are now quite exploded at Newmarket, where too much, and too varied racing business is going forward to admit of such a loss of time. Every Englishman knows that to win is to gain two heats, and that if a dead heat be run, which is to say, if two horses come to the ending post, head and head, and the judges cannot agree in deciding which is first, the heat must be run over again; also, that a distanced horse cannot start again. We have never read or heard of a race which extended to more than five heats, although there is evidently a possibility, granting a great number of horses to start of nearly equal qualifications, for almost every horse to gain a heat, and the sport be too long for the day, and the necessity exist for an adjournment. There is therefore sufficient reason in banishing heats, as is now the case very generally on all the principal courses in the country.

Subsect. 2. *Cocktail Racing.*

1267. *Is the cocktail racer, i. e.* one that is not entirely a thorough-bred horse, able to compete with one that is thorough-bred? We answer, *that in all general cases he is not,* and the reason is obvious, — in the blood breeds the whole formation evidently tends, *ab origine,* not only to such symmetrical proportions as best fit the animal for rapid locomotion, but also to a certain compactness of texture of every component part of the body, as leaves no room for superfluous matter, and frames the entire animal without a bar to rapid progression from the incumbrance of fleshy matter less essentially contractile. In proportion to the purity of the breed of a horse, so will be his capacity for exertion beyond that of one with a mixture of both high and low breeding; and that usually in the degree of the departure from what is considered as a standard of high breeding, *i. e.* eastern origin. Half-breeding shows itself not only in the race, but also in the training; nor has the best training groom been able by his most strenuous endeavours, except in a few very extraordinary recorded instances, to bring the wind and the muscles of the half-bred into such a state of capacity as to be able to compete with the thorough-bred horse. We of course, when arguing thus peremptorily, do it in favour of real high breeding, in opposition to a complete stain in the purity of blood. In some cocktails, as those above hinted at, there is but the slightest remove from what is conventionally understood as being *thorough-bred*; and under particular circumstances these horses run so well, as to lessen in some minds the necessity of a strict adherence to pedigree: and further, also, as such horses when, in very good training, will occasionally beat an indifferent thorough-bred one, so the opinion in favour of blood suffers, though erroneously, an injury.

1268. *Cocktails*, according to *The Turf Expositor*, are "horses which appear as racers, but are understood not to be *thorough-bred*. All horses whose line of descent owns any departure from full-blood on either side, in the common language of the turf, are denominated 'cocktails.' They run for *hunter's stakes*, and also for what are called *half-bred stakes:* nor, indeed, are they debarred from running for regular plates, &c. for which however they seldom do enter, though instances are not wanting, where they have beaten acknowledged thorough-bred horses and those of a fair description, or perhaps a little above the general average of what may be called plate horses. Miracle, as an instance of what we are stating, entered and ran as a cocktail at Knutsford, 1827, against Orthodox and Vesta; and after three well-contested heats, won the plate." The excellent compendium we have quoted from, has done infinite service to the public, in stripping this sport of the fraudulent veil with which it was too long covered, by demonstrating, beyond the possibility of denial, that very many of these so called cocktails are, in fact, thorough-bred horses; and, consequently, that the system of *cocktail racing* is strongly tinctured with fraud. "Who," the author asks, "could look for a moment at The Tartar, Mr. Fry, Agnes, Judy Nicholson, Sawney, and others, and suppose they were not thorough-bred? Let us look at the performances of the above named cocktails, and we shall be convinced, that they are not only thorough-bred, but as well and almost as highly bred as possible. A real cocktail cannot bear the training even which these horses have undergone; to say nothing of the powers of continuance which they have displayed — a characteristic so well known to be utterly inconsistent with the very nature of a horse with a taint in his pedigree, and of which a real cocktail is absolutely incapable. If a genuine cocktail be put into training, and treated in the same way as a thorough-bred horse, he will in a short time refuse his corn, and consequently his training must cease." (P. 55.) His frame is absolutely unable to endure the severe exercise to which thorough-bred horses are subjected. In fact his appetite follows his departing powers: and the statement here made by the ingenious writer convinces us, that as many of the misnamed cocktails of late years have stood their training, and continued to race at country meetings, where they have exhibited both speed and endurance sufficient to beat acknowledged thorough-bred horses, no other conclusion can be drawn from these facts, but that such horses were themselves thorough-bred; for, were it otherwise, in sporting language, "the black mare must come out." Who is there that remembers the figures and the feats of those "would be" cocktails of later date — Gascon, Fitzjames, Miracle, and Tawny, as prominent examples of high-breeding, not only in appearance, but particularly in that grand characteristic of the purest blood, namely, extraordinary capability of endurance; and yet all these have raced under false colours.

1269. *How, it may be asked, can these deceptions in cocktail racing be practised without immediate discovery?* Indeed, how can it happen that thorough-bred horses can be foisted on the racing public as cocktails, when certificates of pedigree must be given in to qualify them to run for the stakes in which they appear? Perhaps some light may be thrown on the matter by taking the view of it which Mr. Brown has done: — "The great mart for cocktails is the north, where the breeding and rearing of them is conducted, like other nefarious transactions, with great privacy. A blood colt of promise, and two or three fillies of equal pretensions, are selected from some private source, or some remote locality. The owner or owners of these (for there are usually two or three confederates) live in unfrequented situations, and themselves perform all the manipulations of rearing and training, so that, when these presumed and certified cocktails are brought to post, there are none to prove them any thing beyond *cocktails*. Other nefarious practices are also often resorted to, to favour deception, such as the age, which is altered very frequently; and the produce of mares have been exchanged even. A known well-bred runner has also occasionally been disguised by trimming, marking, &c. &c: thus altered, he has been taken to a distant part of the country; a false pedigree, with all the formalities of oaths, documental papers, &c. have been exhibited, and the horse has run as a cocktail, and those not in the secret paid the cost." Those who would maintain for the turf its utility and proper character, greatly deplore the low gambling and rascality which have defiled it in recent times. A forcible writer remarks: — "Although the machinery of the turf is still what it was, — although horses, jockeys, trainers, stakes, &c., are still part and parcel of racing, in its principle it is utterly changed. The race itself is only the *material* portion of the sport; its spirit or essence is the money invested." (*Craven*, in the *Sportsman*, xix. 75.) Harry Hieover adds, "I am not aware that mankind is more infamous than it was fourscore years ago; but that the practices on the turf are so, no one can doubt. Let us hope that the patrons of the turf are naturally enough disgusted with the mode in which turf-matters are carried on, but that they will confine their disgust to the perpetrators of the abuse of a noble sport — not to the sport itself, which is as harmless to those who can afford to enjoy it as hunting, coursing, shooting, or fishing. But I feel satisfied that the monster stakes, like many monster meetings, have done incredible mischief, and have been the means of calling an equally monster multitude of persons of a certain class to the turf, who would otherwise never have set such powerful machines in motion to carry out the measures by which they live." (*Glories Past*, *Ibid.* xix. 100.)

SECT. III. *Steeple Chasing or Racing.*

1270. *It happens that man in his cultivated state* accumulates a superabundant quantity of energy both of mind and body, without some drains are kept open, or artificial ones established. Were the legitimate chase the only means of keeping up that wholesome rivalry, that chivalrous enterprise, which has gained to our youths the envy and the admiration of the world, there would be little left for the most caustic critic to remark on in dispraise; but when, Don Quixote-like, we chase steeples, as he encountered windmills, we fear "the schoolmaster being abroad" may have something to say. The exuberant energies, however, must have vent; and the gallant spirits of the present day would rather be really dead, than thought to be "dead slow." "Go it my boys," is their motto; and whether it be to chase that which retreats, like the fox, from their pursuit, or the steeple which disdains all flight, is indifferent with those who, like the *aides-de-camps* of Buonaparte, are accustomed to few other orders than those of "Forward! forward!"

1271. *Steeple chasing* appears an offset from the ancient equestrian practices, of which the *train scents*, noticed by the veteran Mascal, afford an instance. In proof of its novelty amongst us, we may quote the authority of the well known author of the descriptive matter in *Scott's Field Sports*, who, observing on Markham's notice, that "some love hunting for exercise, some for the chase they hunt, some for the running of the hounds, and some for the training and trying their horses," has the following: — "This latter part refers to their mixing the chase with racing in *steeple running*, and matching their horses to run *train scents*, practices long since out of date, excepting that a match across the country to a steeple may periodically occur between two men, who have more daring in their constitution than he who can snuff a candle with his fingers. A race of this kind may I think be found in the *Sporting Magazine* within this year or two." *Scott's Mem. of Field Sports* were published in 1820. A steeple chase (*fig.* 195.), as it appears amongst us now, may be characterised as a hybrid, exhibiting features of both hunting and racing parentage, and introducing the love of gain into a pursuit that was before free from the taint. Formerly steeple chases were supposed to be run by horses that had been what was called "regularly hunted" the season before; but masters of hounds were so pestered with spurious sportsmen casting up at checks and critical moments to "qualify" for tickets, that they soon set their faces against steeple chases, and consigned them to the members or hangers on of the turf.

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STEEPLE CHASE.

1272. *This sport was, formerly, confined to Ireland*, and its features of enterprise are well worthy the high-mettled sons of Erin. It has been observed with more wit and severity than truth, that the very name of a steeple chase bespeaks its Irish origin, because there is no such thing as a steeple concerned in it. There is really, however, some doubt whether this name did not first originate in England, where such an appellation would be no misnomer, as a steeple, windmill, or other prominent object, has been often actually chosen as a guide to direct those who might be supposed to be ignorant of the line of country they were to pass over. Indeed, we have heard its paternity ascribed to a certain Leicestershire field, who, after a bad day's sport, proposed a scurry across country to Melton, whose church tower was then only visible; on arriving at which the leader of the party exclaimed, — "You see now what fine sport we might have if it wasn't for these d—d hounds!"

1273. *The practice of steeple chasing* has been for many years common in Ireland, and the method of conducting an Irish meeting of this kind may be exemplified by the following articles entered into at a Mayo Spring meeting, which took place in April, 1833, and lasted for three days: — "First day, five feet walls; sweepstakes of 10 sovereigns each, 50*l.* added, over the Mayo Course, six five feet walls; whip, weights, and distance (four miles): a three-year-old to carry nine stone; to be run the 8th of April next; to close on the 25th of March next; four subscribers or no race: the above 50*l.* guaranteed by Lord Clanmorris. Second day, four feet and a half walls, same stakes, weights, distance, &c. as above, with 25*l.* added, guaranteed by Thomas Hynes. Third day, a handicap, over the course, six four feet walls, same stakes, 25*l.* added, guaranteed by S. O'Malley, and J. Macdonnell. Ordinaries, ball, &c. at Castlebar."

1274. *The Irish steeple chase is not*, however, necessarily confined to any determinate spot, whether a race-course or other; but any portion of a country whatever may form the scene of action, provided it furnishes fences in sufficient plenty and variety. The tract which the riders are to take, is previously marked out by double rows of flags, which are placed on walls or other elevations; between which the riders are to proceed at their best pace, taking every fence in the line. It is evident that no better plan can possibly be devised, to make "jumpers" of the horses and fearless riders of the men than this: and as the speed with which it is done marks the winner, so also the powers of the horses are put to a fair test.

Our Hibernian neighbours equalise the chances between the parties in these matches more justly than we did. With us a lucky acquaintance with a country often gave to one an infinite advantage over another; and the local sportsman who knew every yard of the ground to be passed over, the strength of every hedge, the width of every ditch, and the depth of every brook, always had by far a better chance than the best straight forward rider, however well mounted, without such information.

1275. *Steeple chasing* came rapidly into favour in England, and has as rapidly receded. The flagrant Liverpool case, where the rider of the favourite was charged to be first over the brook, but on no account to win (dramatised in *Sponge's Sporting Tour*), damaged its popularity considerably. Steeple chases became a far greater field for fraud than any other race, chiefly arising from the difficulty of detecting it. They have no redeeming quality to recommend them, except, indeed, as the *Quarterly Review* once observed, the frequent riddance they make of fools. They neither tend to make hunters nor racers of the animals engaged in them. Sam Slick says he never knew an out-and-out politician who could pay his debts, — an observation that may now be extended to steeple-chasers.

1276. *The St. Alban's steeple chase*, of March 8, 1832, being perhaps the first that took place in what may be called the public house interest, may be here appended from the published reports of the day. "On that day St. Alban's exhibited the most lively scene of bustle. Gay equipages in numbers, and horsemen without number, bespoke a stir amongst the fancy. Neither of foot passengers was there any lack; all exhibiting one mass of expectation and excitement."

1277. *Twenty-one horses* had been entered for a sweepstake of 10 sovereigns each, of which the following twenty actually started: —

Horses.	Riders.
Sir Wm. Geary's b. m. Arab	Owner.
C. Neville, Esq's ch. g. Hotspur	Mr. Bean.
Mr. Cox's ch. g. Rough Robin	Mr. Osbaldeston's whipper-in.
Mr. Johnson's Loperella	Mr. Stubbs.
Mr. Thomas's b. m. Corinthian Kate	Captain Beecher.
Mr. Tuppin's b. h. Peacock	Mr. Weston.
H. Forbes, Esq's. b. h. Zanga	Owner.
Mr. Cuff's g. g. Redstart	Mr. Hall.
Mr. Evan's g. h. Grimaldi	Mr. Mostyn.
Mr. Orbell's b. h. Bloomfield	Mr. Codrington.
Mr. Elmore's b. g. Moonraker	Mr. Saffert.
Captain Horne's c. st. Lucifer	Owner.
Mr. Thornhill's b. h. Creeper	Mr. Patrick.
Mr. Carey's g. h. The Monk	Owner.
Mr. Adam's b. m. Lily	Mr. Wesley.
Mr. Comyn's b. h. Talisman	Owner.
Mr. Solloway's m. Countess	Owner.
Mr. Lelly's b. m. Bounce	Mr. Parker.
Colonel Charité's Napoleon	Mr. Crommelin.
Mr. Anderson's gr. h.	(Unknown) Post entrance.

1278. *The distance to run was four miles*, and no horse was to carry less than eleven stone, seven pounds. The last horse was adjudged to pay the second horse's stake; and the winner was to be sold for 400 sovereigns, if demanded, within three hours. Mr. Osbaldeston was chosen umpire, and Mr. Coleman, the general manager of this soul-stirring affair, was clerk of the course. Most of the arrangements had been completed on Wednesday the 7th; on which day a very strong muster of the match makers and their friends was made at St. Alban's. Among the horses, Moonraker, Grimaldi, Bounce, and Creeper, were the principal favourites, and were pretty freely backed against the field. The line of country which was to be the scene of action, was from Ellen-brook-green, which is about a mile and a half distant from Hatfield, to a paddock at the back of Mr. Coleman's premises; the entrance to which formed the last grand point of the struggle for victory, as it could only be gained by mounting a steep bank, and passing directly between two high trees, which tended to give an additional interest and effect to the finale. A bird's-eye view from this spot exhibited the principal features of the country to be passed over, which has been thus described: — "At the bottom of the first meadow was a quick-set hedge and drain; then came a second meadow, and second quick-set hedge and drain, when the ground rose gradually to a considerable elevation. Here the first flag was displayed from the summit of a high tree, to the left of which the riders were to keep. To this tree the view was uninterrupted from a path running in a line with the front of the last house on the London road, and along this path an immense multitude of pedestrians was collected. The intermediate space was, however, enlivened by groups of horsemen; some in the scarlet livery of the chase. On the hill in the distance, a vast crowd was also assembled of horse and foot, and some few charioteers. These persons had a more extended view over a close country 'up and down,' with many heavy leaps, and some ploughed land, to a more distant hill close to a farm-house, where the second flag was visible. Here the route turned short to the left, and could only again be taken in view by obtaining a new position. From this angle the direction to Ellen-brook-green was nearly straight, with the exception of such deviations as the safe progress of the riders rendered indispensable. From this sketch of the locality of the scene, it will be seen that there were abundant opportunities for the gratification of the spectators, which was considerably enhanced by the very favourable state of the weather, the sun shining brilliantly throughout the race. At one o'clock the bugle was blown as a signal for saddling and mounting, and the horses were soon congregating from all directions, the riders attired in their party-coloured jackets and hunting caps. The whole having mounted, the articles were read: the principal instruction for guiding the race in which was, that the course would be marked by flags, to the left of which the riders were to keep throughout, or forfeit the race. At a quarter to two, all being in readiness, Mr. Osbaldeston led the way out of the yard, followed by the horses, which were conducted by the nearest route to the appointed ground, where they were marshalled in the best order their impatient spirits would permit. About half past three the 'rampants' were started, going off in the most gallant style. It would be difficult, at such a moment, to say which had the advantage. Lucifer, however, led the way; and the rest followed at a round pace. The first two or three fences were well taken; but in the third field, Captain Beecher, on Corinthian Kate, had a fall, and his mare ran half across the meadow before he could catch her and regain his seat, his bridle being then all on one side. He had previously got the lead, Rough Robin close behind. The others were all well up, but Moonraker and Grimaldi seemed waiting on each other in the rear. We cannot presume to give the position of each horse in the animated struggle which followed. Many of the leaps were admirably taken, and all seemed influenced by the same desire of emulation. All the nags were not, however, fortunate; some got clumsy falls, and unhorsed their riders; and others declared off the grand contest, seeing they had not a chance. The most interesting point was the struggle for turning the angle at the farm-house, from which a view of the distant goal could be obtained. Here Moonraker asserted his supremacy, and came gallantly round the corner, close followed by Corinthian Kate, Grimaldi, Bloomfield, Napoleon, and some others well in their wake. The burst down the hill was beautiful, and the general cry was, 'Moonraker is winning easy!' Three or four leaps were well taken, when Moonraker, in surmounting the hill, came to the third fence from home, nearly abreast with Corinthian Kate: they both cleared well; but Moonraker, swerving a little to the left, so as to clear the flag-tree, Corinthian Kate came close to him on the right, and in the next fence had rather the advantage in making her leap. The call was now rather

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HURDLE RACE.

for Kate; but in a few strides Moonraker regained his superiority; and, darting with unabating vigour at the last fence, cleared nearly seven yards at the spring, and shook his rider most fearfully. Kate now fell off; but Grimaldi, who had been waiting for the last struggle home, and who had taken his leaps beautifully from the first, rushed out and challenged Moonraker. The struggle up the hill to the paddock was desperate, nothing could be finer; both sprang to the bank at the same moment, but Moonraker had the advantage by half a neck, and was pronounced the winner. It was thought, had Grimaldi made play sooner, the issue would have been different. The struggle with those left immediately behind was between Corinthian Kate, Napoleon, and Bloomfield. The former two came in third and fourth." (*Egan's Book of Sports*, p. 163.) The finish of this celebrated match laid the foundation for another by the friends of the horse Grimaldi, who backed him against Moonraker for 500 sovereigns a side; the match to come off in the Harrow country, on the 13th of the same month. Moonraker to be ridden by Mr. Osbaldeston, and Grimaldi by Mr. Seffert. This also terminated in favour of Moonraker, though not without some little wrangling.

1279. *The ancient borough of St. Alban's* became to steeple chasing what Newmarket is to legitimate turf-practices. How long any localities may be likely to retain any species of *metropolitan* importance in this connecting link between turf and field-riding it is not easy to predict, so much do caprice and fashion influence these matters. The benefit which accrued to the town of St. Alban's from its steeple-chase meetings stimulated its inhabitants to provide the very best accommodation for both those who engaged in, and who flocked to witness, the sport; and the landowners of the vicinity were good-natured enough to throw no obstacles in the way; so that the ancient Verulam, now shorn of its honours and prosperity as a posting-town, as it had been long before of its ecclesiastical importance — for a time, at any rate, acquired new notoriety. The personal influence of Mr. Coleman of St. Alban's, and his experience in the management of all matters connected with steeple chasing, contributed not a little to its success, and the frequency of matches made to go off there. (For particulars, see *The Sporting Magazine, Old* and *New*, and *Bell's Life in London*, passim.)

1280. *The popularity of steeple racing* from this time increased, and St. Alban's continued to offer its fields to bespatter the ardent riders, and its brooks to wash off the accumulated stains. Its hedges have waved under the jumpers, and its ancient town has opened its hostels to greet the conqueror and console the vanquished. Other localities have also opened their doors — their sods we should have said — for similar purposes. It is right that the money of the free-hearted sportsmen should thus get them a welcome wherever they and their horses repair.

1281. *A. D.* 1839. *Our preceding account of steeple chasing* was written thirteen or fourteen years ago, since which time many of these chases have taken place in almost every part of England; the practice every year appearing to be on the increase. Fox hunters, particularly masters of hounds, do not generally patronise the sport; it tears up a country, and begets an ill feeling in the minds of landowners, which is apt to rebound from the steeple chase to the fox hunt. The turfite can hardly commend it; for since four-mile heats have been greatly done away with on our race-courses as too trying to our horses, what can be said of four miles of racing, under heavy weights, over a country purposely chosen for its inequalities of ground, its intersections of yawning ditches, desperate leaps, with rivulets deep and wide, in which horses have been drowned? The sport is certainly calculated to try the speed and hardihood of our horses, and the determined courage and excellent horsemanship of the riders, but it savours strongly of cruelty and opens a wide door to chicanery and fraud.

Subsect. 1. *Hurdle Races.*

1282. *Hurdle racing* came into vogue above fifty years ago, and we believe we witnessed the original frolic that gave birth to this hybrid sport; at least, we never heard of any other that had preceded it. It was on an occasion when his Royal Highness George, Prince of Wales, then colonel of the 10th Dragoons, was on the Brighton Downs with his pack of lapdog beagles; himself accompanied by Mrs. Fitzherbert and by the officers of his own regiment, then quartered at Brighton. It unfortunately happened that all the endeavours of the shepherds failed to find a sitting hare. His Royal Highness, who wanted excitement, at length proposed to his officers some jumping matches over the hurdles, which were here and there found set up for night folding the South Down sheep. Much amusement ensued, in which we ourselves took a part, being mounted on a three-part-bred mare got by Enterprise, of which we hereafter may have somewhat further to remark. This mare was a most admirable leaper, either flying or standing; and she so signalised herself on this occasion as to gain very general notice. At length his Royal Highness sent one of his immediate attendants to inquire whether we were inclined to part with her for Mrs. Fitzherbert's own riding. We had at that time no wish to dispose of our favourite, and we excused ourselves on the score of her contracted feet, which being quite evident, put an end to any further negotiation. We by no means assert that hurdle leaping, as an organised sport, had not been before practised; but it had not then become, as it has long since, a regular feature in most country race meetings: where it had occurred was usually on the occasion of stakes for hunters being run for.

1283. *We cannot better describe hurdle racing* before it became an organised part of race meetings than by referring to our cut of the sport (*fig.* 196.), and by giving the outline of an account of one from the *Sporting Magazine* for December, 1833. The conditions were: — "Hurdle sweepstakes of 5 guineas each, for horses not thorough-bred, that have never won any stakes or plate, to carry twelve stone each, to be *bonâ fide* the property of gentlemen only, and to be rode by gentlemen. Ten subscribers or no race. To be run over the New Course, mile and three-quarters, taking six leaps in the race over sheep hurdles, three going out and three coming home; starting from the winning-post. Any horse following through a gap that a leading horse may have made to be considered distanced." Ten subscribers entered their names, and nine appeared at two o'clock on the day named; but the riders did not mount till near three, in the hope that the court would be present. The following horses started: —

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HURDLE RACE.

Horses.	Riders.	Horses.	Riders.
Earl of Errol's Ensign -	- T. Torrel, Esq.	Mr. Batesman's Swerver -	- F. Heysham, Esq.
Sir R. Falkner's Gulnare	- H. Bentham, Esq.	Mr. Wadsworth's Mazeppa	- Owner.
Lord Dillon's Pegasus -	- Owner.	Mr. Colyer's Rockingham	- Owner.
Mr. Goring's Don Juan -	- J. S. Sconswar, Esq.	Mr. G. Harrington's Kittums, drawn.	
Mr. Sivewright's Sailor -	- Towers Smith, Esq.	Lieut.-General Sir R. Kier Grant, K. C. B., and Col. Sir George Teasdale, stewards.	
Mr. Kemp's Jerry - -	- Owner.		

1284. *The hurdles were stout black wattles*, which will bend but not break; and were placed, the first near the distance post, the second eighty yards further down in the flat, and another eighty yards lower down. The further account of the performance of the several horses are well worthy the perusal of the amateur, being detailed in an interesting and spirited manner.

Subsect 2. *Of Racing as a speculative Concern.*

1285. *We now come to a very unpleasing topic in racing affairs*, namely, the lamentable change the turf practice has experienced, from a noble emulous sport to a sordid avaricious trading pursuit. Gambling, unfortunately, is now the universal idol; it is a favoured guest in the hazard clubs of the titled, and it revels in the hells of the profligate. The cockpit owns it as its president, and the turf as its life's blood. Without doubt there are many noblemen and gentlemen of high honour yet on the turf; but the great preponderating number of mere adventurers, and regular "legs," has driven almost all chance of success by fair betting off the course; and, in the language of trade, has brought the best judgment to a discount. Desperate characters, without money, and void of principle, bet largely on a concocted race. If fortune favours the nefarious transaction, so much the better for them; if they lose they are still safe, for they become *levanters*, *i. e.* they abscond. There is little dependence now to be placed on the goodness of any horse, or on the fair conducting of most of our modern races. The horse may be drugged, or the jockey may be bribed; so numerous are the villanous practices resorted to when a favourite is heavily backed to win. It has been asserted by a well-known rider and owner of race-horses, deep in turf secrets, "that if Eclipse were now here, and in his very best form, but heavily backed to lose by certain influential bettors, he would have no more chance to win than if he had but the use of three of his legs." Innumerable tricks are practised in racing to deceive the incautious, and to mislead them in their bettings, by the unfair custom of making a horse a favourite on the betting books, and then selling him on the eve of a great "play or pay" race.

1286. *To purge the turf of its practical frauds* several alterations should be made. No trainer or jockey should be allowed to bet against the horse he trains or rides, either in person or by commission. Lord Exeter's trainer was known to have betted 300*l*. against one of his lordship's horses; and such is the generally supposed power of both trainer and jockey, that the one, it is said, can train, and the other can ride any horse to lose: the consequences of such negative bettings can be easily anticipated. Drugs have too often been given to lessen the powers of horses, and various other arts have been put into practice to prevent fair competition on the turf; so that the uninitiated sportsman, however good his judgment may be as regards the actual properties of the horses to start, is very likely to find himself lamentably deceived at the termination of the race, however well grounded his opinion might have been in the outset. Betting, nevertheless, will probably ever remain a very prominent feature in racing. It certainly renders the sport infinitely more interesting than it would be without a personal stake on the event. Betting likewise tends to engage the attention of many persons in no other way racing men, and who, without this inducement, would probably not attend races at all: their attendance, though perhaps of no advantage to the sport, causes money to be spent, and in this way renders the meeting popular.

1287. "*Making a book" is an expression very common in turf language;* and to "make a book" is as essential to the turfite as book making is to lay the *cacoëthes scribendi* of the author. To "make a turf book" is a figurative term, derived from the necessity which every turfite has of noting down the various sums he has betted, the conditions of such bets, &c. &c.; which circumstances no memory, unassisted by a *note book*, could retain. To make a book has also another signification among turfites, and is rather betting against horses than for them. It has nevertheless a still wider scope in some other cases, and implies any bets on the principal stakes, which are of course *intended to be so made* by such supposed information gained, relative to private opinions, the actual state of the horses, &c. &c. as shall insure the maker to become a winner. It is however clear, that no mathematical calculation can guard against actual contingencies; nor still less can the powers of any horse be insured against the villanous practices of the trainer, the jockey, and their confederates. It is therefore necessary that the wary sportsman should so arrange his bets that he may become a winner without the chance of losing. To effect this with absolute certainty, it is necessary that he should have at least a moderate acquaintance with fractional arithmetic. It must be confessed, however, that there have always been eminent betters who, though wholly ignorant of the mathematical doctrine of chances, yet by the help of very acute natural powers of perception, much experience, joined with extended sources of informing themselves on the state of the several horses engaged, who manage so as to make most of their speculations turn to good account. Amongst these, Messrs. Crockford, Gully, Bland, Robinson of Manchester, Holliday, and Davis, have stood conspicuous. But these instances by no means invalidate the necessity of a tolerable acquaintance with the doctrines of chance, before the better can proceed on moderately safe grounds. Of these individuals, if we may judge from an article in *Fraser's Magazine*, entitled *The Anatomy of Gaming*, by Nimrod, Mr. Crockford was one of the most successful. We are there informed that he had "amassed an immense fortune within twenty-five years; from being a small retail tradesman, he had become the possessor, not only of the splendid house in St. James's Street, but of another very fine one in London, and likewise of a mansion and estate at Newmarket, formerly the property of one of our oldest noble families. He was, in addition to all these, the proprietor of much valuable property in London, and had a son established in the wine trade, with perhaps the best stocked cellars in the metropolis. Nor is this all; he would cash you a check for 100,000*l.* with quite as much ease to himself as the Bank of England could, and time has been with greater. It is a question that puzzled half of the world, how and whence such immense wealth, exceeding 300,000*l.* as it is asserted, could be amassed by any individual from such sources, — giving him all the advantages Crockford was known to possess, of a clear calculating head, the *versatile ingenium* of the Latins, the *capo scaltre* of the Italians into the bargain, in the face of such prodigality of purse as we have few modern examples of, — without the aid of a large capital to begin with, which it is well known was not this man's case. It is however well known, that he was assisted with capital, and in high quarters too, as it is to be feared, in this period of thirst for speculation and gain, another such a man would be with the certainty of turning up such a trump."

1288. *By the winning of stakes alone,* if honesty did but conduct the race, much money might be won, so as to remunerate the spirited exertions, and the vast sums which are expended in breeding, rearing, and training the best blood. Dorimont, a four-year-old horse, the property of the Earl of Upper Ossory, won at Newmarket a stake of 5,200 guineas, which depended on a single heat. This horse in the same season also won, as it is said, for his noble owner, in matches and sweepstakes, 7,800 guineas, exclusive of the Grosvenor stakes and the Clermont cup.

1289. *To a fortunate system of betting much attention is necessary;* a chance must never be given away; and, like the successful stock-jobber, the successful bettor on turf matters must be always at his post. In "making a book" on a race, he must take care to be among the first in the betting ring. He must also remember that it is less his interest to back a favourite than it is either to take or give the odds, for and against each horse. The field is always "a good horse," whereas the favourites are often pushed to the head of the list by a powerful party for their own ends, and are therefore not always safe to back. "The chief object of the general bettor, therefore," says Mr. Apperley, "should be to take long odds against such a horse as he fancies, and then await the turn of the market, when he sells dearly what he has purchased cheaply. For example, how often does it happen that 12 to 1 is the betting against a horse two months before his race, and before he starts it is only 4 to 1? If the bettor has taken 1,200 to 100 against him, and then bets 400 to 100 the other way, he risks nothing, but has a chance to win 800. It is by this system of betting, that it often becomes a matter of indifference to a man which horse wins, his money being so divided amongst them all." (*Quarterly Review*, No. xxviii. p. 446.)

1290. *Betting is also systematically made upon certain horses and the field;* which method is common among the regular betting men of Newmarket, who, by living on the spot, have the advantage of learning many circumstances relating to the several favourites, which of necessity must remain unknown to others. For which reason, it is evident, that this mode of betting must be very hazardous to any others than to those at the fountain head of private information.

1291. *Betting by commission is also practised by some sportsmen,* who have not the time, opportunity, or inclination to make a book for themselves. This is always a dangerous speculation; the honesty of the agent is put to a very severe test, and even under the supposition that he is so, his agency is often a very unpleasant office. If otherwise, it may be supposed that he can hardly, we assert in the words of a turfite, "see another making a fortune by a secret of which he is also *in*, without participating. A hundred is therefore laid out; perhaps the horse gets up a favourite in the ring on the day; to make a certainty sure, two or three of the most 'dangerous' horses are selected, and a hundred on each is also laid out. If the favourite wins, a good stake is won; if either of the 'dangerous' horses, he also saves himself; but if that awkward horse, 'the field,' happens to cut down the lot, then pay, and all is over. It is quite true that a gentleman has been known to have only one bet on a Derby, say 2,000*l.* to 100*l.* taken, and has 'thrown in;' but the thing speaks for itself, by the 'legs' making splendid fortunes." (*New Sporting Magazine*, No. xxxv. p. 295.) Again, drawing from the same accredited source, it is justly observed: — "You must well know the man whom you entrust with such a commission, for many are the modes in which you may be deceived. It is, no doubt, easy to detect him if he takes much under, or bets much more than the fair odds; but it is not so easy to detect the transference of a frail account. For instance, the person employed may have an advantageous bet or two with some one in whose solvency something may have arisen to shake his faith. How easy is it for him to transfer these bets to you, who look only to the odds, and not to the responsibility of the party. We have known the practice, indeed, carried even further, and money received for the difference of odds between a bet transferred and the current rate at Tattersal's, when it was shrewdly suspected by the person who received the difference, that the chance of payment was not worth a farthing; and the result of the transaction has proved that his anticipations were but too correct, to the discomfiture of his confiding dupe. It is in fact better, in most instances, if you want to bet against two or three horses before you close your book, and have not an opportunity of doing so in person, to offer to some person of known responsibility half a point above the market price, rather than to commission any person on whom you cannot place the same absolute dependence. We have known a young practitioner buy a ready made book, cast it up in all ways, calculate all chances, and flatter himself that he must be a winner. The result of the race has proved the correctness of his calculations; but alas! the day of settlement has proved to him the fallacy of his hopes. For even our present ingenious Chancellor of the Exchequer would find it difficult to make paper equal to gold in value, under such circumstances as these." (*Ibid.* No. xxviii. p. 264.) We have already alluded to the attempts of prudent speculators on the turf, so to frame their bets as to give them the probability of winning largely without the possibility of losing heavily. This is done by what is called *betting round* or *hedging*.

1292. *Hedging is thus described by Nimrod in the Quarterly Review already quoted:* — "Suppose that twenty horses start in a race, and A. bets 10 to 1 against each, he must win 9, as he receives 19, and only pays 10; namely, 10 to 1 to the winning horse. This, of course, can rarely be done, because it might not occur in a hundred years that all the horses were at such equal odds. Nevertheless it is quite evident, that if, when a certain number of horses start, A. bets against all, taking care that he does not bet a higher sum against any one horse that may win, than would be covered by his winnings by the others which lose, he must win. Let us then suppose A. beginning to make his Derby book at the commencement of the new year. B. bets him (about the usual odds) 20 to 1 against an out-sider, which A. takes in hundreds, viz. 2,000 to 100. The out-sider improves; he comes out in the spring, and wins a race, and the odds drop to 10 to 1. A. bets 1,000 to 100 against him. He is now on velvet; he cannot lose, and may win 1,000. In fact, he has 1,000*l.* in hand to play with, which the alteration of the odds has given him. But mark! he is only playing with it; he may never pocket it, so he acts thus. The out-sider (we will call him *Repealer*) comes out again, wins another race, and the odds are only 5 to 1 against him; A. bets 500 to 100 more against him, and let us now see how he stands: —

If Repealer wins, A. receives from B. - - - -		**£ 2,000**
He pays to C. - - - - -	**£ 1,000**	
Ditto to D. - - - - -	**500**	
		1,500
Balance in A's. favour by Repealer's winning - - -		**£ 500**
If Repealer loses, A. receives from C. - - -	**£ 100**	
Ditto ditto from D. - -	**100**	
		£ 200
A. pays B. £ 100 — Deduct - - - - - -		**100**
Balance in A's. favour by Repealer's losing - -		**£ 100"**

1293. *But is there no contingency here?* Yes, the colt might have died before A. had hedged, and then he must have paid his 100*l.*; but, on the other hand, he would have been out of the field, which might have been worth all the money to him in his deeper speculations on other horses. Let us, however, suppose our colt to have remained at the original odds, viz. 20 to 1; in that case A. must have betted 2,000 to 100 against him, and then no harm would have arisen.

1294. *The following table,* extracted from the *Sporting Magazine*, is said to contain *the odds* on a greater variety of cases in one race than has yet appeared. Our limits confine us to the table only, but to do justice to its merits we would strongly recommend reference to be had to the original article; where the distinctness of the explanations, which follow the examples stated, cannot fail to interest and instruct the bettor of every grade. (Vol. v. second series, p. 22.) On turf speculations much other valuable information may be gained by reference to *The Turf Expositor*, *The Quarterly Review*, No. xcviii. and as well to the *Old* and *New Sporting Magazines* throughout, but particularly to Numbers xiii. xxviii. and xxxv. of the latter.

A Table, showing the Odds between Horses in the same Race, and between any Number and the Field, at the various Odds against each, as stated in the first Columns; also, the Value of each of their Chances for 100*l*.

Odds against each.	Value of the Chances of each for 100*l*.	Odds against each.	Value of the Chances of each for 100*l*.	Odds against each.	Value of the Chances of each for 100*l*.	Odds against each.	Value of the Chances of each for 100*l*.
Even -	£ 50	7½ to 4	£ 34¾	5½ to 1	£ 15¾	9 to 1	£ 10
11 to 10	47⅓	2 — 1	33¼	6 — 1	14¼	9½ — 1	9½
6 — 5	45⅝	2½ — 1	28½	6½ — 1	13¼	10 — 1	9
5 — 4	44⁴⁄₉	3 — 1	25	7 — 1	12½	12 — 1	7⅔
5½ — 4	42	5½ — 1	22⅛	7½ — 1	11¾	15 — 1	6¼
6 — 4	40	4 — 1	20	8 — 1	11	18 — 1	5¼
6½ — 4	38	4½ — 1	18⅛	8½ — 1	10½	20 — 1	4¾
7 — 4	36¼	5 — 1	16⅔				

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BETTING-ROOM AT NEWMARKET.

1295. *The betting-rooms of Newmarket* (*fig.* 197.), and of *Tattersall, at Hyde-park-corner*, are the principal betting markets. Turf speculations are however, in a minor degree, extended over the kingdom; and in many of the principal towns in England there are appropriate betting-rooms, where turf speculators meet on certain days to make their bets. Such have also their settling days after any of the great races. Here the great and the small congregate promiscuously; and, the grave excepted, there is not a spot where so much equality appears between persons of rank, fortune, and acquirements, and those of low birth, vulgar manners, mere sharping adventurers, whose constant presence at race-courses, gaming-tables, &c. has given them a sort of *entré* to the betting-room, as here seen. The grand evils of betting as we have depicted them are, first, its tendency to destroy true moral principles in those who practise it; next, it strikes almost at the root of the original intent of horse racing, which was the improvement of our breed of horses.

SUBSECT. 3. *Turf Abbreviations in general Use.*

1296. These abbreviations are requisite to be understood by every frequenter of race-courses: —

D. for Duke.
E. for Earl.
M. for Marquis.
Ld. for Lord.
B. C. for Beacon Course.
R. C. for Round Course.
Y. C. for Yearly Course.
Ab. M. for Abingdon Mile.
An. M. for Ancaster Mile.
B. M. for Bunbury Mile.
R. M. for Rowley Mile.
D. I. for Ditch In.
D. M. for Ditch Mile.
T. M. M. for the Two Middle Miles of B. C.
A. F. for Across the Flat.
T. Y. C. for Two-year-old Course.
L. T. M. for Last Three Miles of B. C.
T. L. I. from the Turn of the Lands In.
C. C. for Claremont Course.
C. S. C. Craven Stakes Course.
M. D. for Mile and Distance.
C. or c. for colt.
F. or f. for filly.
h. for horse.
g. for gelding.
m. for mare.
p. for pony.
b. for bay.
bl. for black.
br. for brown.
gr. for grey.
ch. for chesnut.
ro. for roan.
d. for dun.
yrs. for years.
gs. for guineas.
sov. for sovereigns.
h. ft. for half forfeit.
pd. for paid.
p. p. for play or pay.
recd. for received.
ft. for forfeit.
agst. for against.
dr. for drawn.
dis. for distance.
y. for young.

SECT. IV. *Of Race-courses generally.*

1297. *The general features of a race-course* must of necessity depend much on the locality in which it is situated. Were we taking possession of a new found land, we might choose our ground, and fashion it to our liking. But it was far otherwise with the ground which was owned and occupied, in some manner or other, ere racing commenced; and hence our race-courses vary in shape, dimensions, soils to run over, &c. &c. Were, also, the usual visitants at races to choose their own form of course, without doubt they would, one and all, make choice of a round one: and as four-mile heats are now exploded, a circular two-mile course would answer most racing purposes, and would certainly be the most popular; particularly were the grand stand on an eminence that would command the whole view.

1298. *A course of less than two miles* is not popular with the public, the trainer, the jockey, the horse, or his owner either, particularly it is so to the long striding horse, who finds it difficult to run here at his best pace. A small course will hardly allow such a horse to reach the maximum of his speed, or gain the full extension of his limbs, before his race is over. A small circular course is even still less adapted for the lengthy striding horse. It is at Newmarket, where long lengths are now seldom run, and where most of the courses are nearly straight, the lengthy horse shows to advantage. New made race-courses are sometimes formed after the figure of 8; but in our opinion, a circular course of two miles offers every thing that can be wished for in racing. In this length, as the starting-post is also the winning-post, so it offers the popular advantage of viewing from the stand, the starting-post, the race, and the coming in of the horses; which, to the general class of spectators, is as much an object of amusement as the running is of interest and consequence to the men of business on the turf. In a course of this description, besides the winning-post or starting-post, for here, as already observed, they are one and the same, there should be another post immediately opposite; that is, it must be so placed as to be exactly parallel with the line on which the judge stands, by which placing the smallest part of the head of the horse, which appears within the line formed by these two parallels, is at once distinguished, and settles the decision of the judge. It is also of the utmost importance that the race-posts, which mark the line of the course, should be at such distances only as to be easily seen by the jockey in the most hazy weather: and further, they should be painted white, and each post should be guarded by a bank around its base to keep the horses from running against it. To afford room between the posts for horses running abreast, twenty five yards of clear space is recommended: and further, at most popular race-courses, as a convenience to the company assembled, and particularly to the spectators on foot, there is a space of ground, ten or a dozen yards in width, and one hundred or two in length, railed in on the right and left of the course for their use; which is a very good plan, as it protects them from the horsemen and carriages. In coming in on the right of the course, there should be two distance-posts; the first is to be erected two hundred and forty yards from the winning-post; the second, a hundred and twenty from it. The first of these posts is the distance-post, when the horses are running four miles; the second becomes the distance-post when they are running two miles. Near to, in the rear of the winning-post, should be a small wooden building, erected for the judge to stand in, to decide which horse comes first in the race. There should be to each of the distance-posts a similar but a more temporary sort of a stand. Each of these temporary stands may be made by putting two posts at a suitable distance in the rear of each distance-post, with a piece of board in the centre; but this board at each of these posts should be two or three feet higher than the floor of the judge's stand, so that the man in the distance-stand may clearly see the winning-post, and be ready to drop the distance-flag immediately with that at the winning-post. Mr. Darvill in his work also offers some perspicuous direction on the rendering the turns in a course less difficult and dangerous than they sometimes are. (See p. 256.)

1299. *The stand, which is so attractive a feature on every race-course*, next engages his attention; and if the framers of every new race-course do not avail themselves of the plans and instructions he sets out so clearly in his valuable work on *Training*, it will be their own fault if they afterwards find out their loss: — "The stand," he observes, "which is erected for the accommodation of the spectators, is generally placed on the right of the course. The under part may be conveniently arranged for the vending of refreshments, and should be built at a distance of from twenty to five and twenty yards in the rear of the rails of the course. Its height and dimensions must, of course, depend very much on the extent or importance of the meeting held in the neighbourhood. Close up to, and in a parallel line with, the rails of the course, and opposite the centre of the grand stand, should be erected a small round building, eighteen feet in circumference, clear of the walls, and should be eighteen feet high. This building being divided by a floor in its centre, the lower part is for a weighing-house (the door of which should face the stand); the upper part, when there is room, serves for a stand for the stewards. In the centre, or in the front of the weighing-house, as occasion suits, the scales and weights should be placed. One scale is, in some cases, made in the form of a chair, and is suspended the same height from the ground, as the seat of a chair would be, with a half back made round in the form of an arm-chair; and an iron triangle of proper dimensions should be fixed to the end of the beam, for the purpose of keeping the ropes that are attached to the beam sufficiently extended upwards, so as not to interfere with the jockey's head when he is weighing. This would be much more convenient, as he could more readily sit down in this scale, take his saddle and trusses in his lap, and weigh with more dispatch, and with less difficulty, than with scales in the common way." (Vol. i. p. 261.) The space between the weighing-house and the grand stand, is to be formed into a yard covered with gravel, and inclosed by rails about four feet high. This inclosure should extend about ten feet beyond each extremity of the front, observing to leave two openings for entrance; one near the judge's stand, for the jockeys to ride their horses through to get to the scales to weigh, and one near the stand, for the horses to pass through in going to the rubbing-house. After the horses are ridden into the yard, the gates are closed for the purpose of preventing the foot-passengers from passing in and crowding round the horses, which they are apt to do while the riders are weighing, an annoyance every frequenter of race-courses must have seen. Indeed, into this inclosure, called the "weighing-yard," no one should be admitted, but those directly concerned in the race, or the business in hand. Having proceeded thus far, we would caution every jockey to stick steadily on his horse's back until the moment of dismounting at the scales. Indeed, it would be unpardonable in a regular jockey to dismount, until he has ridden his horse past the winning-post in going to the scales.

1300. *Few country race-courses*, excepting those of much notoriety, exhibit all the conveniences noted by Mr. Darvill, at least not in the admirable order in which he has placed them. A country race-course of moderate pretensions only, drawn from a sketch in our possession (*fig.* 198.), presents the *winning-post*, and the gable of a large barn-like building opposite to it. In wet and tempestuous weather this building was used as a *weighing-house* and a *rubbing-house.* In fine weather the *scales* were suspended without the building, as seen in the cut; and it is likely, that as much amusement, with infinitely less villany, might have been witnessed here as at Epsom or Ascot. Without actual inspection, few persons could imagine the difference of the exhibition, in all its parts, as it is seen at Epsom and Newmarket, and as it is viewed at a minor country meeting. Our figure is purposely offered as an exemplar of the latter; and, as being a real delineation, it may not be considered out of place.

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WEIGHING-HOUSE.

1301. *The rubbing-house* is directed to be about two or three hundred yards beyond the weighing-post. It is also used on some courses as the saddling-house, and from its situation is conveniently apart from the noise and bustle of the crowd. It is also a most important appendage to the great training establishments in the neighbourhood; for here such horses as are not very near home can stop and be scraped, instead of risking the cold in their return. Mr. Darvill's further instructions extend to all other particulars required in the formation of a popular and convenient race-course, and no one at all concerned in this matter can do justice to himself without referring to this most excellent work, which deserves to be called *The True Turf Guide.*

1302. *The stewards are very important appendages to racing meetings.* They are usually selected from among the most influential nobility and gentry of the country around the racing locality, and particularly from such as patronise racing. The office is a very honourable one, and the stewards of the last year in most cases, but not in all, recommend those of the following year. It is very necessary that some of those that are elected should be conversant with racing affairs, but more particularly with the general laws which govern racing, and such also as are local. It is equally necessary that some of those which are chosen, should be popular among the gentry for urbanity, and a strict adherence to etiquette and the laws of good breeding. It is on such that devolve the arrangements of dinners, assemblies, and general parties during the race week. They have to mix the *suaviter* and the *fortiter* in such a manner that, while no infraction of order and good breeding passes unchecked, no serious offence is given. Those among them who take on themselves the regulation of the turf concerns, have also much to do in overseeing the necessary preparations of the course with its appurtenances; and although such matters devolve by right on persons specially appointed thereto, yet, if any neglect occurs, the outcry is against the stewards. It is they also who regulate the times of meeting for business, as when the horses are to start, &c. All disputes are settled by them, and it is for them to check all irregularities; it is therefore essentially necessary that they should be on the spot at every important period. They also are accountable that all the funds run for in the meeting are paid before the horses start.

1303. *The clerk of the course is also a very efficient officer under the stewards.* He should be an amateur in racing matters, and should well understand all the rules and regulations of the Jockey Club, as well as any particular rules and articles entered into relative to plates, stakes, and matches, that are to be run for at the meeting. He is expected to see that the course is in proper order, and that any new regulations made by the new stewards are enforced. It devolves on him to note that every horse is duly qualified, agreeably to the articles and rules, as to age and pedigree, for the race for which he is entered, according to the certificates produced. It is to him also that is intrusted the appointing the subordinates, as the scalekeeper and weigher, rope-men, course attendants and constables.

Subsect. 1. *British Race-courses.*

1304. *The British race-courses are about one hundred and twenty,* of which, according to *The Racing Calendar*, five are in Wales, seven in Scotland, six in Ireland, and the remainder in England. Newmarket is the acknowledged metropolis of racing; Epsom, Ascot, York, Doncaster, and Goodwood, are next in importance as racing localities.

Subsect. 2. *Of Newmarket as the Racing Metropolis.*

1305. *Newmarket town,* once a blank and dreary mass of common dwellings, now sports its lofty mansions of the nobility, and that handsome public building, the Jockey Club New Rooms, figured at p. 371. These edifices, of which there is now no lack, present a remarkable contrast with its former meanness. Of the sporting characters of celebrity who reside there, we have already made some mention in our *History of British Racing*.

1306. *The annual meetings at Newmarket are seven:* — The Craven, which commences on Easter Monday, was instituted 1771; the First Spring meeting takes place on the Monday fortnight following; the Second Spring meeting, instituted 1753, occurs about the middle of May; the July meeting, which is usually early in that month, was instituted 1753; the First October meeting is on the first Monday of the month; the Second October meeting takes place on the Monday fortnight following, and was instituted 1762; and the Third October, or Houghton meeting, instituted 1770, takes place a fortnight later, and usually closes the racing year.

1307. *Of the reputation which Newmarket has long enjoyed* as our principal racing mart, and in proof how highly the sport there was estimated long ago, the following extract from *The World*, vol. i. No. xvii. written by the Earl of Bath in 1753, will furnish an interesting and ample proof: — "When the horses are in sight, and come near Choak Jade, immediately the company all disperse, as if the devil rose out of his ditch and drove them, to get to the turning of the lands, or some other station, for seeing the push made. Now the contention becomes animating: 'tis delightful to see two, or sometimes more, of the most beautiful animals of the creation, struggling for superiority, stretching every muscle and sinew to obtain the prize and reach the goal! To observe the skill and address of the riders, who are all distinguished by different colours of white, blue, green, red, or yellow; sometimes spurring and whipping, sometimes checking or pulling, to give fresh breath and courage! And it is often observed that the race is won as much by the dexterity of the rider, as by the vigour and fleetness of the animal. When the sport is over, the company saunter away towards the Warren-hill, before the other horses, left at the several stables in the town, are rode out to take their evening exercise and their water. On this delightful spot you may see at once above a hundred of the most beautiful horses in the universe, with the grooms and boys upon them in their several liveries, distinguishing each person of rank they belong to. This is, indeed, a noble sight; it is a piece of grandeur, and an expensive one too, which no nation but our own can boast of. To this the Crown contributes, not only by a very handsome allowance for keeping horses, but also by giving plates to be run for by horses and mares at different ages, in order to encourage the breed by keeping up the price of them, and to make the breeders extremely careful of their race and genealogy." If the Augean stable of turf practices could be cleaned out, and if our influential racing amateurs would unite together, and in a body set their faces decidedly against all unfair practices, which tend to blot the annals of the turf, then would this noble sport regain its early popularity, and be again applied to its legitimate purposes, of encouraging our best breed of horses, and in presenting to our breeders of them also their most exhilarating sport, purged from its debasing traits. As it concerns keeping our thorough-bred horses from debasing intermixture, racing is very important; nor is it less so that our national character for probity should not suffer by the nefarious practices of the gentry known under the infamous title of "legs." Racing, as connected with horse breeding, is consequential; by it our reputation among surrounding nations is greatly enhanced, the exportation of horses much increased, and our landed interests benefited. It circulates the money of the wealthy, and it stimulates the industry of the needy,

1308. *The lengths of the different race-courses at Newmarket are as follows*, bearing in mind that 1,760 yards are a mile, 220 yards are a furlong, and 240 yards are a "distance": —

	Miles.	Fur.	Yds.
The Beacon Course is	4	1	138
Round Course	3	4	187
Last three miles of B. C.	3	0	45
Ditch In	2	0	97
The last mile and dist. of B. C.	1	1	156
Ancaster mile	1	0	18
From the turn of the lands, in	0	5	184
Clermont Course (from the Ditch to the Duke's Stand)	1	5	217
Audley End Course (from the starting-post of the T. Y. C. to the end of the B. C.) about	1	6	0
Across the Flat	1	2	24
Rowley Mile	1	2	1
Ditch Mile	0	7	178

	Miles.	Fur.	Yds.
Abingdon Mile	0	7	211
Two middle miles of B. C.	1	7	125
Two-year old Course (on the flat)	0	5	136
New ditto (part of the Bunbury Mile)	0	5	136
Yearling Course	0	2	47
Bunbury Mile	0	7	208
Chesterfield Course	0	3	212
Bretby stakes Course	0	6	0
Cesarewitch Course	2	2	28
Cambridgeshire Course	1	0	240
Champion stakes Course	1	3	219
Suffolk stakes Course	1	4	2
Bedford stakes Course	0	5	162

Sect. V. *Principal Race-courses in England.*

1309. *Ascot Heath.*—"A circular course, exactly two miles; the last mile of which forms the old mile. The new mile is straight, rising all the way, and measures 7 fur. 150 yds. The T. Y. C. (part of the new mile) is 3 fur. 95 yds. The ground remarkably well kept, the races are graced by royalty, and splendidly attended." This race-course has long proved the chosen resort of royalty. Being at a greater distance from London than Epsom, it long attracted a more select company than was usually witnessed at the latter place; but the easy access to it by railway of late years has now rendered the difference in this respect less perceptible. The promenade on the course forms a very great attraction; and on the racing days it vies even with Kensington Gardens for its display of beauty and fashion. "It is at Ascot," said Pierce Egan, "delightful Ascot races, where the public have the opportunity of beholding his majesty, and of hearing his remarks without the least reserve. The course at Epsom races, on the Derby Day, displays thousands of well dressed persons, with plenty of dash, and here and there sprinkled with some fashionable folks; and is, in reality, a most beautiful and interesting sight: but on Ascot Heath the splendour of the scene is unrivalled, and the truth is verified to the echo which applauds again, that the king's name is a tower of strength. Ascot may be deemed the rallying point for all the nobility and gentry, for miles round Windsor, to pay homage to their beloved monarch, who may be there seen at his ease, divested of the paraphernalia and etiquette of the court, habited like a private gentleman, easy of access, and conversing with the utmost affability and attention to all his auditors." A new challenge prize was presented by his late majesty William the Fourth in May, 1832, to be run for at the ensuing Ascot meeting. This prize consisted of a very handsome piece of plate, bearing the real foot of Eclipse. We present the pillar also on which the foot rests (*fig.* 199.), and the salver made to receive it: the whole being in every respect worthy of the trophy it bears, and emblematic of the taste and munificence of the kingly donor. Nor can we omit the mention of a characteristic trait of *naïveté*, and of the force of early impressions, which is related of his majesty, who, during these races, being asked how many of his horses should start for a certain plate, immediately replied, "Oh! let all the fleet run."

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ECLIPSE'S FOOT AND SALVER.

1310. Brighton has two courses, the old and the new, and the races here are well attended.

1311. *Buxton*, which presents a circular course of one mile, is principally supported for local purposes by the surrounding gentry. It sometimes sports some good horses of the class which frequent country races.

1312. *Chelmsford* offers an oval course, wanting thirty yards of two miles; but, by starting between the distance-post and the winning-chair, it becomes two full miles.

1313. *Cheltenham* has also a course, where the races, for three days in June, are usually well attended. The *Bibury Club* use this course on one of these days.

1314. *Chester.*—A circular course of one mile, over a perfect flat. It is said, that in point of racing antiquity, the *Roode of Chester* claims the palm from all other localities whatever. The race-ground is a remarkably pleasant one, and always exhibits a brilliant assemblage of good company; and as the sport lasts five days, although the course, on account of its formation and awkward turns, is unfavourable to horses, and particularly so to long-striding goers, it is not to be wondered at that Chester races rank high in the annals of sporting.

1315. *Doncaster as a racing fixture stands conspicuous*. It presents a very grand stand (see *fig.* 137. p. 230.), and a circular course of 1 mile, 7 fur. 70 yds. The other courses are formed of portions of this circle, namely, Red House In, 5 fur. 164 yds.; T. Y. C. 7 fur. 189 yds.; Fitzwilliam Course, 1 mile, 4 fur. 10 yds.; St. Leger Course, 1 mile, 6 fur. 132 yds.; Two Mile Course, 2 miles, 25 yds.; Four Mile Course (twice round), 3 miles, 7 fur. 219 yds. Epsom does not offer more excitement to the London gentry than Doncaster does to the turfites of the north. Many southerns also of every rank visit it; and, during the five days its racings last, the town is crowded beyond measure, and the course exhibits a galaxy of fashion and splendour. The greatest interest is excited on the second day, when the great St. Leger stakes are run for. "This popular race was instituted in the year 1776 by the late Colonel St. Leger, of Park Hill, near Doncaster; but it was not until three years afterwards that it was called the St. Leger, which was named by the late noble Marquis of Rockingham, at a dinner at the Red-Lion Inn, then the head inn of Doncaster, on the entry day, in compliment to the gentleman with whom the race originated." Doncaster race-course presents singular features. It immediately abuts on a large and handsome town; and the excellent arrangements made by the local authorities, prevent those scenes of low rioting and shameless pilfering which disgrace Epsom, Ascot, and other courses nearer to the metropolis. Probably, were it not that it is a great *northern gathering*, five consecutive days of racing might tire; but the interest excited by the Great St. Leger is alone sufficient to attract the nobility and gentry from every part of England. The *holiday division*, so called to distinguish them from the pure *racing fancy*, principally resort to Doncaster on Wednesday, when the great cup is run for.

1316. *Egham.*—A flat oval course, sixty-six yards short of two miles.

1317. *Epsom.*—The race-course is two miles in length, the last mile and a half of which is the Derby and Oaks Course. The Craven Course is one mile and a quarter of the same ground. Epsom Course can be properly called neither circular, oval, nor triangular. It is altogether one of the worst courses in England. The ground is, however, better kept than formerly. Perhaps no country spot in the known world exhibits at once so gay and so numerous an assemblage as is annually seen here. London is drained of her horses and carriages to such a degree, that a postchaise, during the races on one occasion, could not be obtained to proceed on an emergency twelve miles out of town, although 5 guineas were offered for its hire. The Derby and Oaks stakes run for here, are objects of great importance to the turfites. The gold cup is also a considerable attraction; in fact the numerous prizes contended for at the two meetings are too numerous, and indeed unnecessary, for us to particularise. Nimrod, after his descriptive manner, thus observes on the advantages of Epsom as a turf fixture: — "Independently of seeing him run, amateur admirers of the race-horse have here a fine opportunity of studying him in the highest state of his perfection. We allude to the place called the Warren, in which the Derby and Oaks horses are saddled and mounted. It is a small, but picturesque piece of ground, in the forest style, inclosed by a wall, and entered by all who choose to pay a shilling. To some it is a great treat to see the celebrated Newmarket jockeys, who may be only known to them by name. A view of half the aristocracy of England also is, even in these times, worth a shilling to many. The sporting men, meanwhile, reap much advantage from their anxious inspection of the horses as they walk round this rural circus. They can closely observe the condition of their favourites; and should any thing dissatisfy them, they have a chance to hedge something before the race is run, although the ring is generally broken up about the time the horses are assembled in the Warren. (*Quarterly Review*, No. xcviii. p. 430.) Epsom has two annual meetings, but that of October bears no comparison in popularity of turf interest to the May meeting. The grand stand of Epsom race-course is an object of universal admiration, and of itself presents a striking monument of the racing mania in this country. It is the largest in Europe, and is said to be assessed to the poor's rate at 500*l.* per annum. The stewardship of the Epsom Course is vested in resident neighbouring landowners of high position, an advantage that will be best appreciated by those who have seen the powerless management of inefficient and often ill-supported clerks of courses elsewhere. Of late years a change has taken place in the day of the week on which the Derby is run, which has greatly added to the interest of the Oaks. Of the four racing days, from Tuesday to Friday inclusive, the "Derby" takes place on the second, and the "Oaks" on the fourth. When the Derby day was Thursday, the Oaks commonly proved a listless, worn-out, lack-a-daisical affair, or something like the day after the feast: the public tired, the horses stale, the finery tarnished, the stands half filled, and the provisions short and uninviting. By suffering a day to intervene, the pleasure-seekers get time to "shake their feathers," the jaded posters a little needful rest, the caterers to provide creature comforts worthy the occasion; and the Oaks, as a general result, instead of submitting to a second-hand reputation, has become a "grand" day on its own account. The stakes run for in the Oaks have recently rivalled in amount those of the Derby, and sometimes surpassed them. A few years ago we remember that they were upwards of 4000*l.*

1318. *Goodwood* exhibits an excellent race-course, and the immense sums spent on it by the Duke of Richmond have not been thrown away: on the contrary, under his auspices, not only is the course one of the best in England, but the races of Goodwood yield to no country meeting in the south of England in point of celebrity, and in the number and fashion of its visitors. The horses seen there are also many of them of the first order; and the value of the stakes, particularly those called the Drawing Room, the Goodwood, and the Cup, are not unworthy the rivalry of the best racers of the day. His late majesty George the Fourth was particularly attached to these races; and here his early predilections in favour of the turf were gratified, without fear of any of those mortifications he had met with elsewhere.

1319. *Lancaster race-course* is circular, and a mile in extent. The turf is good, and it congregates a few good country horses, a few gentry, and lots of bumkins.

1320. *Leeds race-course* is also circular, extending 1 mile, 2 fur. 48 yds. "There is also a straight course through the centre of the circular one, of 2 fur. 158 yds.; which, uniting with each half of the circle, forms two other courses, in the form of a sector, being 1 mile, 11 yds.; the other, 1 mile, 135 yds."

1321. *Liverpool.* — "The Old Course is an oval mile, flat, and of very good turf. The New Course is one mile and a half, forming an ill-defined oblong square, and though nearly flat, is a very distressing course for horses. It is a new establishment: races were held upon it in 1829 for the first time." The two courses, the Old and New, are situated two miles asunder. This important town has two race meetings in the year, which are every season more and more attended; and the spirit and enterprise with which every thing connected with the sport is conducted, well deserves general turf patronage.

1322. *Manchester* has an oval course of 7 fur. 184 yds. It is said that neither the course, the sport, nor the management of the concern is good.

1323. *Newcastle.* — An irregular square course, 1 mile, 6 fur. 132 yds.

1324. *Nottingham.* — A circular course, 1 mile, 2 fur. 11 yds. By no means a sporting fixture.

1325. *Oxford.* — A flat oval course, wants a distance of 240 yds. of two miles long.

1326. *Stockbridge.* — Two courses over a hilly country. One straight, a mile long; another circular, of a mile and one-quarter extent.

1327. *Warwick* is among the number of towns where racing seems on the increase. The meetings are held for three days in September, and are usually well attended.

1328. *Wolverhampton* offers a tolerable race-course, and the sport there is on the increase also. Some good country race-horses visit it, and both the stakes and the company are respectable.

1329. *York.* T. Y. C. 5 fur. 59 yds. Mile Course, 1 mile, 8 yds. Last mile and quarter, 1 mile, 2 fur. 15 yds. Last mile and half, 1 mile, 4 fur. 18 yds. Last mile and three-quarters, 1 mile, 5 fur. 160 yds. Two-mile Course, 1 mile, 7 fur. 85 yds. Four-mile Course, 3 miles, 7 fur. 24 yds." Notwithstanding this populous locality and its sporting vicinity, neither the course, the attendance, nor the running, is of the first order. In bad weather the ground is very heavy.

1330. An attempt was made to establish race meetings, and also a training locality, within two miles of the metropolis. To this intent a large portion of land was treated for and engaged close to Notting Hill. Here stabling and boxes for about seventy-five race-horses were erected, with every convenience for a training establishment, a very good race-course formed, and numerous stakes were run for on it in 1838. But unfortunately, the projectors overlooked one circumstance at once fatal to the Hippodrome (as the establishment was named), the soil was a deep strong clay, so that the training ground could only be gone on by horses at particular periods. This was a difficulty not to be got over, and, as a race-course, the Hippodrome closed its short career, doubtless with heavy loss to its projectors.

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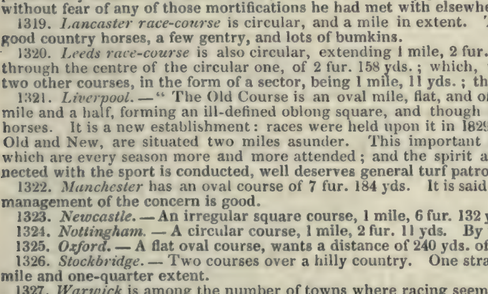

HIPPODROME OF LONDON.

1331. *At Blandford, Basingstoke, Lewes, Southampton, Pontefract, Preston*, and many other places, racings annually take place, but they are not sufficiently important to need particular notice.

SUBSECT. 1. *Welsh, Scotch, and Irish Racing Localities.*

1332. *In Wales* the leading ones are Brecon, Cardiff, Knighton, Swansea, and Wrexham.

1333. *In Scotland* Airdrie, Royal Caledonian Hunt and Western meeting, Kelso, Lanark, Lothians Club and Edinburgh, Paisley and Perth.

1334. *In Ireland* Bellewston, the Curragh of Kildare, Down Royal Corporation (Maze Course) Heath, Howth, and Baldoyle, and Jenkinstown Park.

Sect. 6. — *The Rules and Regulations which govern Racing.*

1335. *The hippodromes of Greece and Rome were governed by fixed laws,* some of which appear to have been kept in view by our own turfites. Royal ordinances have also from time to time regulated and protected the sport among us. But it certainly owes its present systematic code to a very influential body of sporting characters, ranked under the title of the Jockey Club, who are conservators general of everything appertaining to racing, and whose orders and decisions are final and imperative. A retrospective view over the last five and twenty or thirty years cannot fail to show that, though the patrons and followers of the turf have increased amazingly within that time, yet that the *morale* of the thing, if we may so express it, has not kept pace with the expansion. On the contrary, too many of the recruits, as well horse-owners as betters, are men whose characters do not add lustre to what they attach themselves to; and after various modifications of the existing laws, in order to meet particular suspicious cases as they occurred, it was at length deemed advisable to reconsider the whole code and report on the same. In consequence of this decision, a general meeting of the Jockey Club was held at Newmarket on Wednesday, in the Craven Meeting, 1858, to receive the report, &c., of the committee appointed on the 4th of December, 1857, to take into consideration the rules and orders of the Jockey Club, and rules concerning horse racing in general; present —

The Marquis of Anglesey, Steward.

Mr. Barne,
Mr. Batson,
Lord Chesterfield,
Lord Clifden,
Mr. Stirling Craufurd,
Lord Glasgow,
Mr. Lowther,
Mr. Payne,
Admiral Rous,
Capt. Savile,
Lord Stradbroke,
Lord Wilton,
Lord Zetland.

1336. The rules as revised and newly arranged having been read at length, it was unanimously resolved that they shall come into operation on Monday, April the 19th, 1858, being the Monday in the First Spring Meeting, and that all former rules of the Jockey Club are repealed on and from that day.

Rules concerning Horse Racing in general.

1. Race horses take their ages from the 1st of January.

2. *Catch weights.* — Catch weights are, each party to appoint a person to ride without weighing.

3. *Feather.* — A feather weight shall be considered 4st. 7lb., and the usual declaration must be made when the jockey carries more than that weight.

4. *Maiden horses.* — A maiden horse or mare is one that has never won a plate or sweepstakes.

5. *Plates.* — A plate is any prize given to be run for, without any stake being made by the owners of the horses to go to the winner.

6. For a plate no person can run, either in his own name, or in that of any other person, two horses of which he is wholly or in part owner, unless permitted to do so by a special clause in the conditions.

7. *Sweepstakes.* — Where a stake is deposited by the owners of the horses, which is to go to the winner, such race is a sweepstakes, and if an additional sum of money, cup, piece of plate, or other reward be offered to the winner, the race is still a sweepstakes, though such addition should be denominated a plate by the donor.

Three subscribers make a sweepstakes, and if a stake has the required number of subscribers at the expiration of the time of closing, and the number is afterwards reduced by death (or, in the case of a produce stake, by failure of produce), the race is not void as long as there are two horses left, the property of different persons, and if the number is reduced to two it is still a sweepstakes.

8. *Post match or sweepstakes.* — For a post match or sweepstakes each subscriber names two or more horses of the proper age, but can only run one, unless a greater number is allowed by the conditions of the race.

9. *Omissions, how supplied — of weight.* — When any match or sweepstakes shall be made, and no weight mentioned, the horses shall carry 8st. 7lb. each, and if any weight is given the highest weight shall be 8st. 7lb.

10. *Of Course.* — When any match or sweepstakes shall be made and no Course mentioned, the Course shall be that which is usually run by horses of the same age as those engaged, viz.: —

	If at Newmarket.
If yearlings, two furlongs	Y.C.
If two years old, six furlongs	T.Y.C.
If three years old, one mile	R.M.
If four years old, two miles	D.I.
If five years old or upwards, four miles	B.C.

And if the horses should be of different ages, the Course shall be fixed by the age of the youngest.

11. *Of day.* — If no day is mentioned for a race it shall be run on the last day of the meeting, unless otherwise agreed by all the subscribers.

AS TO NOMINATIONS.

12. *Description necessary.* — In all nominations for sweepstakes and plates, the horse or mare entered must be clearly identified. The name of the sire and dam must be given, and if the dam has no name in the *Racing Calendar* or *Stud Book*, such further pedigree and description must be added as will distinguish the horse intended to be named from any other of a similar pedigree. If the dam was covered by more than one stallion, the names of all of them must be mentioned.

13. *When the name is sufficient.* — If a horse has once been entered with his name and pedigree in a race published in the *Racing Calendar*, it will be sufficient afterwards to mention him by his name only, even though he has never started; and in entering a horse for the first time by his name in several races closing at the same time, it will be sufficient to give his pedigree in one of these nominations, and his name only in the others.

14. *When the age must be mentioned.* — In naming for a race in which horses of different ages are admitted, the age of the horse named must be mentioned.

15. *Nomination of foreign horse.* — No horse foaled out of the United Kingdom shall run for any race until his owner has produced a certificate of some racing club of the country where the horse was foaled, or from the mayor or other public officer of the district, stating the age, pedigree, and colour of the horse, and the marks by which it is distinguished.

16. *Incorrect or insufficient description a disqualification.* — If any horse, &c., shall be named or entered

without being identified as before directed, he shall not be allowed to start in the race, but his owner shall be liable to pay the forfeit, or, if a play or pay race, the whole stake.

17. *Fraudulent entry a perpetual disqualification.*— If a horse shall fraudulently run, or be entered to run, for any race by a false description, such horse is thenceforth disqualified for running in any race; and the owner shall be compelled to return any sum of money won in plates, matches, or sweepstakes (whether handicap or not), which the said horse may have won.

18. *Qualification dates from time of closing.* — In naming or entering for any race where there shall be any particular conditions required as a qualification to start, it shall be sufficient if the horse were qualified at the expiration of the time allowed for naming or entering, and he shall not be disqualified by anything which may happen after the expiration of that time, unless so specified in the article; or unless he becomes disqualified under the rules relating to defaulters.

If a brood mare engaged in a produce stake drops her foal before the 1st of January the nomination is void, and if she has a dead foal or is barren, the nomination is void.

19. *Nominations not to be changed after closing.*— No person who has once subscribed to a stake shall be allowed to withdraw his name, and no nomination shall be altered in any respect after the time of closing, without the consent of all the parties in the race.

20. *Exception to preceding Rule.* — When a person takes a nomination for a stake in which the forfeit is to be declared by a particular time, and does not declare forfeit by the time fixed in the article, he shall thenceforth be considered to have taken the engagement on himself, and his name shall be substituted for that of the original subscriber.

21. *Use of fictitious names.* — When any person enters a horse, or subscribes to a stake under a fictitious name, or in the name of a person not fully identified at the time, he shall be considered in all respects as the owner of the horse, and as the subscriber to the stake; and in the event of the forfeit not being paid, his real name shall be published in the Forfeit List.

22. *Nominations not required to be made on Sunday.* — When the day fixed for the closing or naming for any stake, or for declaring forfeit or produce shall fall on Sunday, subscriptions, nominations, or declarations for such stake may be received on the following day, provided that there is an interval of one clear day between the day of closing, naming, or declaring, and the day of running.

23. *Void by death.* — All nominations are void by the death of the subscriber.

24. *Allowances to produce of untried horses or mares.* — In every sweepstakes in which there shall be an allowance of weight to the produce of untried horses or mares, it shall extend to horses or mares whose produce never won, but such allowance shall be claimed by the subscriber before the expiration of the time of naming; and if not so claimed, no allowance shall be made.

RESPECTING STAKES AND FORFEITS.

25. *Stakes to be made before starting.* — All stakes shall be made before starting, in cash, bank bills, or bankers' notes, payable on demand, and be paid into the hands of the person appointed by the Stewards to receive the same; and in default thereof by any person, he shall pay the whole stake as a loser, whether his horse came in first or not, unless such person shall have previously obtained the consent of the party or parties with whom he is engaged, to his not staking.

And forfeits in certain cases. — When any person has more than one nomination in a stake, he shall not be allowed to start any horse for it unless the forfeits be paid for every horse which does not start, belonging to him, or standing in his name, or in the same name as the horse which runs, as well as the stakes for those which do.

26. *Arrears of owner or namer to be paid before starting.* — No person shall start a horse for any race, either in his own name or in that of any other person, unless both the owner and namer of such horse shall have paid all former stakes and forfeits. And this rule shall extend to forfeits due elsewhere than at the place of running, provided a notice of such forfeits being due shall have been published in the Forfeit List, or have been delivered to the Stakeholder or Clerk of the Course by ten o'clock in the evening preceding the day of running.

27. *Arrears due for a horse to be paid before he can start.* — No horse shall start for any race unless all former stakes and forfeits due for that horse shall be paid before starting, provided notice has been given as above.

28. *These rules extend to Ireland.* — These rules relative to arrears of stakes and forfeits extend to forfeits due at the Curragh and other established meetings in Ireland.

THE FORFEIT LIST.

29. *To be published in Racing Calendar.* — A list of unpaid forfeits, with the names of subscribers to the stake, and the name or description of the horse, with the name or sufficient description of the stake, and the amount of the forfeit, shall be advertised in the *Sheet Racing Calendar* after the Newmarket July and Houghton Meetings every year.

30. *By whom Lists of Forfeits are to be sent for publication.*— The person appointed to receive stakes is to send to Messrs. Weatherby a list of unpaid forfeits, as soon after the races as conveniently may be, in order that the same may be placed upon the Forfeit List; and if he shall omit to make such last-mentioned return within a reasonable time, it may be made by the respective winners of the races for which the forfeits are due. These returns in all cases to be made in writing, and signed by the parties making them.

31. *Persons appearing in Forfeit List not entitled to enter.*— No person whose name shall appear in the published Forfeit List shall be entitled to enter or run a horse for any plate, sweepstakes, or subscription, either in his own name or in the name of any other person, until he shall have paid up all the forfeits, in respect of which his name appears in the list.

32. *Horses appearing in Forfeit List not qualified to be entered.* — No horse which appears in the published Forfeit List shall be qualified to be entered or to run for any race whatever until the forfeits mentioned in the said list as due for such horse shall have been paid.

33. *Suspected nominations may be struck out.* — In order to prevent persons who are defaulters from evading these laws, and continuing to engage horses by the use of fictitious names, the Stewards shall have the power of calling upon a nominator to produce satisfactory testimony that the horse named is not the property, either wholly or in part, of any person whose name appears in the advertised list of defaulters, and if the nominator shall fail to do so, the Stewards may cause the nomination to be erased.

34. *Liability for engagements of horses sold.* — When a horse is sold with his engagements, or any part of them, the seller has not the power of striking the horse out of the engagements with which he is sold; but as the original subscriber remains liable to the respective winners for the amount of the forfeits in each of these engagements, he may, if compelled to pay them by the purchaser's default, place the forfeit on the Forfeit List in the usual manner, as due from the purchaser to himself; and until this forfeit is repaid, both the purchaser and the horse remain under the same disabilities as if the purchaser had been the original subscriber.

In all cases of sale by private treaty, the written acknowledgment of both parties that the horse was sold with the engagement is necessary to entitle either buyer or seller to the benefit of this rule; but when the horse is sold by public auction the advertised conditions of the sale are sufficient evidence, and if he has been claimed as the winner of a race of which it was a condition that the winner was to be sold with his engagements, this also is sufficient.

35. When a person has a horse engaged in the name of another person, and is entitled by purchase or otherwise to start the horse for such engagement, but is prevented by any of the preceding laws from starting his horse without previously paying up forfeits to which he is not otherwise liable, he may, if he pay these forfeits, start his horse and have the forfeits, with the names of the horses for which they are due, placed on the Forfeit List in the usual manner as due to himself.

WEIGHING.

36. The name of every horse intended to start must be notified to the Clerk of the Scales, and his number

be exhibited one quarter of an hour before the race, and if any alteration be made in the numbers after they have been exhibited the Stewards may call upon the owner or trainer for an explanation. If this is not satisfactory, the owner, or trainer, or jockey, may be fined, at the discretion of the Stewards, in any sum not exceeding 25*l.*, and the horse shall not be allowed to start, nor the jockey to ride again until the fine is paid.

37. *To weigh before and after the race.* — Jockeys are required to weigh at the usual place of weighing, before the race, unless excused by the Stewards for some special reason, when the fact must be notified to the Clerk of the Scales, and every rider is, immediately after the race, to ride his horse to the usual place of weighing, then and there to alight, and not before, and to weigh to the satisfaction of the person appointed for that purpose; and if the jockey dismounts before, or is short of weight, his horse is disqualified, unless he be disabled by an accident to himself or horse which should render him incapable of riding back, when he may walk or be carried to the scale.

It is optional for the jockey to weigh with his bridle, and the Clerk of the Scales will allow 1 lb. for a curb or double bridle, but no weight is allowed for a snaffle bridle unless it is put into the scale before the horse is led away.

38. *Overweight.* — Each jockey shall be allowed 2 lb. above the weight specified for his horse to carry, and no more, unless a declaration has been made to the Clerk of the Scales of the extra weight the jockey is about to carry, one half hour before the time fixed for the said race, and the extra weight shall be appended to the horse's number when it is put up. In default of such declaration, the horse carrying more than 2 lb. over his specified weight shall be placed as the last horse in the race, the jockey shall be fined 5*l* for his neglect, and shall not be allowed to ride until the said fine be paid; and the weight each horse actually carried, if more than 2 lb. above his weight, shall be published in the first list printed after the race, and also in the *Racing Calendar*.

39. *Raising weights in handicaps.* — In all handicaps with twenty subscribers, when the highest weight accepting is under 8 st. 12 lb., it is to be raised to that weight, and the others in proportion; but in all minor handicaps and in two-year-old handicaps, when the highest weight accepting is under 8 st. 7 lb., it is to be raised to 8 st. 7 lb., and the others in proportion.

STARTING.

40. *Horses going to the post to be considered starters.* — When the riders of the horses brought out to run for any race are called upon by the person appointed to start them to take their places for that purpose, every horse which comes up to the post shall be liable to his whole stake.

41. *Power of the Starter.* — The Starter has authority to order the jockeys to draw up in a line as far beyond the starting post as he may think necessary, and any jockey disobeying the orders of the Starter, or taking any unfair advantage, may, on the complaint of the Starter, be fined for the first offence 5*l.*, for the second 10*l.*, for the third 25*l.*, and for the fourth may be suspended from riding at the discretion of the Stewards.

42. *Foul riding.* — If in running for any race one horse shall jostle or cross another, such horse is disqualified for winning the race, whether such jostle or cross happened by the swerving of the horse, or by the foul and careless riding of the jockey or otherwise; and where one horse crosses the track of another it is deemed a disqualification, unless he be two clear lengths, or more, before the horse whose track he crosses. And if such cross or jostle shall be proved to have happened through the foul riding of the jockey, he shall be subject to such punishment as the Stewards may think fit to inflict.

43. *When complaints must be made.* — All complaints of foul riding must be made either by the owner, jockey, or groom of the horse, to one of the Stewards, to the Judge of the race, to the Clerk of the Course, or to the person appointed to weigh the jockeys, before the jockey complaining is weighed.

44. Horses running on the wrong side of a post and not turning back are disqualified.

SECOND HORSE.

45. *Money for second horse.* — When it is a condition of a stake or plate that the owner of the second horse shall receive a certain sum of money *out of the stakes* or *out of the plate*, and the race is walked over for, or no second horse is placed, the winning horse is entitled to the whole prize. If the money advertised to be given to the second horse is a separate donation from the Race Fund or other source, and the race is walked over for, or no second horse is placed, the money is not given at all.

When the entrance money for a plate is advertised to be given to the owner of the second horse, and the plate is walked over for, or no second horse is placed, the entrance money is to be returned.

DEAD HEATS.

46. *When to be run over again.* — If for any plate or sweepstakes, not to be run in heats, the first two or more horses shall come in so near together that the Judge shall not be able to decide which won, those horses shall run for such prize over again, after the last race on the same day; the other horses which started are deemed losers, and are entitled to their respective places, as if the race had been finally determined the first time.

47. *Effect of dividing after a dead heat.* — When horses run a dead heat for a sweepstakes or plate, and the parties agree to divide the stakes, such horses shall be liable to carry extra weight as winners of that race, and if there is any money for the second horse they divide that also.

48. *Dead heat for second place.* — When horses run a dead heat for the second place they divide any money that may be payable to the second horse, and if there is any money for the third, they divide that also, and if any of these horses run for a race in which there is a penalty for having received a certain amount of money as second horse, they shall be considered as having received only the amount of their respective shares.

HEATS.

49. When a race is run in heats, a horse, to win the prize, must be the actual winner of two heats, unless no horse appear against him, when one walk over is sufficient.

50. In running of heats, if it cannot be decided which horse is first, the heat goes for nothing, and they may all start again, except it be between two horses that had each won a heat.

51. When two horses have each won a heat, they only must start for a third, and the preference between them will be determined by it.

52. When a plate is won by two heats, the preference of the horses is determined by the places they get in the second heat.

53. When three heats are run, the horse is second that wins one heat.

54. Horses drawn before the plate is won are distanced.

55. No distance in a third heat.

56. No person shall start more than one horse of which he is the owner, either wholly or in part, and either in his own name or that of any other person, for any race for which heats are run.

SELLING STAKES.

57. *How the winner is to be claimed.* — When it is made a condition of any plate or sweepstakes that the winner shall be sold for any given sum, the owner of the second horse being first entitled, &c., no other person than one who ran a horse in the race shall be entitled to claim. The claim must be made to the Judge, the Clerk of the Scales, the Clerk of the Course, or one of the Stewards present, within a quarter of an hour after the race. The horse claimed shall not be delivered till he is paid for; and he must be paid for by ten o'clock at night on the day of the race, otherwise the party claiming shall not be entitled to demand the horse at any future period; but, nevertheless, the owner of the winning horse may insist upon the claimant taking and paying for the horse claimed.

58. *Claim of beaten horses.* — Any horse running for a selling stake or plate is liable to be claimed by the owner of any other horse in the race for the price for which he is entered to be sold, and the amount of the stake — the owner of the second horse to be first entitled to claim, and the winner to have the last claim.

Horses running for a race which is excepted by special conditions from the operation of this rule, are not qualified to be entered for a handicap at any meeting professed to be subject to the established rules of racing.

59. No person can claim more than one horse in the same race.

60. If two or more persons equally entitled wish to claim, they shall draw lots for the priority.

EXTRA WEIGHTS AND ALLOWANCES.

61. When it is a condition of any race that horses shall carry extra for winning a certain number of prizes during the year, or be allowed weight for having been beaten a certain number of times during the year, such winnings and losings shall date from the 1st of January preceding, and shall extend to the time of starting, unless otherwise specified.

62. *Not accumulative.* — Extra weights and allowances are not accumulative, unless so specified in the conditions.

63. Horses do not carry extra weight for winning a match, and are not entitled to allowance for having been beaten in a match.

64. A horse walking over or receiving forfeit, except for a match, is deemed a winner.

65. *Value of prizes — how calculated.* — In estimating the value of any prize no deduction shall be made, except of the winner's own stake, and of any sum or sums required by the conditions to be paid out of the stakes to the owners of any other horse or horses in the race. The entrance for a plate not to be deducted.

OBJECTIONS TO QUALIFICATION.

66. *Examination of mouth.* — When the age or qualification of a horse is objected to, either before or after running for any race, the Stewards, or those whom they may appoint, shall have power to order an examination of the horse's mouth by competent persons, and to call for all such evidence as they may require, and their decision shall be final, unless they shall sanction the removal of the question in dispute into a Court of Law.

Any person requiring a horse's mouth to be examined must pay the expense of such examination, unless the horse is proved to be of the wrong age, in which case such expense shall be paid by the owner of the said horse.

67 *Objection to qualification — when to be made.*— When the qualification of any horse is objected to by ten o'clock in the morning of the day of starting, the owner must produce a certificate, or other proper document, to the Steward or Clerk of the Course, or to the Keeper of the Match-book if the case happen at Newmarket, before the race is run, to prove the qualification of the horse; and if he shall start his horse without so doing, the prize shall be withheld for a period to be fixed upon by the Stewards, at the expiration of which time, if the qualification be not proved to the satisfaction of the Stewards, he shall not be entitled to the prize, though his horse shall have come in first, but it shall be given to the owner of the second horse. When the qualification of a horse is objected to after that time, the person making the objection must prove the disqualification.

Rules and Orders of the Jockey Club.

RESPECTING THE STEWARDS.

1. *Mode of annual election.* — The three Stewards of the Jockey Club shall be continued in their office till the next annual financial meeting, when the Senior Steward shall vacate after settling the accounts, and shall then name a member of the Jockey Club to succeed him, subject to the approbation of the members of the Jockey Club then present, and at every subsequent financial meeting the Senior Steward shall, in like manner, retire and propose his successor.

2. *In case of death or resignation.* — If any of the Stewards shall die or resign, the remaining Stewards may appoint a member of the Club to succeed the deceased or declining Steward, but such nomination shall be notified to the Club at the first general meeting, and if the appointment meets their approval, the said member shall remain in office until the expiration of his predecessor's time.

3. *Substitute for absent Stewards.* — When only one Steward is present, and neither of the absent Stewards shall have appointed a substitute, the member of the Jockey Club present who has last served the office shall act ex officio.

4. *The Stewards have power — to appoint officers.*— The three Stewards shall have the power of appointing all the public officers and the servants of the Club; the Keeper of the Match-book to receive the stakes and collect the entrance-money, and all other funds belonging to the Jockey Club; and the Stewards shall produce an account of the funds and disbursements of the Jockey Club at the annual financial meeting, and they shall be responsible to the Jockey Club for the correctness of the annual accounts, and for all the money collected as belonging to the Jockey Club.

5. *To fix time of starting.* — The Stewards shall fix the hour of starting for each race at or before nine o'clock in the evening preceding the day of running, and notice of the time of starting is to be fixed up in the Coffee-room immediately afterwards.

6. *For regulation of the Course and Exercise-ground.* — The Stewards have full power to make such regulations as they may think proper in regard to the Course and Exercising-ground.

7. *To postpone races.* — The Stewards of the Jockey Club have the power, in cases of urgent necessity, of putting off the races from day to day until a Sunday intervenes.

8. *To settle disputes at Newmarket.* — All disputes relating to racing at Newmarket shall be determined by the three Stewards; if only two Stewards be present they shall fix upon a third person, being a member of the Club, in lieu of the absent Steward, but the Stewards, if they think fit, may call in any other members of the Jockey Club to their assistance, or may refer the case to a general meeting, if the importance or difficulty of the matter in dispute shall appear to them to require it. The witnesses examined shall be required to sign their evidence, and if either party desires to have a short-hand writer engaged to take down the evidence, the Stewards may (if they think proper) engage a writer at the expense of the person making the request.

9. *May decide cases referred to them from other places.* — If any dispute arising elsewhere shall be referred to the Stewards of the Jockey Club, and they shall think fit to take it into consideration, the matter must relate to horse-racing, and be sent by the Stewards of the Meeting where the matter in question occurred.

10. *Not to decide betting cases.* — The Jockey Club and the Stewards thereof take no cognizance of any disputes or claims with respect to bets.

11. *May warn off the Course.* — The Stewards have a discretionary power to warn any person off the race course at Newmarket, or any premises belonging to the Jockey Club, and in case of such notice being disregarded, to take legal proceedings against the offenders.

12. *Act at Epsom and Ascot.* — The Stewards of the Jockey Club are, *ex officio*, Stewards of Epsom and Ascot.

RESPECTING THE ADMISSION OF NEW MEMBERS.

13. *For the Jockey Club.* — Ballots for the Jockey Club shall take place in the Craven, First Spring, Second October, and Houghton Meetings. The candidate must be proposed and seconded by two members in a meeting previous to the ballot, or in case the ballot takes place in the Craven Meeting, notice of his being a candidate shall be given in the *Sheet Calendar* published next preceding that meeting, and also put up in the Coffee-room on the Monday in that meeting; and notice to be given in writing, and put up in the Coffee-room, on what day the ballot will take place, at least one day before the time of balloting. Nine members (at the least) shall ballot, and two black balls shall exclude.

Members of the Jockey Club being abroad for two or more whole years from the 1st January, shall not be liable for their subscription during their absence.

14. *For the New Rooms.* — The ballot for Members of the New Rooms may be in any of the six established Meetings at Newmarket. Each candidate must be proposed by a Member of the Jockey Club, and his Christian and Surname, and usual place of abode, with the name of the Member proposing him, put up in the Dining and Card-rooms at Newmarket (or in such other place as the Stewards shall appoint) on the day preceding the ballot. The ballot shall be in the morning, between the hours of eleven and one; or in the afternoon, between the hours of four and

six. Members of the Jockey Club only shall be allowed to ballot. Nine Members (at least) shall ballot, and two black balls shall exclude. If eighteen Members ballot, there must be three black balls to exclude.

15. A Member of the Jockey Club, or of any of the clubs in St. James's-street, known by the names of White's, Brookes's, and Boodle's, may be admitted a Member of the New Rooms without ballot, by applying to Mr. Weatherby, Keeper of the Match-book, and paying the same sum for his admission, and the same subscription, as are required of Members chosen by ballot.

16. *For the Coffee-room.* — The ballot for Members of the Coffee-room shall be in the Coffee-room at Newmarket (or at such other place as the Stewards shall appoint) on any day in the present six established Meetings, between the hours of eleven and one o'clock in the morning. Each candidate must be proposed by a Member of the Jockey Club, and his Christian and Surname, and usual place of abode, with the name of the Member proposing him, be put up in the Coffee-room the day before the ballot. Members of the Jockey Club only can ballot. Nine Members (at least) must ballot, and two black balls shall exclude.

17. A person, though chosen, shall not be considered as a Member of any of these Clubs until he shall have paid the usual sums for the admission and subscription of a new Member. And the name of every Member whose subscription shall be in arrear for one year shall be placed over the chimney-piece in the New Rooms and in the Coffee-room at Newmarket, in the Craven Meeting in each year. And if such arrear be not paid at the end of the following Spring Meeting, he shall cease to be a Member, and shall not be again admitted as a Member until his arrears be paid, and until he be again chosen by ballot.

18. The subscription to the New Rooms and Coffee-room, and all other charges, except the subscription to the Jockey Club, are paid half-yearly; the July Meeting to be included in either half-year.

19. *Temporary admission of Non-members.* — Any Member of White's, Brookes's, and Boodle's (not being a Member of the New Rooms) may be admitted to the New Rooms and Coffee-room for any one Meeting, by applying to Mr. Weatherby, Keeper of the Match-book, without any other charge than the payment of two pounds. In the event of such person attending any other meeting in the course of the same year, he is to be considered as a Member of the New Rooms, and liable to all the usual charges.

20. *Election of Foreigners.* — If any foreigner should be proposed at any time as a candidate for the New Rooms or Coffee-room, an immediate ballot may take place for such election, and all foreigners who are elected are liable only to the household expenses.

TRIALS.

21. The day, with respect to the engaging of the ground for trials, shall be divided into three periods; that is, previously to eight o'clock in the morning, from one to half-past three in the afternoon, and after half-past three in the afternoon, from the first day of the Craven Meeting to the end of the Houghton Meeting; during the rest of the year the first period extends to nine o'clock in the morning. No trainer shall have the ground for trying horses more than one morning and one portion of the afternoon in the same week, and trainers having less than ten horses shall be allowed to have the ground only for one period of time. A trainer not having more than five horses in training can only have his name down once at the same time; a trainer not having more than ten horses only twice; and a trainer with more than ten only three times.

Notice for engaging the ground shall, at least one day before the day it is used, be entered in a book to be kept for that purpose at the Keeper of the Match-book's Office in Newmarket. And no notice or warning shall be deemed sufficient unless given as before directed.

If any person shall be detected in watching a trial, shall be proved to have employed any person to watch a trial, he shall be served with a notice to keep off the heath; and if in the employment of any member of the Club, or of any groom or rider employed by any member of the Club, he shall be dismissed from his service, and not again employed.

THE CUP AND WHIP.

22. *The Cup.* — The Cup may be challenged for on the Monday or Tuesday in the First Spring Meeting in each year; to be run for over the B.C. on Tuesday in the First October Meeting following, by horses, &c., the property of Members of the Jockey Club; four years old carrying 8 st. 7 lb., five years old, 9 st. 1 lb., six years old and aged, 9 st. 4 lb. Each person, at the time of challenging, is to subscribe his name to a paper to be hung up in the Coffee-room at Newmarket, and deliver to the Keeper of the Match-book the name or description of the horse, &c., sealed up, which shall be kept till six o'clock on the Saturday evening of that week; and if not accepted, or only one challenger, to be returned unopened; but if accepted, or if more than one challenger, to be then opened and declared a match, or sweepstakes of 200 sovs. each, play or pay. If the challenge be not accepted, the Cup to be delivered to the Keeper of the Match-book in the Meeting ensuing the challenge, for the person who may become entitled to the same.

23. *The Whip.* — The Whip may be challenged for on the Monday or Tuesday in the First Spring, or on Monday or Tuesday in the Second October Meeting in each year, and the acceptance must be signified, or the Whip resigned, before the end of the same Meeting. If challenged for and accepted in the Spring, to be run for on the Tuesday in the Second October Meeting following; and if in the October, on the Thursday in the First Spring Meeting following, B.C., weight 10 st., and to take 200 sovs. each, play or pay.

24. *Discount.* — Five pounds per cent. shall be allowed on all forfeits under 100 sovs. declared to the Keeper of the Match-book, at or before ten o'clock the evening before running; and if the forfeit amount to 100 sovs. and upwards, 10 per cent. shall be allowed. All forfeits shall be paid before twelve o'clock at night of the day fixed for the race, and on those forfeits which shall not be so paid the deduction for the timely declaration of such forfeit shall not be allowed.

No horse shall be considered as struck out of his engagement, unless the owner, or some person authorised by him, shall give notice to the Keeper of the Match-book, or to his Clerk, or to one of the Stewards present.

25. *One per cent. plates.* — The Stakeholder shall deduct 1*l.* per cent. upon all sums won at Newmarket in sweepstakes or matches, where the clear sum to be received by the winner, over and above his own stake, shall amount to 100 sovs. or more (unless the winner shall object to allowing such deduction to be made), and the money so raised shall be disposed of in the following manner, viz.: —

Two handicap plates of 100 sovs. each, for three, four, five, six years old, and aged horses, shall be annually given to be run for; one in the Second October Meeting, A.F., and the other in the Houghton Meeting, from the D.I. And if any horsekeeper shall object to contribute to the above fund, he will not be allowed to start a horse for either of those plates.

26. *The Stakeholder at Newmarket.* — The Stakeholder at Newmarket is allowed to retain, out of the stakes in his hands, the following fees for his trouble, viz.: —

For every match, one pound.

For every plate, one pound.

For every subscription or sweepstakes, where the whole stake exceeds 100 sovs. and does not amount to 1000 sovs., two pounds.

For every sweepstakes where the whole stake amounts to 1000 sovs. or upwards, five pounds.

[The charges for stakeholding at Ascot and Goodwood are the same as at Newmarket, with the exception of handicaps, for which the charge is one per cent.]

27. *Fees for nominations.* — The Keeper of the Match-book is entitled to charge a fee of 2*s.* 6*d.* on all nominations at Newmarket, if published in the *Racing Calendar* before running, but not on the entries which are made at Newmarket during the week of running.

28. *Weighing Fees.* — The weighing fee for plates and stakes is 10*s.* each horse, and 10*s.* extra for the winner; the former is to be paid to the Keeper of the Match-book at the same time with the stakes, and for plates at the time of entry.

The Keeper of the Match-book shall charge the proprietors of such horses as receive forfeit, and shall be excused from appearing, with the same fees for weights and scales as if they had come over the Course.

No weighing fee is charged for matches.

29. *Heath Tax.* — Towards defraying the expense of repairing the Course and Exercise-ground, one guinea annually shall be paid in respect of every horse that shall be trained or exercised, or that shall run any private trial or public race thereon. And the same shall be paid by the stable-keeper or servant having the care of such horse, and be charged by him to the owner of such horse. The Stewards shall make such orders as they think fit relative to the returns to be made by the stable-keepers or servants of the horses under their care; and if any such stable-keeper or servant shall fail to make a true return according to this order, he will be surcharged one guinea for each horse omitted in his list.

N.B. — At present all trainers are required to send in on the 1st of February a list of the horses which have been under their charge from the 1st of January, and on the 1st of every succeeding month a list of any additional horses that have been under their care since the preceding return.

30. *Entrance to Plates.* — The entrance to a Plate at Newmarket shall not exceed 3 sovs.

31. *Plates walked over for.* — When a plate given from the funds of the Jockey Club is walked over for, only half the amount is paid.

32. *Payments to the Judge.* — The winner of the Two Thousand Guineas Stakes shall pay 10 sovs. to the Judge, of the Cesarewitch and Cambridgeshire Stakes 30 sovs. each, of the Derby at Epsom 50 sovs., and of the Oaks 30 sovs. in addition to his salary for judging other races at Epsom and Newmarket.

33. *Starting.* — Every groom shall have his horse at the post, ready to start, at the time appointed by the Stewards; and every jockey is to be there, ready to start, at the same time. Every groom or jockey making default herein shall forfeit 5 sovs. to be paid to the Keeper of the Match-book, and by him accounted for to the Stewards.

The person appointed to start the horses shall mark in his list the time when the horses in each race actually started; and if there have been any false starts, the first of them shall be considered as the time of starting for that race, and he shall make a report thereof to the Keeper of the Match-book in the afternoon of the day the races are run. And if any delay shall have taken place, he shall state by whom, or by what cause, the delay was occasioned. He shall regulate his watch by the Coffee-room clock, which shall be considered as the true time for this purpose.

34. *Races for Gentlemen riders.* — No races for gentlemen riders are allowed at Newmarket during the regular meetings without the sanction of the Stewards, and, that accorded, such races must be the first or last of the day.

35. Any member of a Racing Club riding in with the leading horses in a race shall be fined to the amount of 25*l.*, and all other persons to the amount of 5*l.*

36. Rule 39, concerning Horse Racing in general, extends at Newmarket to the highest weight left in at ten o'clock the preceding evening in handicaps for plates and stakes where there is no declaration of forfeit, and where the weights are fixed the night before running.

37. If any trainer shall take a boy who has run away from another stable, without the consent of the last employer of such boy, and, after due warning having been published in the *Racing Calendar*, shall continue to retain such boy in his service, he shall not be allowed to train or run horses at Newmarket.

38. No rule, or alteration of a rule, of the Jockey Club takes effect until it has been published in the *Racing Calendar*, unless specially ordered to the contrary at the time the said rule or alteration is adopted; and no new rule of the Jockey Club can be passed, and no rule be rescinded, without previous notice being given in the *Sheet Racing Calendar*, nor at any meeting at which less than nine members are present.

PART IV.

HISTORY OF HUNTING.

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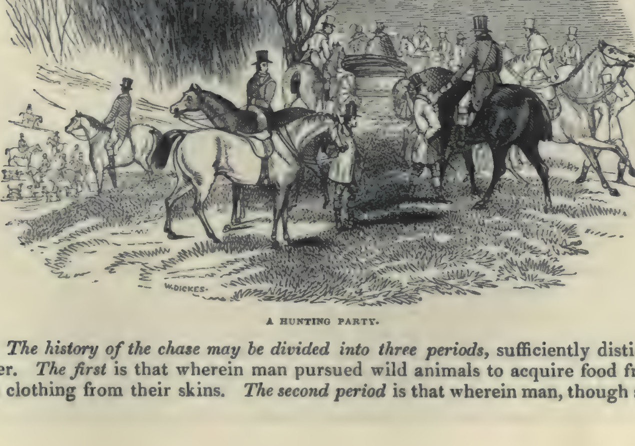

A HUNTING PARTY.

1337. *The history of the chase may be divided into three periods,* sufficiently distinct from each other. *The first* is that wherein man pursued wild animals to acquire food from their flesh and clothing from their skins. *The second period* is that wherein man, though still little better than a savage, yet having risen above the necessity of absolutely pursuing the beasts of the field, either for food, clothing, or security, continued the chase of them as congenial with his own rude nature and with the habits of his forefathers, but varying his weapons, and enlisting the horse and dog as hunting coadjutors into his service. *The third period* embraces the modern practice of hunting, on which we shall shortly enter at large.

CHAP. I.

THE HISTORY OF HUNTING AS A FIELD SPORT.

1338. *The pursuit of wild animals*, even as an amusement, has long engaged the attention of man, of which both the sacred and profane writings furnish sufficient testimony. In the sacred page the records of the chase are given with an air of sanctity which well befits the source from whence they are derived: thus we learn that Nimrod, as a mighty hunter, was an especial favourite with the Almighty. We are there also told, that the patriarch Isaac perpetuated a blessing on Jacob in return for his readiness to procure him venison killed, as he supposed, by himself. The Israelites were, however, hardly to be called a sporting people; for the injunctions of Moses, which strictly commanded them to avoid all intercourse with the Gentiles, engendered a stern fanaticism, which, being in unison with their theocratical form of government, tended to produce in them an abhorrence of most of the sports and pastimes of the surrounding nations. It could not, however, altogether proscribe hunting; on the contrary, we know that whatever they found in their fields they pursued and killed without any restriction, both clean and unclean; for when the flesh was refused, the skins were used to cover their tents. (*Exodus* xxvi. 14.) The intimation of Moses, that oxen, sheep, and goats, were allowed them for food, " even as the hart and the roe," shows how common the chase of deer must have been amongst them. " Canaan," observes Wase, " was hemmed in with deserts: there was the great Lebanon, and there was Mizpeh, and Tabor, and other mountains, which abounded with game; and in the royal age, I believe, hunting itself was much practised; for though sacred history does not communicate to us much concerning those lighter recreations; yet the frequent representations made by it throughout the writers of that age, do give some probability that it was a frequent object among them, and taken for the common use." We have already remarked, that the hatred of the Jews to the dog was such as long prevented their enlisting him into their service, and consequently the manly sport of hunting down wild animals, *at force*, was little practised by them; but that, on the contrary, they employed missiles, as slinging, archery, &c. for the purpose.

1339. *The bow and arrow were the most active hunting weapons*, and, next to these, were gins, nets, and traps. Indeed the Psalmist, by his frequent allusions to these snares, "which his enemies had laid for him," shows how common such means of taking of animals were in those times. Job likewise notices the entangling snare laid in the ground by his enemies. (Ch. xviii.) Notwithstanding the Jewish restrictions, hunting became nevertheless respected in Judea as in other countries, and its votaries honoured. It was David's early enterprises in the field, which appear to have paved the way to his elevation as a ruler over the Jews; and they also greatly tended to gain him that exalted character he afterwards bore, as " the man after God's own heart."

1340. *Profane history bears even more ample testimony to the elevated character of hunting among the great pagan nations of antiquity*, and of the renown gained by their heroes for their venatorial exploits. It is true that many of these worthies owe much of their glory to fable. Apollo would not have received divine honours, had his darts pierced any object of less notoriety than the Pythian monster; nor would Theseus probably have shone in future story without the aid of the Minotaur. St. George exists even to this day in the imaginations of many of our own pious maidens, for his enterprises against the dragons, who, " sad beasts as they were," relished no blood so well as that of devout pilgrims and holy hermits. Nevertheless it is more than probable, that most of these legendary heroes are at least veritable types of living characters; and although their feats are exaggerated, they are yet substantially founded on facts. Neither are we under any necessity of looking to fabulous history alone to prove, that the chase was always one of the most important pursuits among the great nations of antiquity. As increasing multitudes began to extend themselves over the earth, and to form kingdoms, states, or commonwealths, hunting was especially encouraged, as tending to keep up such a martial character as should prevent the invasion of their own settlements, and assist in their encroachments on those of others. The renown which attended the successful hunter, raised various competitors for the honours of being the primogenitor of the art; but it must be evident that such claim could be disputed by him who entrapped the first mouse with him who speared the first lion. It could have only been by slow degrees that hunting became a systematic pursuit; consequently, many improved but no one completed the work. By some Perseus is considered as entitled to the honour of being the first that organised it; by others, the twin sons of Jupiter are said to be more worthy of such distinction. Pollux, in particular, has the reputation of first training the horse to the chase; Orion of assembling dogs in packs; and Hippolitus for perfecting the machinery for trapping and toiling. Apollo also, as the venatorial accompaniments which grace his effigies demonstrate, was worshipped as a god of the chase. Paramount however to all these, were the claims of Diana as supreme protectress of hunting. Of her practices in the field, fabled history is replete; and of the style in which she pursued the chase, the classic page delights to tell, drawn as she is said to have been in her hunting expeditions by stags attached to her car instead of horses. Splendid as is the scene which Milton exhibits on a hunting morning, ere the congregating groups of the English steeds, and the *élite* of English riders, separate to meet each their favourite pack; how infinitely its glory must have been surpassed by the gorgeous spectacle of the queen of the silver bow, attended by her legions of *Oriades*, or mountain nymphs, in full costume. Beger's list of these ladies does not much exceed one hundred in number, although it is said that Diana had above a thousand in her retinue. Sometimes the Naiads also accompanied the land nymphs, which splendid turn-out may be supposed to have occurred, when there was a probability that either the pursuer or the pursued would be likely to "take the soil;" and it was on such an occasion, we presume, that the unlucky Acteon ventured abroad. This fabled goddess, who has had more statues raised to her memory, and whose deeds have been more emblazoned than almost any other of the divinities of the olden times, shines in the admirable sculpture of the celebrated workmen of early days. We have borrowed, by express permission, our *fig.*202. from the elegant embellishments which ornament the admired translation of Arrian by a "Graduate of Medicine," where it stands thus entitled, Diana Aricina seu Nemorencis, by Beger. In this figure, devoted to venation, we see the early type of the Celtic greyhound. In our hurry to pass on, we must not however omit to notice those friends of ours, the rustic deities, from Pan to Sylvanus, for they are always represented as very friendly to our cause; Pan is notoriously a jolly god. Where also is the sportsman who would dare to throw the eager pack into cover, without first invoking Sylvanus, the famed deity of the woods and groves?

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BEGER.

1341. *The authentic history of Greece* bears equal testimony with her fabulous records to the popularity of hunting among her renowned sons; and the classic pages of Aristotle, Plato, Xenophon, Polybius, Julius Pollux, &c. have eulogised and immortalised the practice. Alexander, as is well known, was passionately fond of hunting, and employed in it much of his leisure time. He also warmly encouraged its general practice, from its supposed intimate connection with martial habits. He even commanded Aristotle to write a treatise on field sports.

1342. *Xenophon, the historiographer of Persia and Greece, and the greatest warrior of his day*, was also a zealot in the cause of the chase, with all its appliances to boot. His writings on these subjects would alone have immortalised him, had his military fame been less. His work on the *Management of the Horse*, written for the instruction of the young Athenians, is equally simple and judicious; and his *Duties of the Master of the Horse in the Army* is no less excellent. But that which most interests us at the present moment is his Κυνηγετικον, or *Treatise on Dogs and Hunting*. The first chapter of his *Cynegeticus* is devoted to the fabulous history of the chase, and to its connection with military science; but the remaining portions are practical. In these he treats particularly on hare hunting, and more generally on the chase of deer, boars, pards, lynxes, panthers, and bears; which subjects occupy the 9th, 10th, and 11th, chapters of his work. That variety of the chase we call *coursing* was not popular in Greece until a later period. In proof of the hold which rural affairs have on the greatest minds, this eminent character, long before his powers were impaired, and while yet in the very height of his renown, retired to Scyllus near Olympia, where his time was occupied by rural pursuits generally, but more particularly by hunting, and breeding, and training, of horses, on which subjects he has also left some memorable instructions. The golden verses of Oppian in praise of hunting, and those of a later date of Nemesianus, well known to the classic sportsman in their original dress, and accessible in their translations to the less erudite, are all proofs of the estimation in which field sports were held by these ancient worthies.

1343. *The early Romans encouraged field sports with ardour*, and followed the chase much after the manner of the Grecians and Persians. The same stratagems of bow shooting in ambush and at force were common. Gins, toils, nets, and pitfalls, were employed by the middling classes; while the higher orders took the field in all the pride of pomp and force of numbers. The Roman emperors themselves warmly encouraged hunting: Hadrian, no less renowned for his learning than for his accomplishments, appears to have been passionately devoted to field sports, and was a warm patron of its adjuncts, the horse and dog. Of his attachment to the latter, we have a memorable proof in the monument which he erected to the memory of one which had signalised himself in an encounter with a boar; he also built a city on the spot where the valiant dog slew the animal. Our limits prevent us from expatiating on the eloquence and energy of the Roman poets, who wrote on the manliness of field sports as a proper contrast to the effeminate pursuits which at one time characterised the Roman youths. Virgil in sweet numbers sings the praises of his Ascanius, as being eminent in the field and first in the fight (*primum bello*). Pliny, the historian of nature, was a zealous hunter also, and appears to have been to the full as proud of his prowess in field sports as of his renown as a writer.

1344. *No sooner had the attachment of the Romans to field sports experienced a check*, than their national character suffered. It was in vain that they attempted to hide their degraded tastes, by decrying hunting as tending to divert the attention from more important pursuits, for they were seen to adopt habits and manners, compared to which sloth and effeminacy would have been virtues. At a certain epoch their depraved and vitiated tastes required even more soul-stirring scenes to rouse them; and the innocent chasings of wild beasts on the plains were exchanged for deadly combats between fellow-men; and the sacrifice of hecatombs of animals in one deadly slaughter within an arena was more to their taste. In proof of this, we are informed by Plutarch that Pompey the Great, when ædile, furnished no less than three hundred and twenty couples of human combatants, which were offered for butchery, "to make a Roman holiday," — *Homo occiditur ad hominis voluptatem.*

1345. *The wreck of time has left to us some Latin authors, De Re Venatica, of great authority*, as Cicero, Horace, Virgil, Seneca, Pliny, Justin, and others, who may be said still to live in their works. We purposely avoid any further mention here of the ancient Roman Venatio Amphithralis, not only as somewhat irrelevant to our present subject, but likewise as disgraceful to it. The admirer of these spectacles will find amusement in the writings of Tertullian, Augustin, Chrysostom, Cicero, Lactantius, who have all treated on them; but the generous sportsman will shut up the bloody page in disgust.

1346. *The records of the British chase*, previous to the Roman invasion, are few and uncertain: but we know that the inhabitants of our isles were rude but warlike; and, without doubt therefore, they were as prompt in the hunting as in the human battle-field. Dio Necæus tells us that the early British were a fierce and barbarous race; that they pursued no agriculture, but preyed on their neighbours and on the wild beasts they hunted. Venison in particular, it appears from this author, constituted a very considerable portion of their food. Strabo also informs us, that the dogs used in the deer chasings of the primitive Britons were highly esteemed; and from his account they appear, in those early times even, to have constituted an article of traffic with the inhabitants of the Continent, particularly with those of Gaul.

1347. *The invasion of the Romans* did not probably restrict the venatorial pursuits of the Britons, as history is silent as to any such enactments; neither would restrictions of this kind have been in unison with the general conduct of these invaders on such matters. But, as we have elsewhere noticed, by introducing their amphitheatrical spectacles here, it is probable the legitimate chase was feebly pursued, and consequently but little improved, under their domination. An old MS. recorded in Strutt, is *illuminated* with a representation of a party of hunters of those times in the act of unearthing a fox (*fig.* 203.), whose *bolting* as we are told, was not then noted by a *view halloo*, but by a sonorous blast from a cow horn; and the *mort* or death, without doubt, called forth poetic strains from some venerated bard, for even in these early times venation, music, and poetry, marched hand in hand. Can we therefore want any further proof of the high bearing of field sports when we find them so constantly in such company; the very deities in those times were all renowned sportsmen.

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SAXONS BOLTING A FOX.

1348. *The Saxons, in common with all the northern intruders*, were much more attached to hunting than the Romans; and thus it was that, under their rule, the British chase assumed an organised character. It also took on a restrictive one, and the liberty of sporting by the people at large was taken from them, and merged within the crown and its delegates. "As early as the ninth century," says Strutt, "and probably long before that period, hunting constituted an essential part of the education of a young nobleman." Asserius assures us, that Alfred the Great, before he was twelve years of age, "was a most expert and active hunter, and excelled in all the branches of that most noble art, to which he applied with incessant labour and amazing success." It is certain that, whenever a temporary peace gave leisure for relaxation, hunting was one of the most favourite pastimes followed by the nobility and persons of opulence. It is no wonder, therefore, that dogs proper for the sport should be held in the highest estimation. Horses had now also been introduced into the chase, which gave to hunting a much more elevated and exhilarating character. The dogs in use were likewise somewhat diversified according to the venatorial purposes they were employed in; their general character, however, bore the stamps of strength and ferocity. But as we shall enlarge on this subject in our *Natural History of the Dog*, we refrain from any detailed account of it here. We cannot, however, in this place help remarking on two singular circumstances in the huntings of early times, that, whereas it is doubtful whether horses were employed in hunting in Great Britain prior to the Norman conquest, it is even more than doubtful whether the chase among the Jews was wholly conducted without dogs at any time.

1349. *The British clergy in the middle ages* were among the most zealous admirers of hunting, and pursued it with unbounded ardour, without considering it as any stain on their holy calling; and it may in candour be allowed, that, separated as they were from secular cares, and being likewise unsolaced by much learning or much acquaintance with the physical sciences, their means of amusement were necessarily but small; and therefore that, thus situated, they flew to hunting as a means of diversion and excitement. Even the heads of the cloth, as the bishops and abbots of those times, says Strutt, "hunted with great state, having a large train of retainers and servants; and some of them are recorded for their skill in this fashionable pursuit. "Walter, Bishop of Rochester, who lived in the thirteenth century, was an excellent hunter, and so fond of the sport, that, at the age of fourscore, he made hunting his sole employment, to the total neglect of the duties of his office. In the succeeding century, an abbot of Leicester surpassed all the sportsmen of the time in the art of hare hunting; and even when these dignitaries were travelling from place to place upon matters of business, they usually had both hounds and hawks in their train." Fitzstephen assures us, that Thomas à Becket being sent as ambassador from Henry the Second to the court of France, assumed the state of a secular potentate, and took with him dogs and hawks of various sorts, such as were used by kings and princes.

1350. *Early in the fourteenth century hunting was becoming an organised as well as a popular pursuit*, as is proved by the writings on the subject, which became somewhat numerous about this time. Among these, that in the highest estimation was the production of William Twici, huntsman in chief to Edward the Second, written in Norman French, an old translation of which is yet to be found among the Cottonian MSS. As the vast forests fell before the axe of the cultivators of the soil, and as the ancient inhabitants, the wolf and wild boar, became dislodged, great alterations occurred. The lawless peasantry, which before held them as fastnesses, and who lived by the unfair slaughter of the wild deer it contained, as well as by the plunder of travellers, were at last ejected. From hence it followed, that the face of the country becoming more fair and open, the wealthy landowners were encouraged to the hunting of the varieties of the deer that were native to the soil with hounds and horses, which greatly tended to put a stop to the destructive ambush, and certain death of the passing animal by the bow and arrow. In after times the bullet-bow was used occasionally by the lawless, but by strong measures being pursued, that was likewise proscribed. The fox also became an object of the sportsman's search in the succeeding centuries, when lands being divided and apportioned, and deer being consequently driven into appropriate preserves where their safety was secured by protecting laws, under the sanction of their being private property. The fox therefore, no longer as heretofore sought for by the lawless rabble, and hunted under ground in common with badgers, by means of vermin terriers bred to the purpose, now became an object of fair pursuit by the wealthy sportsmen.

1351. *Of fox hunting above ground*, Twici recommends that you "Draw with your hounds about groves, thickets, and bushes, near villages; a fox will lurk in such places to prey on young pigs and poultry; but it will be necessary to stop up his earths, if you can find them, the night before you intend to hunt; and the best time will be about midnight, for then the fox goeth out to seek his prey. You may stop his holes by laying two white sticks across before them, which will make him imagine it is some gin or trap laid for him; or else you may stop them up close with black thorns and earth together." We may likewise judge how much the sport of fox hunting advanced in popularity by what follows.

1352. "*The best hunting a fox above ground* is in January, February, and March, for then you shall best see your hounds hunting, and best find his earthing; besides, at these times, the fox's skin is most in season: again, the hounds most ardently hunt the fox in the coldest weather, because he leaveth a very strong scent behind him; yet in cold weather, it chills fastest. At first only cast off your sure finders, and as the drag mends, so add more as you dare trust them. Shun casting off too many hounds at once, because woods and coverts are full of sundry chases, and so you may engage them in too many at one time: but let such as you cast off first be old staunch hounds which are sure; and if you hear such a hound call on merrily, you may cast off some other to him, and when they run it on the full cry, cast off the rest, and thus you shall complete your pastime. The *words of comfort* are the same which are used in the other chases, attended with the same hallooings and other ceremonies. Let the hounds kill the fox themselves, and worry and tear him as much as they please. Many hounds will eat him with eagerness: when quite dead, therefore, hang him at the end of a pike staff, and halloo in your hounds to bay him, but reward them not with any thing belonging to the fox, for it is not good." (See a very well written summary of the progress of the chase in the *Hunting Directory*, by T. B. Johnson.)

1353. *The effects of time on the practice and practitioners of hunting*, as we have already seen, are great, and they also still progress — *Tempora mutantur, et nos mutamur in illis.* Instead of the vast subscription packs of hounds now seen in every county, not much more than a century ago, a select few only among the small gentry, yeomanry, and farmers, kept each their one, two, or three, couple of hounds, which they brought together on stated days to hunt the hare, the fox, or an outlying deer. These *trencher hounds*, so called as being kept at bed and board within the house of each owner, were of every variety as to size and qualifications; but as they, like the old Scotch baronet's pack, would hunt any thing, "from the elephant of the field to the flea of the blanket," they must have been good. A very descriptive sketch of a pack, or rather of a motley collection of dogs, for it could be by courtesy only that they were called harriers, is given in the *Sporting Magazine* for July, 1827, as follows:—"My friend's dogs were of a grotesque character, not definable as a *whole* by any rules of Beckford or Somerville. The deep toned, blue mottled, the dwarf foxhound, the true bred harrier, the diminutive beagle, all joined in the cry, and helped to supply the pot. Being somewhat strangers to one another, discord prevailed, having a butcher for one master, a baker for another, a farmer for a third, spreading pretty well through the village. With such heterogeneous qualities, and not in social intercourse, with an impenetrable country to hunt over, whippers-in were indispensable, of which there was a plentiful supply, personated, I may say, by all the attendants, with immense long whips and deep sounding lungs, not sparingly used. The huntsman was the owner, riding an old grizzled horse, rather lengthy both above and below the saddle, in a green coat, with flaps covering the boot-tops, and large yellow buttons, a scarlet waistcoat high in the throat and long in the waist, with a pair of pockets deep enough for a large tobacco-box, or even for a leveret in a strait; his breeches ribbed corduroys, short at the knees, and secured from rubbing over by a large pair of silver knee buckles; boots allied to the *jack* order, with tops somewhat short and certainly not white, leaving a respectable space to show the blue woollen stocking, and kept just over the calf by a pair of broad tanned straps across the knee. The spurs I forget, so they must be left. A bushy black wig, covered by a low crowned castor, with brims *à la Joliffe*, serving by their turn-up as gutters for rain, embraced a face oval and long, roughed in the nasal and wide in the mouth, various in colour, having shades of red, blue, and yellow; hands of Cyclops' breed, too large for any Woodstock manufacturer, and never in genial warmth from the cuff of the coat: the whip long and heavy, always dangling at the sides of the leg ready for action. He is now in my mind's eye; but I fear the figure cannot be imagined in its true oddity by this touch. The finishing embellishment must not be omitted, though not in place, the whole person being kept in due order by a belt round the body, rather protuberant. He was a capital sportsman, and could almost hunt a hare himself." It is with regret that we leave the picture of this worthy old sportsman of the hundreds of Essex unfinished, but our limits will not permit a longer extract: we cannot however proceed, without recommending a reference to the Number itself for a further account of his habits, and also of those of one other member of this hunt, a clerical one too, but not more remarkable for his singular attachment to rural pursuits than for his exemplary conduct as a divine.

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OLDEN PACK OF HOUNDS.

1354. *Fox hunting, as a venatorial sport*, is certainly held distinct from all other beast chasings. At what period did the separation occur? From a pen easily detected by reason

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of its power, we have the following notice: — "Neither the holy prioress of St. Alban's, Dame Juliana Berners, Markham, nor any of the very old writers on such subjects, are able to satisfy us on this point; but on the authority of the Rev. William Chafin, in his *Anecdotes respecting Cranbourn Chase*, the first real steady pack of foxhounds, established in the western part of England, was by Thomas Fownes, Esq. of Stepleton in Dorsetshire, about the year 1730. They were," says the author who wrote in 1818, "as handsome, and fully as complete in every respect, as the most celebrated packs of the present day. The owner meeting with some worldly disappointments, was obliged to dispose of them; and they were sold to Mr. Bowes in Yorkshire, the father of the late Lady Strathmore, at an immense price for those days." (*Encyclopædia Britannica*, vol. xi. p. 752.) The trial of these dogs also appears, and so interesting is the detail, that we would recommend a reference to it, our present limits confining us to historical notice principally.

1355. *Of hunting generally it may be remarked*, that it became truly an organised pursuit during the last century only, since which time considerable alterations have occurred in the practice of it. Indeed, the opinions and habits of the sportsmen themselves, the horses they ride, and the dogs they employ, have all been for some years past undergoing a gradual change. Fox hunting, which was little known until the commencement of the eighteenth century, has now taken place of the royal sport of stag hunting; which, though still followed, must yet be allowed to have, comparatively, but few votaries. Fallow deer hunting is only here and there an organised pursuit, although one found outlying is frequently chased. Hare hunting, however, remains a standard sport, and has yet numerous followers, as without doubt it ever will among the less venturous and less active sportsmen. Packs of otter hounds, staunch and true to their sport, are yet kept; indeed they seem on the increase in fenny countries. It is, however, in the remote counties only, that we now see a motley cry of vermin dogs and vermin followers engaged in chasing what is known as the martern, marten, or mertin cat; where the chase and the chasers, bipeds and quadrupeds, are all equally "rough and ready." "In no one instance," says Mr. Apperley, the Nimrod of our day, "has the modern varied from the ancient system of hunting, more than in the hour of meeting in the morning. Our forefathers threw off the pack so soon as they could distinguish a stile from a gate, or, in other words, so soon as they could see to ride to the hounds. Then it was that the hare was hunted to her form by the trail, and the fox to his kennel by the drag. Slow as this system would now be deemed, it was a grand treat to the real sportsman. What, in the language of the chase, is called the 'tender-nosed hound,' had an opportunity of displaying himself to the inexpressible delight of his master; and to the field (that is, to the sportsmen who joined in the diversion), the pleasures of the day were enhanced by the moments of anticipation produced by the drag. As the scent grew warmer, the certainty of finding was confirmed, the music of the pack increased, and the game being up, away went the hounds 'in a crash.' Both *trail* and *drag* are at present but little thought of; hounds merely draw over ground most likely to hold the game they are in quest of; and thus, in a great measure, rely upon chance for coming across it: for if a challenge be heard, it can only be inferred that a fox has been on foot in the night — the scent being seldom sufficient to enable the hound to carry it up to his kennel. Advantages, however, as far as sport is concerned, attend the present hour of meeting in the field. Independently of the misery of riding many miles in the dark, which sportsmen of the early part of the last century were obliged to do, the game, when it is now aroused, is in a better state to encounter the great speed of modern hounds, having had time to digest the food which it has partaken of in the night, previously to its being stirred. But it is only since the great increase of hares and foxes that the aid of the trail and drag could be dispensed with, without the frequent recurrence of blank days, which now seldom happen." (*Quarterly Review*, No. xciii. p. 219.) Another worthy of the old school, on the contrary, deplores the loss of the "blazing fire at six in the morning, the splendid cold buttock of beef, or the venison pasty, washed down with chocolate, and kept from rising again by a bumper of brandy, or a full draught of heavy wet out of a silver-tipped horn," as a proper prelude to the "slow work" about to commence on a bleak mid-winter morn, in which it is not impossible that, in some counties, the whole day may have been engaged; and even the night also, we are told, has been intrenched on, ere the hare was killed, or otherwise the pack been whipped off. This, of course, occurs only in certain localities; but as we are told, it really was not uncommon, and that no farther off than the Wealds of Sussex and Kent, particularly in that of Sussex. Many years ago we conversed with an elderly sporting farmer of great respectability, who lived in what is known in Sussex as the Dicker. He said he well remembered the hare being chased on foot, the country then being impassable for horses during the winter and spring. In these times, nevertheless, the sport was methodised; every attendant on the hunt being provided with a pole, in the use of which the agriculturist, and indeed the inhabitants generally, who had occasion to travel, were very expert. For it is to be observed, that there were few hedge fences, but, as in Holland, over the greater part of the country we allude to, wide and deep water-courses formed the only boundaries between one tract or one field and another. The dogs swam these, the hare did the same, and the human pursuers, from long habit, being expert at what we may call *pole saltation*, with ease bounded over these obstacles in pursuit of the slow pack, who, true to the scent, though tardy over the ground, yet followed the hare with astonishing perseverance. Indeed it was seldom that she was lost, except when she had either prudence enough to run straight in a direct line, and so cross the country at large, in which case her pursuers were forced to stop the slow pack, and whip them off. Poor puss even in those days had many enemies; and the elderly sportsman who described the above scene to us, among other amusing anecdotes, told us of a poacher of that time, who frequently laid in wait for the hare, and being very dexterous in the use of the bullet-bow, very sadly interrupted their sport; until at last, being openly detected, the persecution he suffered forced him out of the country. Our cut (*fig.* 205.) is a faithful representation of one of the heavy hounds of the Dicker pack, who, though true to the scent, never hurried himself, but was often seen, while catching the welcome taint, to throw himself on his haunches and chaunt forth his joy in such sonorous strains, as would make the welkin ring; which done, he followed his fellows.

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OLD SOUTHERN HOUND.

1356. *Hunting among the moderns is very differently conducted;* the sport is poor, the pace is slow, "dead slow," unless a dozen miles of a country presenting plenty of stiff inclosures, with a river brook, or mill stream or two, can be passed over in forty-five minutes. An eminent votary of the chase observes, "The *ne plus ultra* of fox hunting is to kill the game in fifty minutes." Nimrod states that he was present at "a burst of twenty-two minutes with the Duke of Rutland's hounds, when the renowned Shaw, his grace's huntsman, declared publicly to the field that he was beat two miles in twenty-two minutes! To this he adds — Could that be a treat? Yes, to the late Jack Storey on old Cockspinner, the race-horse, who was the only man that lay well with the hounds. We may safely affirm that for one man who rejoiced in that triumph of speed, there were ninety and nine who wished the hounds had not gone so fast; and were I five and twenty, and my horse had the wings of the morning, I should not like to see hounds go so fast as they now do, because I am convinced it is a great drawback from the real pleasure of hunting." (*New Sporting Magazine*, No. 21. p. 187.) Colonel Cook finds some redeeming excuse for the present lateness of the turn out: — "In modern times," he says, "hunting early is *unnecessary;* the breed of hounds, the feeding, and the whole system, is so much improved, that the majority of foxes are found and killed in the afternoon (I mean after twelve o'clock). In former times, the only advantage of finding a fox *early* must have been that his belly was full, for perhaps he had scarcely finished his repast by that time in the morning. In the present day we are anxious to find a *stout* fox; and instead of his being full, we wish him to be as empty as possible, and to stand one hour and twenty minutes, the best pace, before the hounds." (*Observations on Fox Hunting*, p. 159.) We suspect that the indulgence of luxurious habits has some share in the modern method of pursuing the chase. To rise early, we require to retire early also; to effect which the social evening must be curtailed, the festive bowl must be scant, the song and the toast must be unheard: nor can the riding to cover by starlight on a bleak morning compete with being carried there in a carriage at eleven.

1357. *However, whether the present system of hunting be not carried to an extreme may*, we think, be reasonably asked. Mr. Apperley tells us, "He is strongly inclined to suspect that out of a given number of gentlemen taking the field with hounds, the proportion of really scientific sportsmen would be in favour of the olden method." Nor is this well-known author alone here; we ourselves know many others who consider that hunting, as an art, has retrograded; and argue that the intellectuality of competing fairly with the various wily attempts at escape of the pursued animals, has now given place to unfairly *racing them down*. The manœuvres of the pack individually and collectively displayed, which were so interesting to the sportsmen of old, are now little heeded, so that the pace is killing, as well to the pursuers as to the pursued. In these times a surgeon and an attorney ought to be attached to each pack, that in case of accident, the one may be ready to save you, if *saveable;* but if not, the other is at hand to distribute your effects in a workmanlike manner. Of the facilities for hunting it must be remarked, that as population increases and cultivation of the soil extends over our country, so the breeding of wild animals becomes curtailed, and the means of pursuing them is rendered more difficult. Nevertheless, there yet remain many good hunting localities; while the breakage of fences and the trampling of crops (the latter often more damaging in imagination than in reality), is amply compensated for by the pleasure and sociality that a well conducted pack of foxhounds infuses into a country, to say nothing of the advantages to the farmers in the consumption of provender, and the opportunities of showing and disposing of their horses. So long as hunting is followed in a gentlemanly, liberal, and conciliatory spirit, we feel assured it will always receive the support and encouragement of the country.

SECT. I. *Conventional Terms used in Hunting, ancient and modern.*

1358. *A peculiar phraseology has always attended the craft of hunting,* as well as of every other variety of field sporting; and it has always been the aim of every ardent sportsman to become acquainted with the nomenclature in use in the several sports. In olden times the terms employed were quaint but expressive, and many of them are yet in use. The moderns, however, have been forced to frame others, to meet the numerous alterations which have taken place in the venatorial pastimes of our days.

SUBSECT. 1. *Ancient Terms of the Chase.*

1359. *The ancient sporting terms of the chase were called "terms of venery,"* of which the following form a summary, as given by Blome in his *Gentleman's Recreation:* — "There are beasts of venery, beasts of chase, and beasts of the warren. Beasts of venery are the hart (stag) and hind, the hare, boar, and the wolf: and here note, that with the hart or stag is included all other red deer of antlier. Beasts of chase are the buck and doe, the fox, martern, and the roe; and beasts of the warren are the coney. Betwixt beasts of venery and chase there are great differences. Those of the venery make their abode all day in great coverts and secret places in woods; and in the night season seek for food in meadows, lawns, and pleasant feeding places;

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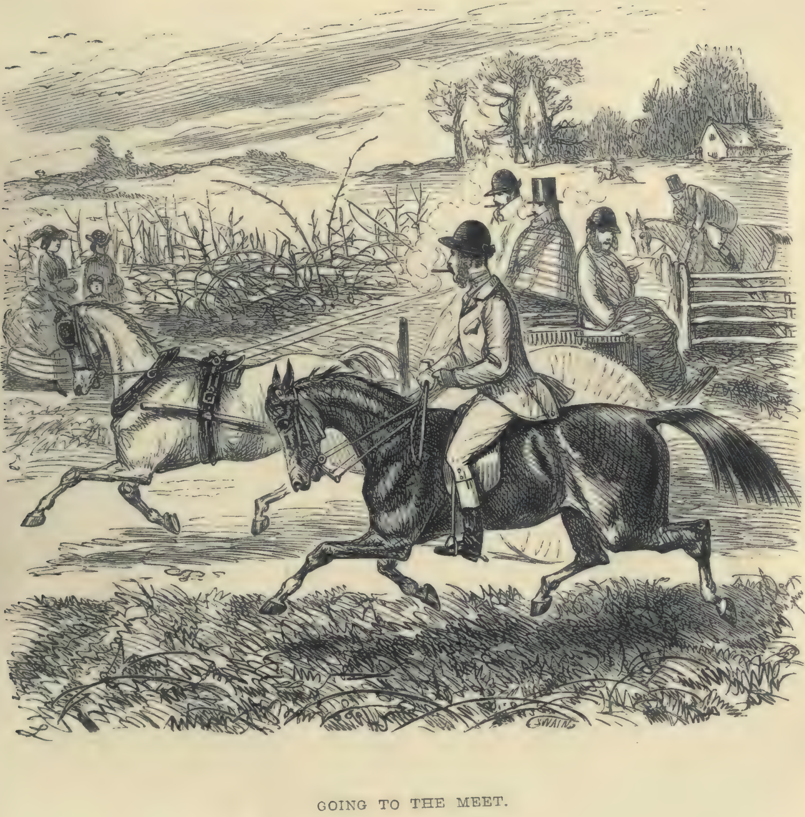


GOING TO THE MEET.

whereas those of chase reside in the day in the fields and open places, the better to avoid danger of surprising, and in the night season feed as the rest in the meadows. But to proceed to the *terms* of *art* used in *venery*."

1360. "*The hart is called the first year a calf, or a hind-calf*, the second year a knobler, the third a brocket, the fourth a staggard, the fifth a stag, and the sixth a hart. [We use the word stag for the mature male of red deer of whatever age.—ED.] If hunted by the king or queen, and he escapes, for ever after he is called a *hart-royal:* and if the king or queen think fit to make proclamation for his safe return, as was formerly the custom, he is then called a *hart-royal proclaimed*. The hind is called the first year a calf, the second a hearse, and sometimes we say a brocket's sister, and the third year a hind, and so she continues."

1361. "*The buck, or fallow deer*, is called the first year a fawn, the second a pricket, the third a sorel, the fourth a soar, the fifth a buck of the first head, and the sixth a buck or great buck. The doe is called the first year a fawn, the second a teg, and the third a doe. The roe is called the first year a kid, the second a girle, the third a hemuse, the fourth a roebuck of the first head, and the fifth a fair roebuck."

1362. "*The wild boar* is called the first year a pig of the sounder, the second a hog, the third a hogsteer, and the fourth a boar; at which age, if not before, he leaveth the sounder. The fox is called the first year a cub, the second a fox, and afterwards an old fox. The otter is called the first year a whelp, and afterwards an otter. The martern is called the first year a cub, and the second a martern. The hare is called the first year a leveret, the second a hare, and the third a great hare. The coney is called the first year a rabbit, and afterwards an old coney."

1363. *Terms for beasts of venery and chase when associated:*—"A heard of harts, as also of all other sorts of deer, is at least twenty; but six roes make a heard. A bevy of roes, a sounder of swine, and a rout of wolves, are at least twelve in number. A brace or leese of bucks; the like of foxes and hares. A riches of marterns, and a couple of coneys. To denote the heat or seasoning of these beasts we say,—A hart or buck goeth to rut, the roe to tourn, the boar to brim, the fox to clickiting, the wolf to match or to mate, the otter hunteth for his kind, and the hare and coney goeth to buck." Of the sounds emitted at these times it was said:—"A hart belloweth, a buck groaneth or twateth, a roe also belloweth, a boar freameth, a fox barketh, a badger shrickets, an otter whineth, a wolf howleth, and a hare and coney beateth or tappeth." Of their young we of the present day say of the fox, a litter of cubs, a nest of rabbits, and a dray of squirrels.—ED.

1364. *The footmarks of beasts of the chase:*—"For a hart, the *slot;* for a buck, and all fallow deer, the *view;* of all deer, if on the grass, or where it is scarce visible, is is called *foiling;* for a fox, the *print;* for other vermine, the *footing;* for an otter, the *marks* or *seals;* for a boar, the *tract* or the *treading;* and for a hare diversly, for when she winds or casts about to deceive the hounds, she *doubleth;* when she is in the open field, she *soreth;* and when she beateth on the hard highways, and her footing can be perceived, then she *pricketh;* and in snow it is called the *trace* of a hare."

1365. *The seasons for the chase of these several beasts:*—"The hart or buck beginneth at the end of *Fence-month*, which is fifteen days after Midsummer, and holdeth to Holy-rood-day. The hind and doe begin at Holy-rood-day, and last to Twelfth-day or Candlemass; the roe from Michaelmass to Candlemass; the fox and wolf from Christmas to our Lady-day; the hare from Michaelmass to the beginning of March; the otter from Shrovetide to Midsummer; and the boar from Christmas to Shrovetide: coneys are always in season, either young or old, but their skins are best in season from Alholantide to Shrovetide."

1366. "*Of the dung of beasts of the chase* it is the *fewmets* or fewmishings; of a boar, the *lesses;* of a fox, the *billeting;* of all vermine and stinking chases, as the badger and the like, it is called the *faunts;* of an otter, the *spraynts;* of the hare and rabbit, the *buttons* or *crotiles*."

SUBSECT. 2. *Modern hunting Terms.*

1367. *The hunting terms of the ancients* are not sufficiently piquant for the active and sensitive ears of the modern Nimrods, who, on this account, have framed a vocabulary and phraseology of their own, which their enemies might be apt to call slang, but which their friends consider as both imaginative and descriptive; and custom having made it conventional, it will require some notice. These modern venatorial lexicographers have, at least, the excuse of example. No art or science but now a-days has its petty mint in which new terms are daily under coinage; and if these modern sporting terms of ours are not derived from the *scriptores Latini*, they have the higher claim of being the origin of the English "fancy:" and ye critics, if you dare to stigmatise these gems of fancy as offsets of the vulgar tongue, we are yet prepared to meet ye; for the grave Dr. Johnson strongly urges the necessity of an acquaintance with the use of this vulgar tongue to every one who passes through life. Nay, we would wager, that had the erudite doctor himself ever witnessed the "unbagging" of a fox before a pack of hounds, he would at least have acknowledged the aptness of calling the game a "bagman." Had he, moreover, been fortified into pursuing the "varmint" by a certain quantum of "jumping powder," he would have risked a fall without dismay, even with the chances of being "bullfinched," and the certainty of being as much "unwigged" as the fox was "unbagged." Further; if after all this he had not then allowed that our sport was exquisite, and our vocabulary not less expressive than descriptive, "he would not have deserved the name of a great lexicographer."

1368. *Of the tail* we say the single of deer, the brush of the fox, the stern of the wolf and dog, and the *scut* of the hare and rabbit. The feet of the fox are called *pads*, the face the *mask* or *front*, but in the deer it is the *snout* or *nose*.

1369. *Of dogs in numbers*, we say a *brace* of greyhounds, but a *couple* of hounds, a *leash* of the former, but a *couple-and-half* of the latter. In true sporting phraseology it is a *kennel* of foxhounds—a *pack* being thought more appropriate to harriers, but many crack sportsmen are nevertheless heard to talk of a *pack* of foxhounds in common parlance. The bed on which the bitch pups is called the *couch;* and *to stern* the young is to take off a small portion of the tail of each. The ears, when shortened, are said to be *rounded*.

1370. *When hounds in drawing for their game hit the scent the reverse way*, they are said to *draw amiss*. But when the game is up, and the hounds scent it in the opposite direction, they then *run to the heel*, or *run to counter*. When they take a fresh scent they *hunt change;* and when they are seen traversing the same ground over and over they *hunt foil*. When they run without any cry they *run mute;* and if they chase other game than that for which they are entered, or are otherwise disobedient to the huntsman, they are said to *run riot*.

1371. *Hunted animals frequently take the water.* A stag or other deer doing so is said to *take soil;* if he be an otter, he *beats the stream;* all others are said to *take water.* When a fox takes to ground, if it be to a regular fox earth, he is said to be *run to earth;* but when he descends into a slough or drain, he has then *run to ground.* A fox is *dragged up to,* we *walk up a deer,* or we *draw on the slot.* We *quest* or *trail* the hare; we *find* or *unkennel* a fox; the deer is *unharboured;* the hare is *started* from her *form* or *seat.* The hare is *pricked* by the foot, the fox is *balled* or *padded.* A fox and a hare *run up and down* a cover; a deer *beats* the cover. A fox is said to be *headed* when he is turned back; a deer is *blanched;* and a hare making a return *doubles.* The hare *squats;* the fox *lies down;* a fox is *recovered;* a deer is *fresh found.* The hunting of red deer, when in their native wilds, as in Devon and Dorset, was called *tufting.* The death of the stag is the *breaking up;* or, in still more modern language, *the take;* that of the fox is to be *worried;* and *whoo whoop* is the death cry of both fox and hare.

1372. *The fox chase of the present day also acknowledges the following terms:— Tally-o-back* when the fox heads back; if the hounds come out, it is *hark back.* A *sharp burst* is the first run when very quick. If the scent is so good that the hounds run almost mute, it is called a *burning scent:* but when the hounds throw up, or stop, for want of scent, or because they have overrun it, it is then a *check.* If, on the contrary, the scent is so good that they have no need to stoop for it, they are said to *run breast high.* In drawing the cover, the first hound which throws his tongue is said to *challenge.* The fox, when killed as soon as found, or in cover, is said to be *chopped.* Hounds *thrown* into cover are said to be *drawing it.* The scent left by the fox on his return to his kennel is called the *drag:* when rather fresher than a drag it is a *moving scent.* When the vermin taint or scent of the fox extends itself so that a majority of the hounds *feel, i. e.* smell it, and crowd together to pursue and enjoy it, they are said to *carry a good head,* or to *run breast high:* when the reverse of this is the case, and the dogs do not attempt to rush to the head, they *dwell on the scent:* when it is so faint as scarcely to be perceptible, they cannot *feel the scent.* The fox is said to *run his foil,* when he retraces the ground he has before been over; and every sportsman knows how baffling this is to both dogs and men. Hounds, when they have recovered a lost scent, are said to have *hit it off;* and one signalising himself on this occasion has *made a good hit.* When hounds are pressed onwards by too zealous riders, the huntsman's rate, *hold hard,* is the check to the hurtful impetuosity: *hold them on* is the reverse, and is a direction to the huntsman to make to the head, and try to recover the sinking scent. Should a fox meet with obstruction in his course, and be turned back, he is said to be *headed.* If the impetuosity of his followers should occasion the death of the fox unfairly, he is said to be *headed to death.* The good hound that abides by the scent only, and will not go a yard beyond it, is called *a line hunter.* When hounds are slack mettled in their hunting, they are said not to *stoop to their scent;* but when in one line, they go at the top of their speed, they are then said to be *streaming away.* Some dogs are said to be *tight in their tongues, i. e.* they run mute, or nearly so. The good hound, on the contrary, *throws his tongue* freely; but if too noisy he is called a babbler, and should be drafted. We have praised the line hunter, and he deserves it, but some hounds are given to *tailing,* which means following each other like schoolboys playing at "follow my leader," and which is excusable only when the scent is very indifferent. When we enter the hounds to the first cover, it is there they *throw off.* When the dogs have carried the scent to a given point, and no longer stoop their noses in search of it, they are said to *throw up.* When the track of the fox has been gone over either by cattle or by the dogs, it is said to be *stained.* A hound that has a habit of running wide of the pack is called a *skirter. Pad* is the foot of the fox, and therefore when we detect the print of it on the ground, *we pad the fox.* When the scent fails altogether, or nearly so, some huntsmen will take their dogs forward, which is called *lifting them.* Query — When is lifting allowable? Answer — Fox hunters differ on the subject. When, from the goodness of the scent, it enables the whole of the pack to *stream away* at the top of their speed, they often do not *throw a tongue. Full cry,* on the contrary, is when the joyous pack acknowledge the scent by *throwing their tongues* freely. The fox, when he a second time goes over the same ground, is said to *run his foil.* When hounds are running with the wind behind them they are running *down wind.*

CHAP. II.

THE NATURAL HISTORY OF THE DOG.

1373. *The following general characters of the dog essentially agree with those given him by Baron Cuvier,* who considers the domestication of this animal to be the most complete and useful conquest ever made by man. In his reclaimed state the dog is altogether devoted to his master, he knows and finds his property, and remains unalterably attached to him until death: nay, as we shall elsewhere prove, he continues to mourn his loss long after it has occurred. These manifestations proceed neither from fear nor hope of reward, but solely from genuine attachment. The swiftness, the strength, and the powers or scent of the dog, have created for man a powerful ally against other animals; and, in some points of view, dogs were actually necessary to the establishment of society. It may be further said of him, that he is the only animal which has followed man through every region of the earth. On the origin of our domestic breed of dogs, that ingenious naturalist, James Wilson, Esq. thus remarks: — " That whether it be from a single or complex source, is now entirely unknown as a subject either of history or tradition. It is lost in the usual obscurity of a remote antiquity, and can now only be ascertained (if at all) by the investigations of the naturalist. So infinitely varied is the external aspect of the domestic dog, and so much does it seem to depend, not only on the physical conditions of clime and country under which the animal exists, but on the moral and political state of the particular nation by which it is held in subjection; that, in numerous instances, all traces of resemblance to the original stock, or to any known species of wild animal, have disappeared; and after the lapse of ages we are, in fact, at last presented with what may be called artificial creatures, incapable of subsisting without the aid of man; and of which, accordingly, no natural type ever existed in any age or country. These have arisen in some cases from the necessities, in others from the caprices, of the human race, which, in this respect, may be said to have fulfilled the threat of Caliban, and 'peopled the isle with monsters.' It is clear from what we know of the harmonious laws which regulate the animal economy, that no such creature as a pugdog could ever have existed in a state of nature. Among no race of animals has the long and continuous dominion of mankind effected so great and such signal changes, both of form and manners, as among the infinite varieties of the dog. Many of these varieties, though originally produced by what may be termed accidents, are now permanent subspecies, if I may use the term, each of which is signalised by some peculiarity of physical or instinctive character, and differs from a mere accidental variety in the power which it possesses of reproducing individuals exactly similar to itself. The infinite value of the dog as a domestic animal, having also induced great attention to be paid to the different breeds, with a view to rendering them more extensively and more permanently useful, several of the most striking varieties have hence, for many ages, been encouraged and preserved in purity, and have thus become impressed with characters not only distinctive, but of so uniform and permanent a nature, as to exhibit, in some instances, the aspect of an entire difference in kind. Allowing, however, the utmost latitude to the influence of such extraneous or accidental causes, it is impossible, while comparing together certain of the extreme cases, to doubt that the origin of the dog tribe, considered in its generality, has been rather complex than simple." (*Quarterly Journal of Agriculture*, No. v. p. 539.)

Sect. I. *The Zoological Characters of the Dog.*

1374. *In the Linnæan arrangement of quadrupeds, the dog* (*Canis familiaris*) is the first species of a genus which comprehends animals whose exterior form and habits are considerably varied, but whose generic characters bear a close resemblance to each other. The animals included are the wolf (*Canis Lupus*), the fox (*C. Vulpes*), the jackall (*C. aureus*), and the hyæna (*C. Hyæna*). The characters of the genus are drawn from the number and the incisive formation of the teeth, as represented in *fig.* 112. p. 176. where in front are seen six pointed conical fore teeth above and below, the laterals being more lobated and longer than the others. The molar or grinding teeth are furnished with pointed prominences; and in the intermediate space between the incisors and molar teeth, placed on each side, above and below, is found a solitary incurvate tusk, from whence this tooth derives its characteristic name of canine wherever it is met with.

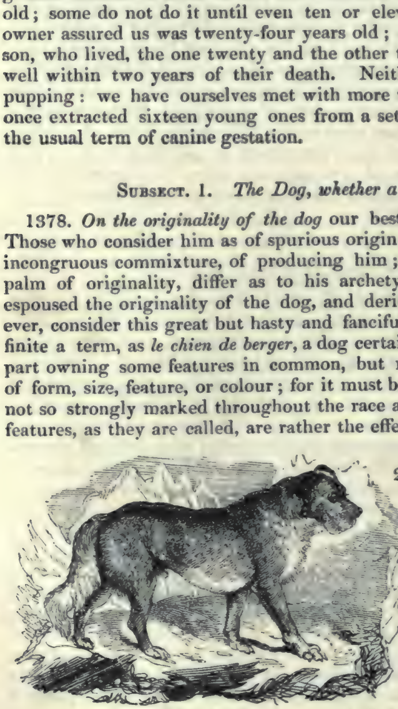
1375. *The specific characters*, or those by which this great master distinguished the dog from the other members of the genus, are, the head carinated or keel-shaped on the crown; the lower lip hid by the upper, indentated and naked at the sides; tongue smooth; five rows of whiskers on the upper lip; nostrils turned outward, into a crescent-shaped furrow; upper margin of the ears reflected and doubled posteriorly; anterior margin three-lobed, with seven or eight hairy warts on the face; teats ten, six abdominal, four pectoral; feet subpalmated, toes furnished with curved claws, not retractile. It is, however, necessary to observe, that Cuvier, with great propriety, excludes the hyæna from the dog species; for a more strict anatomical comparison affords sufficient proofs that the hyæna requires a distinct niche for its reception.

1376. *The Cuvierian generic characters of the dog are*, three false molars above, four below, and two tuberculous teeth behind each carnivorous one; the first of these tuberculous teeth in the upper row is very large; the upper carnivorous tooth has but a single small tubercle within, but the lower one has its posterior point altogether tuberculous; the canine tongue is soft; the fore-feet have five toes, and the hinder four.

1377. *The Cuvierian specific characters of the dog* are his curved tail, his great variability in size, form, colour, and the quality of his hair. "The dog is born," observes Cuvier, "with the eyes closed: he opens them on the tenth or twelfth day. His teeth begin to change in the fourth month, and his growth terminates at two years of age. The female goes with young sixty-three days, and brings forth from six to a dozen young ones. The dog is old at five years, and seldom lives more than twenty. [Query—Does not the baron antedate the period of canine senility by three or four years?] The vigilance," he continues, "the bark, the singular mode of copulation of this animal, and his striking susceptibility of a varied education, are universally known. Some naturalists think that the dog is a wolf, others a domesticated jackal. The dogs, however, which have become wild again in desert islands, do not resemble either of these species. The wild dogs, and those belonging to barbarous people, such as the inhabitants of New Holland, have straight ears, which would lead us to the belief that the European races, which approximate the most to the original type, are our shepherd's dog and our wolf-dog. But the comparison of crania points to a closer approximation in the mastiff and Danish dog; after which come the hound, the pointer, and the terrier, which do not differ between themselves except in size and the proportions of the limbs. The greyhound is more lank, and its frontal sinuses are small, and its scent more feeble. The shepherd's dog and the wolf-dog retain the straight ears of the wild dogs, but with a greater development of the brain, which proceeds increasing, with a proportionate degree of intelligence in the barbet and the spaniel. The bull-dog, on the other hand, is remarkable for the shortness and vigour of its jaws. The small chamber dogs, the pugs, spaniels, shock-dogs, &c. are the most degenerate productions, and constitute the most striking marks of that power which man exercises over nature." (*Règne Animal.*) The deserved reputation of Cuvier has induced us to introduce his character of this our favourite animal; but we are not precluded thereby from dissenting from such observations as general experience appears to contradict. Dogs so far from being old at five years, are then in their prime; and the greater number of them do not show decisive marks of age until they are seven or eight years old; some do not do it until even ten or eleven. We have seen a French dog, which its owner assured us was twenty-four years old; and we knew a brace of spaniels, mother and son, who lived, the one twenty and the other twenty-one years, and both hunted moderately well within two years of their death. Neither is twelve a maximum of their progeny at pupping: we have ourselves met with more than this number in several instances; and we once extracted sixteen young ones from a setter that died of distemper a week previous to the usual term of canine gestation.

Subsect. 1. *The Dog, whether a Factitious or an Original Animal?*

1378. *On the originality of the dog* our best naturalists are at variance with each other. Those who consider him as of spurious origin are yet disagreed as to the animals capable, by incongruous commixture, of producing him; while again, those persons who yield him the palm of originality, differ as to his archetype. Buffon, once a great authority, warmly espoused the originality of the dog, and derived him from the shepherd's dog. We, however, consider this great but hasty and fanciful writer was unfortunate in his use of so indefinite a term, as *le chien de berger*, a dog certainly known over the whole globe, and in every part owning some features in common, but not possessing a direct claim to identity either of form, size, feature, or colour; for it must be confessed, that the canine characteristics are not so strongly marked throughout the race as to prevent our surmising that these common features, as they are called, are rather the effects of habit, localisation, &c. than of any specific identity in the whole group. We have ourselves been heretofore disposed to consider the shepherd's dog as very nearly, if not wholly, a distinct breed, whose valuable qualities had occasioned him to be preserved with more than usual care from degeneration. On more minute inquiry, however, we now incline to the opinion that, notwithstanding a *pasture dog* is to be met with in most countries, he is not of unmixed breed: on the contrary, we now think that it would not be difficult to prove that the watch-dog of the shepherds of different countries are derived, not from one or even two, but actually from the three, grand divisions of *Caninæ*, i. e. the *pugnaces*, *sagaces*, and *celeres*. The watch-dogs of the Himalaya mountains and the Alpine spaniels, as they are called (*fig.* 206.), are instances of connection with the first. The true shepherd's dog of South Britain, and the sagacious colly of North Britain, belong to the second. As the numerous offsets from the third, under the various designations of matins, wolf-hounds, and Scotch and Irish greyhounds, &c. all of which are, or have been, trained to



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guard cattle, or occasionally to pursue animals, complete the anomalous list of Buffon's pasture dogs.

1379. *Blumenbach, Cuvier, and many also of the greatest naturalists of our own country,* assign to the dog a distinct compartment in the zoological scale. For ourselves we have long advocated the claim of the dog to a complete originality of creation, although it cannot be denied that he possesses many characters in common with the other members of his genus; yet his bark (said however to be acquired, but that we doubt), his method of carrying his tail, his visual aspect, and, above all, his plasticity of constitution, which fits him for every climate, and permits him to appear under such extreme variations in size and figure as are met with, give him a strong claim to an unmixed descent. Truth however obliges us to allow, notwithstanding these seeming proofs, and notwithstanding the weight of the opinions of the respectable authorities adduced, that the direct origin of the dog is a subject beset with such difficulties as to fully excuse the contrariety of opinions on it among the best naturalists. Pallas, Guldenstaedt, and some others, consider the dog to be altogether a factitious animal, compounded from the intermixture of various nearly allied animals. The opinion of Pallas, otherwise a great authority, appears to waver on this subject. At one time he informs us that he considers the shepherd's dog and the wolf-dog to be derived from the jackal; the mastiff from the hyæna; and the lesser tribes, as the terrier, from the fox. The descent from the hyæna appears more particularly questionable, as we have seen that anatomical peculiarities have assigned him a distinct niche in the classification of Cuvier. Nevertheless Burchel assures us of a possibility of such a parentage, from what he saw himself. Professor Wilson ably contends this point from the structural differences between these suspected congenors, in the teeth, the toes, and in the height of their shoulders, &c. &c.

1380. *Between the dog and wolf a fruitful sexual connection has been long asserted,* and the justly celebrated John Hunter says, "the dog may be the wolf tamed, and the jackal may probably be the dog returned to his wild state." Aristotle first remarked on this intercourse between the dog and wolf in *Cyrene;* but it does not follow that we should with Sir Thomas Brown (*Vulgar Errors,* book i.) infer the gradual degeneration of wolves into dogs therefrom: on the contrary, Scaliger denies the inference, *Possunt quidem lupi mitiores fieri, sed nunquam formam, et totalem feritatem exuent, quemadmodum et plantæ novo cultu mitescunt.* However it is believed, not only that this connection has proved fruitful, but also that it has been perpetuated, and that from such produce arose a breed, which was famed in the sportings of Arcadia and Lycaonia. Captain Parry, in his *Supplement* to his first voyage, observes on the relationship between these animals:—"Those naturalists who believe that no animal, in a perfectly natural and wild state, will connect itself with one of a different species, will consider the long agitated question of the specific identity of the wolf and dog as determined by a circumstance of frequent occurrence at Melville Island. In December and January, which are the months in which wolves are in season, a female paid almost daily visits to the neighbourhood of the ships, and remained until she was joined by a setter dog belonging to one of the officers; they were usually together from two to three hours; and as they did not go far away unless an endeavour was made to approach them, repeated and decided evidence was obtained of the purpose for which they were thus associated." Dr. Richardson, in his *Fauna Boreali Americana,* is of opinion, that the dog has been originally derived from the wolf; and in the three chief canine varieties which he describes as common to the northern parts of British America, the Esquimaux, Hare Indian, and North American or Canadian, he draws a parallel between them and the three chief varieties of wolves. It was long our own opinion that the wolf must be considered a distinct species of the canine family, and not an unreclaimed dog. The angular form of the osteology of the head; the more superior placing of the auditory portions of his temporal bones; the greater inclination of his orbitary fossæ; the larger proportional length and strength of his teeth; his prolonged and more obliquely placed cubitus; and the constant pendulous carriage of his tail, appeared to us to be characters essentially *wolfish.* We shall, however, have something more to add elsewhere on this (as we think it) important subject, and by no means definitively settled.

1381. *The fox differs more decidedly from the dog than the wolf,* and yet we are by no means prepared to deny that a prolific intercourse does occasionally take place between these animals; on the contrary, we believe it has occurred, but we nevertheless regard the occurrence as too rare to have any material influence on our canine races. The fox is a solitary night prowling animal, structurally marked by a linear direction of his pupils, purposely given to assist in nocturnal vision. He is mephitic to a great degree; and the stench he emits is so truly vulpine, that it is said not to be imparted to his bastard progeny when he has any. It may be added, that his voice is confined to a whine; and that, even in a domesticated state, it is seldom that he does not retain his characteristic treachery. Notwithstanding these facts, candour obliges us to remark, that there yet remain naturalists of celebrity who favour a vulpine origin of the dog. In the *Library of Entertaining Knowledge,* under the title *Dog of the Mackenzie River* (vol. i. p. 49.), the following appears:—"In the northern parts of the continent of North America, there are dogs of a very different variety from those of the Esquimaux. They are slender and graceful, with sharp nose and pricked ears, and very much resemble, except in colour, the arctic fox of the same regions: indeed, these dogs are considered a variety of this fox (*Canis Lagopus*). Three of these species from the Mackenzie River were once shown in the gardens of the Zoological Society." Mr. Bennett, in his beautifully illustrated work on the animals confined there offers the following considerations on the claim of the dog to a distinct origin:—"Of the distinctive characters between the fox, the wolf, and the dog," he first observes on those between the fox and dog, that "the most remarkable bears a direct relation to their different modes of life, and seems therefore to furnish an adequate ground for their separation. In dogs, however great the intensity of light to which they may be exposed, the iris uniformly contracts around the pupil in the form of a circle ; while in the fox, if it be observed during the day, or under the influence of a strong light, it is seen to close in a vertical direction, the pupil assuming the figure of a section of a double convex lens. The object of this provision is evidently to exclude the rays of light in a much greater degree than would be compatible with the structure of a circular pupil ; and it is consequently only found in those nocturnal animals, in which the faculty of vision is capable of being exercised through the medium of a comparatively small proportion of light. Such animals are necessarily incapable of bearing the full blaze of day, which soon becomes painful to their eyes, thus compelling them to close their pupils to such an extent as to render their vision very imperfect. Much of the cunning and suspiciousness of manner for which the fox is notorious, is evidently due to this very circumstance ; his attitudes and motions necessarily partake of the uncertainty of his sight ; and he appears to be most cunning when he is in reality most short-sighted. To shade himself as much as possible from the light, he hides himself in burrows during the day, and prowls abroad in full possession of his perceptive faculties under the influence of a cloudy night. But although this distinction of nocturnal and diurnal may seem at the first glance to be perfectly natural, a slight acquaintance with the animals to which it is sought to be applied, will teach us that its value is in point of fact not so great as theory would lead us to imagine. The wolf, with a circular pupil, is almost equally nocturnal in its habits with the fox himself ; and the jackal, which both in size and form makes the nearest approach to the latter, and which not only prowls abroad during the night, but conceals itself like him in burrows throughout the day, has its iris formed exactly on the same plan with that of the domestic dog. We cannot therefore consider the habits of the two divisions of the genus to be discriminated in so marked a manner as to justify their separation by means of this character, and still less by means of those minor distinctions which have been thrown as make-weights into the scale. Of these the most striking is unquestionably the great difference in their attitudes ; the upright bearing of the wolf and other species of that division, although mingled with a degree of dogged indecision, strongly contrasting with the crouching and almost trailing posture in which the foxes make their advances. The bodies of the latter seem consequently to be much less elevated upon their legs, and to be even somewhat elongated ; and their shoulders and haunches assume a broader and more rounded form. Their heads also are broader and flatter, and terminate in a narrower, shorter, and more pointed muzzle. Their tails are considerably longer, and much more bushy ; and their furs, especially the winter coat, and in the more northern regions, are longer, softer, and far more valuable as an article of commerce. The lobes of the incisor teeth of their upper jaw are not in general so distinctly marked as those of the dog." (Vol. i. p. 215.) We cannot however agree with Mr. Bennett, that the wolf, as an animal, is nearly as nocturnal as the fox. He is probably more successful in his nightly prowlings in countries under close cultivation : but this is not a fixed habit with him, nor are his visual organs either so specifically formed for nocturnal vision as is seen to be the case in the fox. Throughout the forests of France and Germany, the wolf is seen very frequently on the prowl during the day ; and it is the same in other localities where he is found. Mr. Bell, in his *History of British Quadrupeds*, observes, — " That the specific characters of the dog, as given by every zoologist who has attempted it, are unsatisfactory and incorrect." He however favours the opinion of the wolf being the primogenitor of the dog ; nor can it be denied that he argues the point with much force (see p. 203. of his work). We would ask, Is the gestatory period (as some affirm it to be) the same in the wolf as in the dog ? If it is not, then their identities are evidently null.

1382. *Of the existence of a race of dogs* derived from prolific intercourse between various wild animals, *ϑηρομιγαι*, in nowise congenerous, as lions, tigers, &c. &c. we presume we need not attempt to discourse, although in the opinion of Oppian, and other ancient cynegetical writers, such hybrids were not uncommon. — *Credat Judæus Apella.*

Subsect. 2. *The Varieties of the Dog.*

1383. *The deviations from any determinate form, size, colour, or well defined quality, of dogs,* are each and all of them greater than those seen in any other quadruped whatever. As an instance of the variation in the proportions of the body of different dogs, we would direct the reader's attention to those of the Thibet Molossian, seen a few pages onwards, as contrasted with those of a terrier, extremely well bred, the property of a gentleman of our acquaintance, and introduced by us in his true *relative* proportions, as compared with the gigantic mastiff of the Himalaya mountains. An original and determinable outline is lost in boundless variety ; nothing remains permanent but the general structural arrangement of the internal organs. The physical and moral agencies which result from domestication, and particularly that arbitrary regulation of the sexual intercourse which confines it to selected duplicates, have had vast influence in promoting these extraordinary variations from a common type. Much is also to be attributed to the effect of climate. Mr. Griffith, in quoting the sentiments of the French naturalists on the subject, observes, " It is said the shepherd's dog, transported into the temperate climates, and among people entirely civilised, such as England, France, and Germany, will be divested of its savage air, its pricked ears, its rough, long, and thick hair ; and, from the single influence of climate and food alone, will become either a French matin, an English mastiff, or a hound. The last, whether staghound, foxhound, or beagle, transported into Spain or Barbary, where the hair of quadrupeds in general becomes soft and long, will be converted into the land spaniel, and the water spaniel, and these of different sizes. The grey matinhound, transported into the north, becomes the great Danish dog ; and this, sent into the south, becomes the greyhound of different sizes. The same transported into Ireland, the Ukraine, Tartary, Epirus, and Albania, becomes the great wild dog, known generally by the name of the Irish wolf-dog. If these premises be correct it follows, that these varieties of the dog are not of original creation, but that they result from climate, or other unknown causes, acting on the first species. (*Animal Kingdom*, vol. ii. p. 319.)

1384. *An excellent synoptical table of the several varieties into which the dog is branched out,* has been formed by T. M. Cuvier (a younger brother of the baron), who, after the method of his illustrious relative, founds his data on a careful examination of individuals, and a general comparison of the whole. We shall, however, not follow T. Cuvier's synopsis with a slavish adherence; on the contrary, presumptive as it may appear, we shall occasionally be constrained to differ from it; but when we do so, we shall notice our dissent, and our reasons for it. It indeed appears to us, that not unfrequently the learned brothers (the Cuviers) are at variance with each other, and now and then with themselves also, on this particular subject; or, otherwise, that their translators, annotators, and commentators, are so for them. The subject itself however, we again repeat, is beset with many difficulties, as is evident by the facts that the observations made during many centuries, while they have increased our admiration of this animal for his amiable qualities, and excited our gratitude for his services, yet have done little towards clearing up the obscurities which hang around his direct origin, or towards the tracing of his principal varieties to their true sources, or to a satisfactory grouping of their consimilars. Before however we offer this sketch, we propose to glance at the more confined, but not less important, divisions of the dog, which are noted in the classic pages of early critics.

Sect. II. *The Dogs of the Ancients.*

1385. *The varieties of the dog of early times*, without doubt, were few compared with those of the present day; and consequently the more prominent breeds admitted of a ready classification. The most critical monograph that we have met with of the ancient *canes venatica*, is that which is appended to a late translation of the *Cynegeticus* of Arrian. The accomplished scholiast who has thus employed himself, commences his summary by observing, that it must not be expected of him "to enter into an account of all the semi-fabulous dogs of classical antiquity, or attempt to reduce within the pale of a zoological arrangement, the shape and properties of every mongrel, however memorable, that has puzzled the discriminative acumen of Conrad Gesner himself; or find archetypes in the kennels of Greece and Rome for 'all the bark and parish tikes' of the credulous Dr. Caius, and more recent writers of canine biography." After some discursive but interesting matter, the same writer proceeds to remark on the prevalent notion among the ancient classic writers, that the qualities and dispositions of the animals of each country, are in accordance with those of the human inhabitants. "Strabo remarks in the Iberian and Albanian people and their dogs, which had long been acknowledged for their excellence, the same fondness of hunting (*fig.* 207.); and Ælian does the same in the Medes and their horses. These probably he meant to contrast, as well as their proud riders, with the sorry looking unsightly horses of Libya, (active, however, and patient of fatigue), and the unsightly people of the country. The naturalist then proceeds to say, that such also are his opinions with regard to the dogs of each country; and specifies, as examples corroborative of his hypothesis, the Cretan, Molossian, and Carmanian." The Albanian, as here seen, does not differ, except in size and strength of limbs, from the greyhound of early times, and, without doubt, could have been cultivated into one.

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1386. *A threefold distinction of canes venatici*, as we are informed by this accomplished annotator, was acknowledged by classic authors during the imperial government of Rome: — "I do not mean," says he, "that this classification is accurately observed by all the cynegetical and popular authorities; but it may be traced, more or less clearly, in the writings of Gratius, Seneca, Artemidorus, Oppian, Claudian, and Julius Firmicus." On the authority of the various *Cynegetica* of Greece and Rome of a certain date, he assumes, that "all the more celebrated varieties of the canine race may be classified under the triple division of *pugnaces*, *sagaces*, and *celeres*. (See *Dogs of the Early Britons*, p. 110.) In Xenophon, and the earlier Greek writers, we do not trace more than a twofold division into *pugnaces* and *sagaces;* the varieties of the latter class differing, perhaps, amongst themselves in degrees of swiftness. Indeed, that they did so is evident from what Socrates remarks of the sagacity and speed of different individuals of the race in the well known interview with the beautiful but meretricious Theodota." (*Xenophon*, *Memor.* l. iii. c. 11.) The *swift footed* of this passage must not, however, be interpreted as the *celeres* of our third class, which will be found to contain only the *vertagus* of Arrian (the early type of the greyhound of Britain), on whose authority it is affirmed that the greyhound was unknown in Greece in the days of the Socratic Xenophon. Probably they were the most speedy of the *canes Laconici*, to which the philosopher alludes; but unquestionably they *had* not reached either the symmetry or speed of the British greyhounds of our day. In accordance with the distinctions pointed out in the classical kennels, is the threefold character of ancient hunting: but as coursing, properly so called (the third variety of chase peculiar to the *vertagus*), was of late introduction in comparison with hunting, the two grand divisions of the sports of the field may be considered as primarily founded on the twofold distinction of *canes pugnaces* or *bellicosi*, and *canes sagaces*; and by Gratius, under the terms *arma* and *artes*, both are vividly depicted." (P. 207.)

1387. "*In the first class of the triple division* (*quibus est audacia præceps*, or *gravioribus aptæ morsibus*), are included all the *canes pugnaces* or *bellicosi* — pugnacious dogs of war, — the Mede, Celt, Ser or Indian, Albanian, Iberian, Lycaonian or Arcadian, Hyrcanian, Locrian, Libyan, Egyptian, Pannonian, Magnesian, Molossian, Briton, Athamanian, Acarnanian, and a few others nearly allied."

1388. "*In the second class of canes venatici, under the title of* "*nare sagaces*," are placed all keen-nosed dogs of scent. The Spartan, Cretan, Carian, Etolian or Calydonian, Metagon, Belgian, Gelonian, Umbrian, Tuscan, Armenian, Petronius, Agassæus or Briton, Segusian, and others of inferior note."

1389. "*In the third class*, entitled *pedibus celeres*, those dogs alone are comprehended, which ran on sight of their game, as the *vertagus*, and possibly the *sicamber*: of the latter, however, I know nothing beyond the meagre allusion of Gratius to his speed, and the apparent distinction made between him and the *vertraha* in the *Cynegeticon* of this poet." (*Loc. cit.* p. 215.)

1390. "*With regard to the original geographical distribution of the three varieties of bellicosi, sagaces*, and *celeres*, and of their respective chases," observes the same authority, "the most prevalent opinion of continental writers, who have devoted their attention to the *Cynegetica* of Greece and Rome, is that the last mentioned originally came from Gaul, the sagacious from Greece, and the *bellicose* from Asia." War-dogs of pure blood are nearly extinct in the British islands, and are becoming more rare on the continent of Europe, being much crossed with the sagacious and swift footed tribes. Vlitius, himself a Dutchman, naturally espouses the Belgic origin of the Belgic, or more correctly speaking, the Celtic dog. Spelman, on the contrary, claims him for the honour of Britain; and, in addition, we have always deemed some sorts of *bellicosi* and *sagaces* indigenous to this country. Mr. Whitaker, in his *History of Manchester*, gives to the ancient Britons the old English hound, or talbot, as the parent stock of the celebrated sagacious hound of our island; and it is found by experience, that this dog degenerates in every other part of the world—a strong presumptive proof of his being indigenous to Britain. The earliest record of the greyhound allots him to Gallia; and we have no hesitation in considering him of Celtic origin, notwithstanding the offensive disclaimer of Savary of Caen — *Gallos non hæc infamia tangit.* No exclusive national claim can be made for the pugnacious tribe, almost every nation of antiquity having had its particular variety; of which none surpassed the *Britannus* and *Molossus*, natives of regions remote from each other, unconnected probably in their lineage, and united alone in untamable ferocity of character. The translator of Gratius, after enumerating the various sorts of the British hound, greyhound, and mastiff (which he calls "*indigena*, or native of England"), observes, — "All these dogs have deserved to be famous in adjacent and remote countries, whither they are sent for great rarities, and ambitiously sought for by their lords and princes, although only the fighting dogs seem to have been known to the ancient authors; and perhaps in that age hunting was not so much cultivated by our own countrymen. (See *Appendix to Arrian on Coursing*, p. 220. See also our history of the *Greyhound* in our *Coursing Treatise*, p. 555.)

Sect. III. *The Dogs of the Moderns.*

1391. *Dr. Caius, a naturalist of the seventeenth century* already alluded to, wrote a Latin treatise on British dogs; in which he notices the following varieties: — terrare (from *terrarius*), harier, bludhunde, gasehunde, grehunde, leviner or lyemmer, tumbler, spaniel, setter, water spaniel or fynder, spaniel gentle or comforter, shepherd's dog, mastive or bande-dog, wappe, turnspit, dancer. This division is now only noticed as a matter of record, but not of authority, we shall therefore pass on.

1392. *The arrangement of M. F. Cuvier*, as already observed, classes the dogs of the present day into three groups, as matins, spaniels, and dogues. These divisions being acknowledged by many naturalists, will engage our attention as we proceed.

Subsect. 1 *First Group — Matins.*

1393. *The anatomical characters of this division are*, the head more or less elongated; parietals insensibly shelving towards each other; condyles of the lower jaw placed in a horizontal line with the molar or upper cheek teeth. The principal members of the group are: —

1394. *The dingo, or New Holland dog* (*Canis Australasia*), resembles both the shepherd's dog of France and its matin also. The portrait (*fig.* 29. p. 44.) will show its general likeness to its ancient wild type. It is about two feet high; the body is moderately thick, with head tapering, muzzle pointed, and ears short and erect. In colour it is either a tawny yellow or a reddish brown. In temper it is very ferocious, so much so that an ass had nearly fallen a victim to one brought to this country. The dingo at once leaped on its back and began instantly to devour it. The Sumatra dog is a variety which does not differ essentially from the former, and is equally intractable but more lively. Specimens of this dog are to be seen in the Zoological Gardens.

1395. *The dhole, or wild dog of the East Indies, and found in Southern Africa also*, resembles the dingo in figure, but is uniformly of a bright red colour. The only sporting dog believed by Major Napier to be indigenous to India is called the *polygar*, which is brought from the southern provinces, where it is used by the mountaineers of Coimbatore in the chase of the bear and wild hog. It is described as an ungainly animal, wholly destitute of hair, very strong, and at all times fierce and unmanageable, excepting by its keepers. On the borders of the Cape Colony wild dogs hunt together in packs of from ten to sixty, and by their extraordinary powers of endurance, and the mutual assistance they organise, they run down and overcome the largest antelope. Their pace is a long never-tiring gallop, and relays of them alternately take the lead. Mr. Cumming remarks that they entertain less fear of man than any other carnivorous animal with which he is acquainted.

1396. *The Albanian dog* (*fig.* 207. p. 391.), has occasioned much disputation among historians, naturalists, and poets, ever since Europe first began to be raised into consequence and importance. A supernatural origin and infallible powers have been attributed to it. Diana is said to have presented Procris with a dog, which was always sure of its prey; together with a dart, which never missed its aim, and always returned to its owner. To the former the canine genealogists of antiquity attributed the origin of the celebrated race of the south-east of Europe, particularly of Molossus and Sparta. The very fine breed of dogs, now found in this corner of Europe, particularly in Albania, does not accord with the descriptions existing of its progenitors, indigenous to the same countries, but seems altogether to have degenerated. These dogs were formerly said to be as big as a mastiff; their thick fur was very long and silky, generally of different shades of brown; the tail was long and bushy; and their legs seemed more calculated for strength than excessive speed, being stouter and shorter than those of the greyhound. On the contrary, as we see them now, the head and jaws are elongated, the nose is pointed, and they rather appear to be members of the *celeres*.

1397. *The Molossian dog is very differently described by different naturalists.* By some it is likened to the Albanian, having similar elongated jaws and pointed muzzle. By others (but which description cannot typify the dog we allude to, and seen, *fig.* 208.), the Molossian is considered as the parent of the bull-dog, or to be identical with it. But it will be seen by a reference to one in the Zoological Gardens, that it is in fact more nearly allied to the British mastiff than to any other of the dogs already described. It is also typified by the Alpine spaniel (*fig.* 206. p. 388.). To reconcile the discrepancy which occurs in these accounts, we would ask, Were there not two distinct varieties of the *canes bellicosi* of the Epirote breed? The Epirote, or Albanian, which was more lightly framed, and hence fitted for the pursuit of those beasts whose safety depended on flight. Another breed, also called Molossian, was of a stronger build, and thence calculated to contend, *at force*, with the most powerful beasts. It is probable that it was of this latter kind that Pliny makes mention, when he informs us that, "While Alexander the Great was on his march to India, the King of Albania sent him a present of a dog of unusual bigness. Delighted with his appearance, he ordered bears, then wild boars, and afterwards deer, to be turned out before him, of none of which, however, he condescended to take any notice. The high spirited prince, provoked at this indolence in a creature of such dimensions, ordered him to be put to death. Fame carried the tidings of this event to the king, who sent him another, with a request that he should not be tried on 'such small deer,' but on a lion or an elephant; adding that he had had only two, and if this also were slain, there would remain none other. Alexander did not delay, and speedily saw a lion overpowered. He then ordered an elephant to be produced, and was never more delighted with any exhibition. The dog, with his body all bristling with horrid hair, opened the attack with a roar like a peal of thunder, and rising against the elephant, now on one side and now on the other, and combating or retreating as he found it necessary, in the most artful manner, by assiduously wheeling round, he at last brought him to the earth, which was shaken by his weighty fall." (*Quarterly Journal of Agriculture*, No. vi. p. 238.) If this account be true, we find a ready solution of the difficulty regarding the source of the *Molossus Thibetanus.* The illustrator and translator of Arrian observes, that, "Of all the pugnacious dogs

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of the classic file, the most renowned were those bred on the continent of Epirus, and denominated, from one of its principal districts, Molossian; of which Aristotle records two varieties, the one for ordinary hunting, the other for guarding flocks, houses, and property."

1398. "*The fabled origin of this breed,*" continues our authority, "is consistent with its high repute in the kennels of antiquity; for, on the authority of Nicander, we are told by Julius Pollux, that the Epirote was descended from the brazen dog, which Vulcan wrought for Jupiter, and animated with all the functions of canine life! The prowess of the *Canes Molossi*, rendered them most useful auxiliaries in the field of battle, and they were equally prized in the contests of the circus and amphitheatre. Their war praises are sung by the classic muse of Darcius, in a style worthy the purest age of Roman literature; nor are their other merits forgotten by this accomplished poet. The attachment and fidelity of the Epirotes to their masters formed a remarkable feature of their tribe; so much so, that Statius tells us the soldiers of Molossia wept over their faithful canine companions slain in the war." "As dogs of chase," says the commentator on Arrian, "their strength, size, and undaunted courage, enabled them to contend with the most powerful wild animals;" and we are assured that the lion himself has been mastered by the dog of Epirus; the tiger, pard, panther, and boar, have also yielded to him. The epithets applied to the *Canis Molossus* all indicate his fire and resolution. Ælian calls him *ϑυμικωτατος*; Virgil, "acremque Molossum" (*Georg.* iii.); and Seneca uses the same epithet, "teneant acres lora Molossos." (*Hippolyt.* act i.) But there is much difference of opinion, whether he is an *open* or *close* hound, when employed in the field. To the latter conclusion I am induced to accede from the following passage of Statius: —

> "*Muto* legit arva Molosso
> Venator, videat donec sub frondibus hostem."

On the trail of his game I believe him to have been a mute limier, or limehound (whence Savary's term *echemythus*), and never to have opened until the quarry had started from its lair, being even at that time less noisy in his bark than the purely sagacious breeds. His silence, or *closeness*, is clearly indicated by Gratius, where he orders the yelping Etolian dam to be crossed with a Molossian sire: —

> "Vanæ tantum Calydonia linguæ
> Exibit vitium patre emendata Molosso." *Trans. of Arrian*, p. 241.

1399. *Dr. Wallich says that these noble animals,* which were to be seen in the Zoological Gardens (for they died soon after their arrival), "are the watch-dogs of the table land of the Himalaya mountains about Thibet, and are thought to be the only individuals of the kind which have reached Europe. We, however, remember to have seen one in the possession of the Countess Minden, an exact counterpart to those which were heretofore in the Zoological Gardens. This dog, as she informed us, she met with in Germany. It had already been with her several months, and was then in perfect health. The late Mr. Morecroft, in the account of his journey to Lake Manasarovara, also notices these dogs as guards to the flocks of the Uniyas, and as being very fierce and disposed to attack all strangers.

1400. *The matin* (*Canis Laniarius*). Buffon has given a vast consequence to this dog, as the progenitor of most of our large and valuable sporting breeds. Pennant identifies it with the Irish greyhound, which it certainly resembles; but it is neither so tall nor so wiry coated. Sir William Clayton likens it to a half-bred greyhound, and Mr. Wilson to a cross between the shepherd's dog and the greyhound. Mr. Griffith appears to consider the Molossian or Albanian dog, the French *matin*, the Irish greyhound, the Scotch greyhound, the Dane, and even the English greyhound, as modifications of each other.

1401. *The Danish dog is considered as the largest dog known;* probably it would be more correct to call it the tallest. It is not (in our opinion however), as Buffon asserts, the matin transported to a northern latitude; neither is it so generally, as the synopsis of Cuvier would lead us to conclude, marked all over with small round black spots on a white ground. The lesser Dane, Dalmatian, or braque de Bengal, of Buffon, is certainly so marked; but the great Dane is rather pied or patched than spotted, and is of such a size that Marco Paolo inflates it to the dimensions of an ass. These dogs are smooth coated, and appear to have been of a light fawn colour, but are now often seen brindled, or broadly spotted, or patched with a dingy brown on the original ground. The dogs of Epirus, so famed for their strength and courage, were of this kind (*Aristotle*, lib. iii. c. 21.); Pliny also notices them in terms of admiration (lib. viii. c. 40.): to us they appear to have a near connection with the German boarhound.

1402. *The lesser Dane dog, Dalmatian, or coach-dog,* so called, *le braque de Bengal* of Buffon, is a beautiful animal, regularly spotted over his body with black or dark blue spots on a light ground. In form he is between the hound and pointer, and, without doubt, might be cultivated into the one or the other. Bewick is severe on Buffon, under the idea of its incapacity of scenting game; but to give validity to his criticism, he should have proved that it wanted the faculty, which we make no doubt was as inherent in him as in any hound whatever. It had not been taught the pursuit of game, and was therefore not impressed with the ardour of the chase.

1403. *On the greyhound* type (*C. graius* Linn.) we shall hereafter have much to say, when we treat on coursing; suffice it, therefore, to remark of it here, that it appears to have been a dog of some, but not of great, antiquity. In Xenophon's time no such dog as the greyhound is mentioned: it is, however, without doubt, derived from the *vertagus*, or *vertraha*, of Celtic origin. It is truly hinted at by the learned translator of Arrian, that much of the obscurity which hangs around the derivation of the greyhound, may be attributed to the common mistake of considering it as being of Grecian origin; whereas this dog has no connection whatever with Greece. (See *Greyhound* in our coursing department, p. *555*.) We have had numerous occasions of pointing at a certain balance of power or equalisation of benefits maintained throughout nature. Improve any organ or quality of an animal by art, to a very considerable degree, and a certain deterioration ensues in some other organ or quality to make the balance of power equal. Thus, when by judicious crossings and selections of particular specimens to breed from, the speed of the greyhound was increased to a degree wholly incompatible with the powers of escape of the animals he preyed on, it then followed that the faculty of scent, by which he could have continued the chase to the certain destruction of the animals he pursued, gradually lessened, leaving him eventually a gazehound only; for had he continued to run as well by scent as sight, the races he warred against must have become extinct.

1404. *The great Scotch and Irish greyhounds we believe*, from analogical reasoning and historical notices, to be descended from the *vertagus* as we have stated: nor with all our own coursing predilections, and our personal attachment to the object himself, we cannot find reason to separate the English greyhound from being an offset of the same root, although such zealous coursers as Mr. Thacker would fain raise him to the rank of an original formation; and when we look at the greyhound, we can but respect their zeal.

1405. *The Irish greyhound*, popularly so called (*C. graius Hybernicus* Ray, *fig.* 209.), and well known a century or two ago, exhibited much of the type of the wolfhound. At that time he was seen majestically large, mostly rough coated, and usually, we believe, of a light grey tint, with fawn coloured markings. If his size were not exaggerated (but which we think was the case), he was said to be four feet high: but, as the wolf became scarce, and the huntings this dog was employed on were principally confined to deer, and to coursing the fox, his robust form and extravagant height was somewhat checked; and becoming rather more slender, he was more able to cope with the nimble prey he was then matched against. We have ourselves seen in Ireland specimens of what was called the Irish greyhound, which were certainly near three feet high; they were symmetrically formed, but were evidently framed more for power than great speed. Those we have seen were extremely mild in their disposition, and apparently somewhat inactive, which might readily be accounted for by the long disuse of their powers. To us they appeared interesting memorials of the chase of early times. Captain Brown says that the breed is still preserved by the Marquis of Sligo at Westport, in the county of Mayo; but we have heard this account contradicted; and we believe the truth to be, that, for a considerable time, the true breed was attempted to be kept up by the father of the present marquis, but that by neglect it had degenerated into a bastard type. Captain Brown's account informs us, that one of the old stock kept at Westport was measured by A. B. Lambert, Esq. one of the vice-presidents of the Linnæan Society, when its dimensions were found to be as follows: — "From the point of the nose to the tip of the tail, 61 inches; tail, 17½ inches long; from the tip of his nose to the back part of the skull, 10 inches; from the back part of the skull to the beginning of the tail, 33 inches; from the toe to the top of the fore-shoulder, 28 inches and a half; the length of the leg, 16 inches; from the point of the hind toes to the top of the hind shoulders, 13 inches; from the point of the nose to the eye, 4½ inches; the ears, 6 inches long; round the widest part of the belly (about 3 inches from the fore-legs), 35 inches; 26 inches round the hind part, close to the hind-legs; the hair short and smooth; the colour of some brown and white, of others black and white." The ingenious author of the *Wild Sports of the West*, hints that it is possible Captain Brown's error with regard to the Irish greyhound being still preserved in its original purity by the Marquis of Sligo, arose from the marquis importing some double nosed boarhounds. The nobleman alluded to is known to be an encourager of field sports, and of the breed of sporting dogs generally,

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of which we believe he is a very excellent judge; and we incline to think that Captain Brown's error rather arose as we state it, than from his mistaking the one breed for the other.

1406. *The Scotch greyhound deer-dog, or ratche* (*C. Scoticus* Fleming, *fig.* 210.), is somewhat less in size than the Irish dog just noticed, at least such as we ourselves have seen were so. They somewhat resembled a strong, coarse, wire haired English greyhound, of olden times, and, like him, they use the nose in pursuit of the deer. They nearly approach the proportions of the so called old Irish greyhound, but are far more courageous. Captain Brown, in his amusing *Biographical Sketches of Dogs*, informs us that Captain Macdonell, of Glengarry, a gentleman remarked for his attachment to whatever characterises the sports and customs of former times, keeps up this breed (the late Duke of Athol is also said to have done the same); and in order to preserve it from degenerating by consanguineous origin, he crossed them, both with the bloodhound from Cuba, and with the shepherd's wolf-dog of the Pyrenees; which latter is distinguished for its scenting qualities as well as for its great size, beauty, and docility. Sir Walter Scott's celebrated dog Maida was of this kind, and is said to have been a most noble animal. It is stated however, that Holyland, the forester of the great chieftain of Glengarry, affirms that these dogs were bred in-and-in from the nearest affinities. "The modern Scotch greyhound," says the translator of Arrian, "differs from the Irish in many respects: the former is rough and wiry, has a bearded snout, and ears half-pricked; the latter has short smooth hair and pendent ears: the Scotch is sharp, swift, and sagacious; the Irish dull looking, harmless, indolent: the former is still common in North Britain; the latter is become exceedingly rare every where. From Mr. Lambert's description of a modern specimen, the Irish wolf-greyhound seems to have degenerated much in size." (See also *Fleming's British Animals*, p. 12.)

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1407. *The Italian greyhound* is an elegant variety, cultivated, without doubt, from a continued selection of under-sized greyhounds, which being at first native to an arid eastern climate, and subjected to confinement and a slender diet, at length settled into the exquisitely delicate and tender animal we see. It is not susceptible of education, nor are its attachments strong: tender in the extreme, it suffers much from cold, and is very obnoxious to disease. In distemper one in four only usually survives. A white Italian greyhound is rare. We presented one to the lamented Princess Charlotte of Wales, which she prized much, and it was very healthy.

1408. *The boarhound in its original state is very rarely met with*, except in some of the northern parts of Europe, particularly in Germany. "A few years ago, T. Scarisbrick, Esq. of Scarisbrick in Lancashire, brought from that country a fine specimen of the boar-dog, which was presented to him by the Prussian general, Bulow. Mr. S. afterwards gave it to Mr. W. Bibby, a gentleman who resided near him, in whose possession it remained for several years, but was ultimately poisoned. It was about the size of a mastiff, of a dusky yellow or cream colour, very strongly formed; and though it much resembled the mastiff, yet its *tout ensemble* was evidently characterised by a mixture of the varieties of the dog tribe, and no doubt of those just mentioned. It was named after the distinguished character from whom it was obtained; and it was as anxious in the pursuit of a hare, as its former master was to meet the French on the field of Waterloo. It was much inclined to steal off into the fields and chase hares, not that it was able to overtake one after the manner of the greyhound, but its deficiency in speed was made up in an exquisite nose; and Bulow seldom gave up the pursuit but with the death of the object, which he immediately devoured, and then quietly returned home." (*Annals of Sporting*, No. xv. p. 164.) The boarhound is without doubt a near descendant from the great Dane, intermixed with a more remote cross of the mastiff.

Subsect. 2. *Second Group — Spaniels.*

1409. *Anatomical characters:* "The head moderately elongated; the parietal bones do not approach each other above the temples, but diverge and swell out so as to enlarge the forehead and the cerebral cavity. This group includes some of the most useful and intelligent dogs."

1410. *The spaniels* (*C. fam. exterius* Linn.) is supposed to derive its name from its Spanish origin: with us, however it has branched into numerous varieties and subvarieties. The sporting spaniel which stands at the head of the list, presents in itself many offsets, some of which are named from their patrons, as the *breed* of King Charles, the Blenheim, &c.; others are called after their local origin, as the *Maltese;* and the form of some governs their nomination, as the *lion-dog*, &c. We have *water spaniels*, great and small, and their congeners, the *barbet* or *poodle*. The Newfoundland dog is a spaniel, the setter also, and the Alpine spaniel. The principal varieties of the spaniel in use for sporting purposes will be more fully described hereafter. We cannot, however, omit this opportunity of recanting an error of our own, which subsequent investigation has convinced us of: we now by conviction place the Newfoundland dog in the spaniel group, to which his form, his coat, and his hunting propensities, evidently entitle him.

1411. *Of the Newfoundland dog*, now so cultivated amongst us, we shall historically remark, that although it was without doubt first introduced to general notice from Newfoundland, there is every reason to suppose that it was originally derived from the large dogs of Spain, introduced by the early discoverers of the American continent; which, intermixing with the native breeds, produced an increase of size and power in the future races. These would be encouraged by the natives, because the uses they made of them as beasts of draught were thereby better fulfilled. Such, we have reason to believe, was the first improvement made on the native dogs of those countries, which, as far as a factitious breed can continue its like, seemed, but in limited numbers, to have remained a standard among them until English importations had drained almost all of them. Another variety forms the *smaller smooth aquatic dog* of Newfoundland. When the English settled here, they without doubt carried with them some of the largest and most powerful of the water spaniel breed, to assist them in the hunting and shooting of wildfowl; and there is little reason to doubt, but that an intermixture with these also assisted in perfecting a breed, from whence our admired specimens of the large Newfoundland dog arose; the breeding of which, however, was never carried to any great extent in that country. The rigours of the climate, and the difficulty of procuring food for it during some seasons of the year, were unfavourable to both the production of numbers and to the full development of the frame. The splendid animal we now see, has been greatly increased in size since its residence among us: we have cultivated it so as to make it now an English breed, while in Newfoundland it is at present so nearly extinct, that a writer in the *Sporting Magazine*, No. cxxiii. new series, states, that he could not find a single dog of the kind at St. John's. If this be so, it is a mistake when naturalists assert that the dog we possess is the same with that which is "employed in their native districts in place of the horse."

1412. *The Alpine spaniel of the Cuvierian arrangement* (*fig.* 206. p. 388.) has but little of the qualities or appearance of the sporting spaniel beyond his long silky coat. It presents more of the characters of a breed between the Newfoundland dog and mastiff, or between the mastiff and setter. It is one of the two kinds of dogs which are sent out by the monks in quest of travellers who may be buried in the snow. The individuals of both of these breeds act in concert, and in the words of a writer on the DOG in the *Library of Entertaining Knowledge*, "Devote themselves to the dangerous task of searching for those unhappy persons who may have been overtaken by the sudden storm, and would perish but for their charitable succour. The extraordinary sagacity of these dogs often enables them to rescue the traveller from destruction. When benumbed with cold, weary in the search for a lost track, his senses yielding to the stupifying influence of frost, which betrays the exhausted sufferer into a deep sleep, the unhappy man sinks upon the ground, and the snow drift covers him from human sight. It is then that the keen scent and the exquisite docility of these admirable dogs are called into action. Though the perishing man lie ten or even twenty feet beneath the snow, the delicacy of smell with which they can trace him offers a chance of escape. They scratch away the snow with their feet; they set up a continued hoarse and solemn bark, which brings the monks and labourers of the convent to their assistance. To provide for the chance that the dogs, without human help, may succeed in discovering the unfortunate traveller, one of them has a flask of spirits round his neck, to which the fainting man may apply for support, and another has a cloak to cover him. These wonderful exertions are often successful; and even where they fail of restoring him who has perished, the dogs discover the body, so that it may be secured for the recognition of their friends; and such is the effect of temperature, that the dead features generally preserve their firmness for the space of two years. One of these noble creatures was decorated with a medal, in commemoration of his having saved the lives of twenty-two persons, who, but for his sagacity, must have perished. Many travellers who have crossed the passage of St. Bernard since the peace, have seen this dog, and have heard, around the blazing fire of the monks, the story of his extraordinary career. He died about the year 1816 in an attempt to convey a poor traveller to his anxious family. The Piedmontese courier arrived at St. Bernard in a very stormy season, labouring to make his way to the little village of St. Pierre, in the valley beneath the mountain, where his wife and children dwelt. It was in vain that the monks attempted to check his resolutions to reach his family. They at last gave him two guides, each of whom was accompanied by a dog, of which one was the remarkable creature whose services had been so valuable to mankind. Descending from the convent, they were in an instant overwhelmed by two avalanches; and the same common destruction awaited the family of the poor courier, who were toiling up the mountain in the hope to obtain some news of their expected friend. They all perished. A story is told of one of these dogs, who having found a child unhurt, whose mother had been destroyed by an avalanche, induced the poor boy to mount upon his back, and thus carried him to the gate of the convent." (Vol. i. p. 69.)

1413. *The smooth variety of the Alpine dogs*, which is more of the Molossian breed, is well represented in an engraving before the public, taken from a portrait by Mr. Edwin Landseer, of one which, at a year old, was six feet, eight inches in length from the nose to the end of the tail, and two feet, seven inches in height at the shoulders, at which time he must have had some inches to grow. We saw, some years ago, two of these dogs, in size nearly equal to this, and of the usual colour, which is a tawny, between red and yellow. It may be observed that the Alpine spaniel, the Newfoundland dog, the setter, and the terrier, are omitted in the synopsis of M. F. Cuvier, but they are placed in the second group by several other distinguished naturalists.

1414. *The hound* (*Canis sagax* Linn.) in all its varieties, will occupy our full attention anon; the pointer (*C. avicularis* Linn.), see *Shooting*, the terrier (*C. terrarius* Linn.) will be described with hounds as an adjunct to the pack. The turnspit (*C. fam. vertagus*) of doubtful origin, as any intelligent dog may be broken to the purpose. In former times, when our meat was roasted by means of a wheel of a size approaching to that of a small water wheel, the breed of dogs by which it was turned, and which appeared of a sturdy terrier-like kind, with short and frequently crooked legs, was preserved with tolerable purity; and the writer well remembers being sent to hunt up a truant one for his grandfather's kitchen, at St. David's in Wales, the wary animal always making a hasty exit the moment the cook took down the spit. In some remote parts of France and Germany a few turnspits are still employed. Captain Brown gives the following amusing anecdote of these dogs: — "Dr. Arnaud d'Antilli, one day talking with the Duke de Laincourt upon the new philosophy of M. Descartes, maintained that beasts were mere machines; that they had no sort of reason to direct them; and that, when they cried or made a noise, it was only one of the wheels of the clock, or machine, that made it. The duke, who was of a different opinion, replied, 'I had in my kitchen two turnspits, which took their turns regularly every other day to get into the wheel; one of them, not liking his employment, hid himself on the day he should have wrought, so that his companion was forced to mount the wheel in his stead; but, crying and wagging his tail, he made a sign for those in attendance to follow him. He immediately conducted them to a garret, where he dislodged the idle dog and killed him immediately.'"

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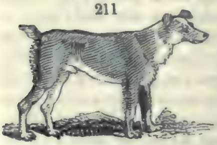

SHEPHERD'S DOG.

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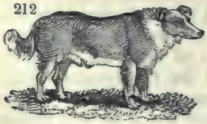

COLLY OF SCOTLAND.

1415. *The shepherd's dog* (*C. fam. domesticus* Linn. *fig.* 211.). Notwithstanding the great variations in size met with in the pasture or shepherd's dog in different countries of the globe (for he is probably the most extensively diffused of the race), yet he every where preserves some personal characteristics, which mark his adherence to the original type in a greater degree than in any other breed over which man has so arbitrarily exercised his dominion. One of these characters is his quantity of covering, which is invariably great, particularly about the neck. In temperate climates his coat is often long and shaggy; in cold ones it is coarse, and crisped or waved in minute curls; in arid regions his hair, although usually long and shaggy, becomes very fine. In Britain it is remarkable that we have resemblances of all these varieties, as witnessed in the large drover's dog, which attends the beast markets; of which dog it may be observed, that it retains a perfect originality of form and character: larger, and usually of a stronger build than the sheep dog, it nevertheless preserves the same stamp universally. We have likewise the sagacious colly of Scotland (*fig.* 212.) a dog deservedly prized, though much smaller than either the English sheep dog, or drover's cattle dog. The ears are never wholly pendent in any of the race; but in the British varieties, and many others also, they are half erected, or *half pricked*, as it is called. The colour is also very generally grey, more or less dark. The natural tail of the British breeds is bushy, somewhat pendent, and recurved, such as is seen in the colly; but in England a custom has so long prevailed, of cutting off the stern, that many of these dogs are now actually born with less than half a tail; which serves to show that even the bony structure, in other instances the most permanent of the whole, bends to circumstances, arbitrarily imposed, and continued with regularity. The visage of the shepherd's dog is more or less pointed; in the colly it is much so; but is least so in the large drover's dog: this latter is likewise remarkable for seldom trotting or walking; but, on the contrary, he *paces* either fast or slow: the whole race have the additamentary toe, or *dewclaw*, of the sportsman. From the colly, of little more than twelve inches in height, to the Apennine of nearly three feet, one common character pervades the whole group—that of fidelity, indefatigable industry, and intelligence, with a deportment singularly grave throughout the race. The origin of this dog is difficult to be traced, particularly from the sources pointed out by the naturalists of the last century: yet if we direct our attention closely to the subject, we shall detect a very near resemblance between him and some of those specimens derived from Australia and high northern latitudes; but which, it may be observed, differ among themselves. The dog used to prevent the destructive attack of wolves on the reindeer, and which drives them to the fold, being, we are told, not the same with that used about the Makenzie river. (See *Library of Entertaining Knowledge*, vol. i. p. 49.)

1416. *The wolf-dog* (*C. fam. pomeranus* Linn.). The Irish greyhound was the wolf-dog of Ireland, as the Scottish greyhound was probably used against the wolves of Caledonia, as its descendants are now employed in deer stalking. Thus a large dog of the mastiff greyhound breed is a wolf-dog every where; and ancient history teems with anecdotes of their strength and dauntless courage in the pursuit of this powerful foe. The true boarhound, on the contrary, was more of the mastiff build, and consequently was not quite so fleet, but proportionally stronger. In our endeavours to trace these dogs, it must strike both the naturalist and the sportsman, that infinite discrepancy occurs in the description of them as handed down to us from early times. Occasionally each dog was employed on the business of the other, and then assumed a name corresponding to his occupation, however it might differ from his real character. The true breeds also must have often become intermixed, when the half-bred progeny were probably named, after the caprice of the owner, either wolf-dog, staghound, boarhound, gazehound, &c.

Subsect. 3. *Third Group—Dogues.*

1417. *Anatomical characters*:—"The muzzle more or less shortened; the skull high; the frontal sinuses considerable; the condyle of the lower jaw extending above the line of the upper cheek teeth. The cranium is smaller in this group than in the two previous, owing to the formation of the head."

1418. *The bull-dog* (*C. Molossus* Linn.). Before we enter on any further description of this dog, we must premise, as regards the pictured representation of it (*fig.* 213.), that although sufficiently characteristic, and therefore likely to please some of our readers, yet it was not *designed* by ourselves, but in our absence was drawn and engraved as here seen. Pendent, either from the nose or lip of the bull, this ferocious dog cannot be said to be either out of *character* or out of *place*; but had our previous instructions been attended to, admirably as the subject is treated, we should have preferred a milder scene. Linnæus appears to have erred much in naming this variety *Molossus*, as the Molossian dog was antecedent to the existence of the bull-dog, which we consider as an artificial variety; which, if not of modern origin, is at least much posterior to the *Molossus*. Buffon also committed a gross anachronism, when he made the bull-dog the parent of the mastiff. Much of the obscurity which attends the origin of the bull-dog, has arisen from confounding him with the ancient accounts of other pugnacious dogs, particularly he has been so confounded with the mastiff. The true bull-dog of the moderns was altogether unknown to the ancients; and the ferocity evinced by other breeds, as the dhole, Molossian and mastiff, may have occasioned translators, who many of them could not distinguish a bull-dog from a cur, to translate the names of these *pugnaces* into that of bull-dog, whose tenacity, daring, and powers, best corresponded with the courage and determination of the ancient *pugnaces*. The bull-dog, without doubt, is an artificial animal and of spurious origin: such a dog might be immediately derived from a stunted specimen of the mastiff; and the contortion of the limbs, with the extension of the under jaw of the bull-dog, would favour the suspicion of a ricketty origin. The late Sydenham Edwards was of opinion, that the bull-dog was a cross between the mastiff and the pug-dog; and there is little doubt, but that from such powerful specimens of the Dutch pug, or, as it is often called, the small mastiff, as we ourselves have seen in Holland, much of the form of the bull-dog might be raised. Such a conclusion, however, would beget a question of difficult solution — From what source is the pug himself derived?

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BULL-DOG.

1419. *The mastiff* (*C. Anglicus* Linn.) is the dogue of Buffon, who, as already observed, considers, and in our opinion erroneously considers, it an offset from the bull-dog. It is represented by the *pugnaces* in the *Dogs of the Ancients*, *fig.* 76. p. 110. British cultivation has, however, so enlarged his proportions, that he is seen there rather as the original than the derivative, or cultivated scion, such as we view him in the noble mastiff of our country. The English mastiff is a straight limbed dog; his lips are characteristically pendulous in a much greater degree than those of the bull-dog; he is never underhung, and seldom has dewclaws, which are so common to some breeds of the bull-dog. His tail also is longer, thicker, and less tapered, and seldom carried erect; and it is an inherent property in the bull-dog to degenerate by exportation. The mastiff, on the contrary, owns a more general descent, as is evinced by his capability of a wide geographical distribution. Wherever he is met with, he presents nearly a similar outline and the same qualities, whether it be in the Alps, in Poland, Sweden, Italy, Spain, or the Levant. As he extends into warmer countries, however, he becomes, in common with other animals, rather more slender; thus the mastiffs of Cuba, that have been brought here, approach the old Spanish pointer in figure.

1420. *The remaining varieties of the dog* we shall despatch with a simple enumeration, as not interesting to the sportsman. These are the pugdog, Iceland dog, little Danish dog, shock dog, Barbary dog, and some few others less defined.

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HEAD OF BLOODHOUND.

CHAP. III.

THE VARIETIES OF BRITISH HOUNDS.

1421, 1422. *The origin of the various kinds of British hounds* is so obscure, that it is not possible to trace it in a satisfactory manner. The perfection which the breeding of hounds of all kinds has reached in this country, is well known; and it is a peculiarity worthy of remark, that all our best breeds are found to degenerate when taken abroad.

Sect. 1. *Bloodhound, Sleuthhound, and Talbot.*

1423. *There can scarcely be said* to be any specific separation between these three classes, but we shall notice them severally.

1424. *The bloodhound of the olden breed* was a dog something taller than our full-sized foxhound, and withal stronger in his build (*fig.* 215.). His colour was a reddish brown, here and there shaded with darker tintings. His muzzle and jaws were wide, his ears deep and pendulous, and he altogether exhibited a frame in which great strength and some speed were united. This dog, without doubt, was originally used in the pursuit of large animals, as the bear, wild boar, and also against the stag at force: and as his scenting power is acute in the extreme, his strength great, and his determination invincible, so he must have been a valuable sporting agent; but when hunting began to assume a different character, and the pursuit was made after beasts of rapid flight, then a different variety of hound was cultivated from this stock, as the staghound, foxhound, harrier, &c. &c.

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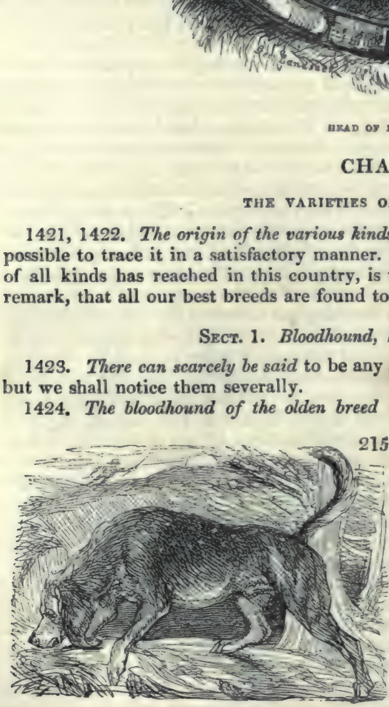

BLOODHOUND

1425. *Its extraordinary powers of smell,* with its hardihood and courage, were applied likewise to the purposes of tracking and capturing human persons. We are, however, not of opinion that the dogs which were used in tracing the Indians of Cuba were the same with the bloodhound here alluded to. The dogs of South America were undoubtedly introduced into the country by Columbus from Spain, and if we mistake not, the Cuban dogs were of such a make and shape as would be produced between the mastiff and pointer, both of which breeds were common to Spain. The British bloodhound is more of an indigenous nature, originally cultivated from a mixture of old races of *sagaces* and *celeres*, or sagacious and swift-footed; whereas the Cuban dogs were, in all probability, derived from an intermixture between the *pugnaces*, or dogs of war, and *celeres*.

1426. *The exquisite scenting power of the bloodhound* is exemplified in innumerable anecdotes, which might be quoted, if our space permitted. But that there are circumstances in which even their great olfactory powers may be baffled, at the very moment of apparent success, will be proved from the following authentic story, which we have selected as the subject of the annexed illustration. In one of the midland counties, a keeper had leagued himself with a poacher, for the nefarious practices of his craft. Night after night they had pursued their murderous warfare, clearing the best covers, till the suspicion of the owner was at last aroused, and he resolved at all risks to discover the delinquents. For this purpose he got his bloodhounds in readiness, and one night, soon after the "Arcades ambo" had commenced operations, he sallied forth with his bloodhounds, and all the force he could collect, in the direction whence the flashes from the gun were visible. The keeper and his friend were at first completely taken aback; but they instantly took to their heels, and made for a field at some distance. While they were endeavouring, with heads inclined, to mark the progress of their pursuers, the deep and well-known cry of the bloodhounds smote the ears of the keeper. "By heaven," he exclaimed, "the hounds are after us! Come along instantly!" They immediately plunged into the depths of the wood, threaded all its intricacies, and reached the other side in safety. At a short distance from this point, there was a large fish-pond, the margin of which they had no sooner reached, than, pausing to take breath, they heard the awfully deep note of the hounds that were making their way through the wood which they had just left. Not a moment was to be lost. The cry of the hounds was deeper and nearer. "They are coming, — follow me!" said the wily and desperate keeper. He then walked cautiously into the water at a known point, closely followed by the poacher, wading till the water reached their necks; and there they stood as mute as a fish. The ripple that found its way to the shore was never curled with a more fearful import. The hounds, faithful to the scent, came up to the very spot where the worthies

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BLOODHOUND AT FAULT.

had entered the water. Both dogs tracked the whole margin of the pond several times, and invariably stopped at the point which they had at first reached. But the scent was completely lost, and the hounds were finally called off, — doubtless to the great delight of the half-drowned keeper and poacher.

1427. *The sleuthhound derives its name* from its readiness in tracing the sleuth, slot, or track, of the deer. Gratius, who wrote before the Christian era, and Strabo, who flourished somewhat later, notices the importation of dogs of this kind from Britain into Gaul as common, in consequence of their excellence. Oppian's celebrated *golden* verses are loud in the praise of the *Agassæos*, as a breed having exquisite powers of scent and determined courage. These dogs, with trifling modifications, long continued to be cultivated for hunting the stag, the bear, the wolf, and the wild boar. Nor were their uses confined to those chasings; but, in common with their fellow the bloodhound, their exquisite powers of scent were put into requisition to trace human marauders and blood-stained culprits, from whence they gained the name of bloodhound in England, while they retained their appellation of sleuthhound in Scotland. This breed seems, by intermixture, to have settled definitely into the talbot, or true hound type. The females of the talbots were termed braches, which, we are informed in the *Gentleman's Recreation*, is a mannerly name for all hound bitches, as the rache was that of the male hound dog.

1428. *The talbot* (*C. sagax* Linn.) is supposed to be the original stock from whence all the varieties of the scent hunting hounds are derived. His own descent is, however, not so certain, although we have ventured to hold out the probability, that he is only a modified and lessened type of the bloodhound of early times. Few genuine specimens of the talbot now remain: we ourselves remember to have seen two only. These dogs were remarkable for their great size and strength, the depth of the chest, and the length of the ears, "that swept the morning dew." In days of yore they appear to have been mostly light coloured; but, probably from intermixture, in later years they were seen darkly pied with tan markings over the eyes. When we regard the breadth of the talbot's head we need not wonder at his olfactory powers, which, as we have elsewhere shown, are in proportion to the extent of the nasal membrane, throughout the whole of which the olfactory or smelling nerves are ramified. This consideration likewise serves to prevent our surprise, that the greyhound should have wholly ceased to run by scent; and also shows why the foxhound of the present day may be somewhat less gifted in this qualification than the hound of olden times. It remains, therefore, to state our conviction, that the staghound or foxhound, the harrier, the small harrier or beagle, and the otterhound, are but cultivated modifications of the talbot, whose effigy is tolerably preserved in the few remaining specimens of the old southern hound. These varieties all own the common property of degenerating when removed from the temperate parts of Europe, to which they are indigenous, and consequently may be considered as canine patricians

Subsect. 1. *The Staghound and Buckhound.*

1429. *The staghound* (*fig.* 217.) and our largest foxhounds are identical species, and should the lovers of stag hunting seek to elevate the staghound to the rank of a distinct variety, they must fail; for, if he be not a foxhound, he must be an out-and-out mongrel, the foxhound himself being far from an original breed. We have already traced the descent of this hound from the talbot, and have also hinted at the various intermixtures which have tended to give the pre-eminent strength, speed, and determination, which mark him when either the stag or fox is in view His ancestor, the bloodhound, in olden times was also equal to the chase of the stag, for what he wanted in speed he made up in patience of pursuit; but when our forests became dismantled, and our country rideable, a speedier breed of dog was required; and the various crossings and improvements at length produced what, when very tall, we call the staghound, or, when somewhat lower, the foxhound, to be hereafter more fully treated on. We opine that the zealous fox hunter will plead the perfect specialty of the foxhound; but there is a host of facts to support our assertion. Our exemplification of the general character of the foxhound is, we hope, tolerably correct. The staghound is not often rounded like the foxhound, for he seldom entangles his ears in bushes and briars, consequently the ears are not so liable to become violently cankered; but as the extreme pendulous tip is still apt to meet with puncture and irritation from briars, hot

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STAGHOUND.

food, &c. &c., so, in many kennels, this portion suffers some slight decurtation, as seen in our cut. It should do so in all hounds.

1430. *Buckhounds are usually dogs of the stag or foxhound stamp;* sometimes they are a smaller variety of staghounds. There is, however, a breed of a yellow pie, which are considered as the genuine buckhounds of poetic fame. These are somewhat of the old southern hound stamp, a little refined, and like them are deep-toned. Fallow deer are sometimes hunted with harriers; but by the professed buck-hunter all dogs are thought out of place in this chase but the breed we have noticed.

Subsect. 2. *The Harrier.*

1431. *The harrier* (*fig.* 218.) is the next remove after the stag or foxhound from the talbot. There are three prominent varieties of the harrier, as, the old southern hound, the modern harrier, and the beagle. Subordinate divisions occur, and a cross breed is used in hunting the otter. Our exemplifications of the harrier in the above cut are by no means intended for those of one of the high-bred fashionables of the day — a truly dwarf foxhound. These, on the contrary, are portraits of veritable harriers, and of the best harrier blood; for we have seldom seen a dwarf foxhound that would stoop steadily to hare scent. The best harrier packs are formed from such parents as have themselves never been stooped to any other game than the hare: such will seldom disappoint the hunter's hopes by running riot in pursuit of any vermin taint, be it fox or otherwise.

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HARRIERS.

1432. *The old southern hound* (see *fig.* 205. p. 384.), so called to distinguish him from a lighter offset from the talbot common to the northern countries, was formerly strong and large, with a monstrous head, overhanging chaps, full in the throat, and dew lapped. This dog is now rarely met with; but a somewhat lengthened type is occasionally seen, and they still preserve the general characters. In colour the southern hound is mottled, pied, or liver coloured, and sometimes nearly black, but in such cases the tintings are elegantly relieved with tan markings. Markham thus describes this dog in his time: — "The head large, the nostrils extended, and the ears so pendulous as, to use a country phrase, 'almost to meet and tie.' The upper lip hangs very considerably over the under jaw. 'His fillets, broad and thick, enabling him to gather up his legs quickly and without pain; his huckle bones round and hidden, showing he will not tire; thighs round and hams straight; tail long and *rush* grown, or big at the setting on, and tapering; the hair under his belly hard and wiry, a proof of hardiness; his legs large, bony, and lean; foot round, high knuckled, and well clawed, with a hard dry sole. The general composition of his body so just and even, that no level may distinguish whether his fore or hinder part be the higher. Lastly, this hound has the most powerful scent, and delights most in blood, with a natural inclination to hunt dry foot." (*Scott's Field Sports*, p. 124.)

1433. *A pure white hound* was in great estimation by some of the older sportsmen, not only for its beauty, but because these dogs were considered most excellent scenters. This preference for pure white hounds is not, however, in accordance with our own observations on these dogs generally, for experience has shown that the lighter the colour the more tender are the skin and feet. Until within thirty or forty years, the heavy deep-flewed southern hound was to be met with in several inclosed and very deep earthed counties. As irrigation drained the lands, and cultivation improved the soil, and enabled the sportsman to follow the chase on horseback, a lighter breed was employed. But even within a very few years, the Weald of Sussex was hunted by these slow hounds, whose bass music raised the echo around, and made the welkin ring. The want of speed in this dog is admirably compensated for by his unerring nose and his determined perseverance, which thus makes the trial between the pursuers and the pursued on an equality, and also enables the followers to become witnesses of every stratagem of the hare, and every hit of the dogs. The general *rush* to the head, which would delight the modern hare hunter, would have distanced the olden one, even had he been mounted on the stately palfrey, or the domestic pad.

1434. *The old Sussex blue mottled harriers*, which formed perhaps the first step in the fining of the original stock, are now nearly extinct, and only to be met with in the weald of that county, some heavy parts of Kent, and a few other vicinities.

1435. *The modern harrier is little more than a dwarf foxhound.* In him no chitterlings grace the neck, but all is clean and closely trimmed by breeding. The head is fine, but not too sharp; the ear-flaps thin; the nostrils open; and the deep chest embraced by shoulders broad but light, and well thrown back. The belly is light, and the strong straight back is finished off with a well furnished stern. The fore-legs should be quite straight, clean, bony, and terminated by a round ball-like foot. The hind limbs should be angular, and the thighs powerful. It is evident, however, that it is in an open country only that hounds of this kind are admissible; there is sufficient music in their tongues; and if they do not pack so well as the more heavy breed, they do not potter ten minutes on a plain scent, but, on the contrary, neither let the grass grow under their feet, nor allow puss to play many tricks. She must run and continue her foiling, or otherwise change her ground; in which case, when in the open, she is run into. Sir John Dashwood King, of West Wycombe, Buckinghamshire, has the credit of having done much towards producing the present improved harrier, now universally spread from his stock. His model pack, one of the most celebrated ever formed, did not exceed eighteen inches in height, and consequently showed the more sport, as being not an overmatch for their game. The parent stock of this well-known pack was a foxhound from the Duke of Grafton's kennel, called Tyrant, whose blood, form, and character were strikingly apparent throughout; and so great was its celebrity, that it fetched the highest price ever known to be given for a pack of harriers, namely, 700 guineas, by Lord Soudes, of Rockingham Castle, Northamptonshire.

1436. *The size and form of the harrier, however,* like those of the foxhound, should be adapted to the nature of the country hunted over. His qualities also should harmonise with the particular method in which he is expected to kill his game, be it by the early rush or the steady hold on the scent. There are slow hounds so excellently nosed, that one alone has followed a hare unceasingly for hours; but we suppose that most sportsmen of the present day would rather prefer never to see a run again than to be doomed so to hunt; for hounds of all kinds now in use, must "go the pace," and consequently must be shaped accordingly, and also be in such condition as to make that pace familiar and easy to them. What figure would a pack of the heavy southern hounds of the Dicker or Weald of Sussex cut in pursuit of a true *down* or *wold* hare? They would fail in getting *up* for want of breeding, and in getting nimbly down for want of *speed*.

1437. *Hunters of the hare,* like all other pursuers of game, have distinct tastes. One, therefore, may be found who wishes to pit his own exertions, and that of his dogs, fairly against the craftiness of the hare; such, therefore, breed their dogs strong and heavy in the head, but excellently gifted with scenting powers. In the hunting of hounds of this kind, their masters will seldom lift, cheer, or help them; on the contrary, it is their delight to see them deliberately make out the scent under every disadvantage, and kill their hare at the end of three or four hours, even preferring to do this sooner than to hurry them, such is their taste. Another would rather stay at home than thus "potter on his work," or "dream over his sport," as he would probably call it. With him even a hare hunt must be "short, sharp, and decisive." Consequently harriers, to please all fancies, must present the extremes of slow and quick hunting faculties; though most will allow that it is prudent to breed them sufficiently fine to carry a good head gallantly over a country, but not so much so as to render them disinclined to *stoop* as well as lower bred dogs.

1438. *Of the extremes of high breeding in harriers,* Lord Maitland's celebrated Lothian pack is an instance. An ingenious writer in the *Old Sporting Magazine* calls them draft foxhounds. This is contradicted by Dashwood, who, however, allows that a proportion of them consist of undersized and unentered pure bred foxhound bitches. The remainder, though all of a high stamp, have a cross of harrier blood in them. An excellence in this pack, so frequently wanting in "even good harrier packs," consists in a general uniformity in style and character, as well as in height, which ranges in this pack between twenty and twenty-one inches. Mention is made in the *Hunting Directory*, p. 299., of a pack of harriers of this kind; and we have ourselves often hunted with a similar one near Manuden, in Essex, before which a hare seldom lived more than forty minutes, and very often not so long.

1439. *An equally effective variety of hound*, and somewhat more generally useful, is the improved breed used on the downs of Sussex. The Brighton harriers, and those known by the name of the Brookside pack, are of this stamp. In height, length, and bone, they nearly equal medium-sized foxhounds, from which they could *hardly be distinguished* were it not for their ears and chaps, which bear a faint resemblance to those of their primogenitors, the old southern hound. We say "hardly to be distinguished," because a critical eye will always distinguish the foxhound from the harrier.

1440. *Of packs of undersized harriers*, some prominent instances may be brought forward. Mr. Harding used to be seen in the field with about seventeen couple, which were not more than 16 or 17 inches high. These "mountain harriers," so called, hunted the high open grounds about Dorchester, and were admirable instances of adaptation of form and size to the nature of the ground hunted over. In point of breeding, in symmetry of shape, and richness of colour, these *drawing-room harriers*, as they have been called, were the pride of the neighbourhood, and the admiration of all chance beholders.

1441. *The rough wire-haired hound*, well hung with thick powerful quarters, having well laid in shoulders, without being too fleshy, is now seldom seen as a regular pack; though specimens are occasionally met with.

Subsect. 3. *The Beagle.*

1442. *The precise history of the beagle is involved in some obscurity*, and, as well observed by the learned commentator on Arrian, even "the etymology of the English term beagle is not of easy solution. Skinner derives it from the French *bugler, mugire;* and Menage thinks, as the hounds were sent from Britain into Gaul, the name may be of British origin. A second derivation is proposed by the former philologist, founded on the diminutive stature of the dogs — *cani piccoli*, Ital. *canes minores.* May not a third possible source of the name be found in the barbarous root *biglu, viyilia, excubiæ*, from the Greek *βιγλα, a Latino, vigilia?* The watchful tricks of some of our terrier beagles in a rabbit warren, and Oppian's graphic sketch of the Αγασσευς, his wiles, &c. favour the notion."

1443. *There are even now several varieties of beagles* (*fig.* 219.), but formerly there appear to have been several more, from the deep flewed diminutive type of the old southern hound to the fleet and elegant foxhound beagle, to which we may add the pigmy breed, called lapdog beagles. Beagles were formerly distinguished by the rough, and the smooth. The rough wire haired, or terrier beagle, is now seldom met with, though it was a hardy and altogether a vermin loving breed, and very strongly formed. We were once travelling on horseback along a turnpike road, when our ears were struck with a screeching, and the unmusical yaffle of a pack of full sized rough beagles, and we shall not easily forget how gallantly they rushed through both hedges, and how true to the line they carried the scent across the next field. We were told, on inquiry, that 300 guineas had been refused for this pack.

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BEAGLE AND PUPS.

1444. *The North Country beagle.* The Country Squire, in his *Observations on Hunting*, says of this dog, "he is nimble and vigorous; he pursues the hare with impetuosity; gives her no time to double; and, if the scent lies high, will easily run down two brace before dinner. Against this practice Somerville expresses his disapprobation in the following animated lines: —

> 'A different hound for every different chase
> Select with judgment, nor the timorous hare
> O'ermatch'd destroy, but leave that vile offence
> To the mean, murderous, coursing crew, intent
> On blood and spoil.'

But it is only in good scenting days these speedy hounds show themselves, for without the constant discipline of the whip, and perpetually hunting them down, it is impossible to make a good pack of them." (*Daniel's Rural Sports*, vol. i. p. 440.)

1445. *Smooth haired beagles have numerous admirers*, and the late Colonel Thornton paid very great attention to the breed, and consequently he possessed them of almost every variety; his minute breed of lapdog beagles obtained very great admiration. His late majesty, George the Fourth, also, when Prince of Wales, used to hunt with beagle packs of larger and smaller dimensions. With his well selected pack of dwarf beagles we have ourselves often hunted on the Brighton downs. Colonel Thornton thus expresses himself relative to them: "My partiality for every thing referring to the chase naturally led me to inspect the Prince of Wales's dog kennels, but more particularly his dwarf beagles, which were originally of the same breed as my own. Here I must observe," he continues, "that the beagle, in point of height, should be regulated by the country he is to hunt in; but he ought, at any rate, to be very slow. In a dry country, free from walls, the beagle cannot be too slow; but when there are such impediments, he should be larger, to prevent being stopped by fences; as also when the waters are out, the larger he is, the better calculated will he be for swimming. In the country where my pack hunt, the turf is like velvet, a circumstance much in their favour. The prince's beagles are of a much larger growth than mine, and mixed; but it is a rule with me in the breed of all animals, to get the most stuff in the least room. Another circumstance tending to strengthen my opinion is, that the lower they are, their noses must be closer, and their scent necessarily stronger; but in point of speed they all go too fast. I have seen several valuable horses distressed, and some very high-bred ones killed, in following these insignificant looking animals. Many gentlemen, unacquainted with the powers of the beagle, have imagined they could overtake them on a pony; but the speed of these hounds is regulated by the head they carry when they sheet well. Horses are much more distressed in an open, hilly country, where nothing intervenes to impede the hounds, than they are in an inclosed one, as every fence, more or less, impedes the velocity of the hound. Foxhounds indeed fly the fences, but then the game turning up one fence and down another, obliges the hounds to cast back; and the frequency of these casts affords a decided advantage in favour of the game, as well as ease to the horses; but when a burst is made, and there is no impediment on the plain, game, hounds, and horses, are done up together." "The late Colonel Hardy once had a pack of beagles amounting to ten or twelve couples, and so diminutive in size, that they were always carried to and from the sporting field in a large pair of panniers slung across a horse. This curious pack was lost to the colonel in rather a singular manner. It was kept in a barn, which was one night broken open, when all the hounds and panniers were stolen, and, notwithstanding the most diligent search, no trace of either could ever be discovered." (*Brown's Anecdotes of Dogs*, p. 397.)

1446. *It is said that the larger varieties of the fox beagle*, so called from being crossed with dwarf foxhounds, have been used in the chase of the hare; but it is evident that, although both harriers and fox beagles are equal to the pursuit and capture of a fox, we think they are both out of place here, and can only be adopted from a singularity of taste. Even hare hunting with the diminutive breeds of beagles is more troublesome than sportive; they tail much, and are as wild as hawks. In our opinion they scream most unmusically, and in wet weather appear to be in danger of drowning in every ditch. The larger breeds, however, run at a tremendous rate, and are not easily brought to a stand still, and it is very seldom that a hare can get away from them either by speed or stratagem. Of this kind are the beagles of Lord Molyneux at Coxteth, in Lancashire, and several other contemporaneous packs in different counties of England. Mr. Johnson very justly objects not only to the use of what is called the fox beagle in fox hunting, but even to the name, observing, that the beagle can make but a sorry foxhound, being himself neither more nor less than a dwarf talbot — a dog with a large head, long ears, short legs, and rotund body, consequently ill calculated for racing down a gallant fox.

1447. *Of beagles generally the Country Squire observes*, "That both rough and smooth have their admirers; their tongues are musical (we can hardly say as much), and they go faster than the southern hounds, but tail much. They run so close to the ground, as to enjoy the scent better than taller dogs, especially when the atmosphere lies low. In an inclosed country," continues this author, "they do best, as they are good at trailing or default, and for hedgerows; but they require a clever huntsman, for out of eighty couple in the field during a winter's sport, he observed not four couple that could be depended on. Of the two sorts he prefers the wire haired, as having good shoulders, and being well filleted. Smooth haired beagles are commonly deep hung, thick lipped, with large nostrils, but often so soft and bad quartered, as to be shoulder shook and crippled the first season they hunt; crooked legs, like the Bath turnspit, are frequently seen among them; after two hours' running many of them are disabled, and the huntsman may proceed to hunt the hare himself, for he will never receive any assistance from the greater part of them; their form and shape sufficiently denote them not designed for hard exercise." On our experience, and on our own dispassionate view of the matter, we cannot recommend the beagle pack to any steady sportsman, whose delight is to pit two different animals against each other, and then to observe the workings of instinct and the gleams of rationality in both the pursuers and the pursued, each to foil the other. The steady keen nosed harrier, lighter or heavier, according with the country to be hunted over, will best suit his purpose. Acting under these views, his huntings will yield him solid and rational amusement, unmingled with disappointments and vexation, arising from bad-scenting hounds very unsteady to their purpose, and being foiled at last.

Subsect. 4. *The Foxhound.*

1448. *The modern foxhound* is a cultivated variety gained from the original hunting dogs of Great Britain. Our illustration (*fig.* 220.) is that of Merkin, a very celebrated female foxhound. When we consider that fair fox hunting is a sport comparatively of late origin, we are surprised at the perfection this dog has reached, and the modifications he has undergone. We are aware that he was first a strong built animal, with a coarse and almost wire haired coat; but as the passion for accelerated movements in all our field sports became imperative, he at length assumed his present figure, which it must be allowed is one in which rapidity of motion and powers of endurance are combined. Merkin was an admirable exemplification of of these qualities co-existent in one frame. Half prostrate as she is seen, it is yet impossible not to be struck with her individual points and her general symmetry. Her extraordinary performances will be noticed anon, in proof of our account.

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MERKIN AND PUPS.

1449. *The head of the foxhound* should by no means follow the rage for contraction, which has overtaken all our sporting dogs, otherwise we shall, as has happened to the greyhound, increase his speed at the expense of his scenting qualities. Indeed, we know it to be the opinion of some excellent judges as well as admirers of modern foxhounds, that the scenting powers of the olden hounds were superior to those of the modern kennels: the throaty hound is now seldom seen, yet Mr. Smith observes that such have usually good noses. We have in our coursing department noticed the effect which attenuation of the frontal sinuses has had on these powers in the greyhound, and we would refer to that to strengthen our cautions to avoid narrowing the brain cap in the foxhound also. Nevertheless the head of the foxhound should be neither short nor thick, but it should with proper length have sufficient breadth of nose, and an open but not greatly elevated forehead, graced with open nostrils, and a pair of ears fine in substance, and if not rounded, of a moderate length. The neck likewise should present both length and fineness; nor should the vestige of a dewlap be seen. The shoulders, like those of the race-horse, ought to incline obliquely towards the back, and without being coarse they should be muscular. The fore-arm is particularly required to be strong, and of such length as to extend the knee low down in the limb, exactly after the fashion, and on the principles we have advocated in our description of the formation of the race-horse. When the fore-legs are either crooked, or there is too much length from the knee to the ground, before, and from the hock to the ground, behind, great speed is not to be expected of that hound. The haunches or gaskins, as the huntsman calls them, should be expansive as well as firm to the feel; and the hock is required to be broad as well as low placed. Reject a flat sided hound as you would a flat sided racer, both of them being soon winded, and draft every dog that stands over at the knee. The feet also must be well balled, well clawed, and well knit up, *i. e.* the toes must be firm and resisting against any trifling attempt to straighten them; a loose clawed dog soon gets foot sore. The fore quarters of a foxhound can hardly be too deep, nor his carcass too much trussed up, provided his back be straight and his loins sufficiently broad; without which advantages he can neither be speedy nor lasting. It is not necessary that his croup be so square as that of the pointer, which would confine his strides; but it must not be let down with the rotundity of the Newfoundland dog, or cart-horse. The stern should be slightly curved upwards, and its under surface be fringed with a moderate line of hair: for ourselves we cannot think a greyhound tenuity of stern a recommendation in the foxhound, whose tail there are few but must admire when carried in a graceful arching over his back on all occasions, save and except in the run, when "heads up and sterns down" is the cry! We have said that the feet should be compact and well clawed, but we omitted to state that much of this form in hounds will depend on their being, as whelps, allowed freedom of range while at their walks, without which liberty no hound ever arrives at perfection in growth, and certainly such a one will not present round cat-like feet. Somerville's description of a perfect hound is as follows: —

. . . . "See there, with countenance blythe
And with a courtly grin, the fawning hound
Salutes thee cow'ring, his wide op'ning nose
Upwards he curls, and his large sloe-black eyes
Melt in soft blandishments, and humble joy;
His glossy skin, or yellow-pied, or blue,
In lights or shades by nature's pencil drawn,
Reflects the various tints; his ears and legs
Fleckt here and there in gay enamel'd pride
Rival the speckled pard; his rush-grown tail
O'er his broad back bends in an ample arch;
On shoulders clean, upright and firm he stands;
His round cat foot, straight hams, and wide-spread thighs,
And his low dropping chest, confess his speed,
His strength, his wind, or on the steepy hill,
Or far extended plain; in every part,
So well proportion'd, that the nicer skill
Of Phidias himself can't blame thy choice
Of such compose thy pack."

1450. *The colour of the foxhound is with some a great object:* not so with Mr. Beckford, who observes, that "a good dog, like a good horse, cannot be of a bad colour." Of the pied, the yellow marked is not a favourite with many, although we have seen many good noses and equally hardy constitutions so marked: witness the descendants of the Beaufort "Justice." Black, brown, dun, and fallow, are not often met with as whole colours, but are usually either pied (blended or mixed) and now and then ticked or spotted with white, which greatly relieves the shade. Such varieties being endless, serve to distinguish each dog at considerable distances, which is often important as the huntsman well knows. Black, relieved with tan markings, is handsome, but is more common among rough hounds, as otter dogs, than among the smooth.

1451. *The original colour of the hound*, it is said, was a pale yellow or fallow, which also appears to have been a prevailing tint among the *canes venatici* of the ancients. We read of fallow hunting dogs in many of our oldest writers, and such, if it were not the original tint, was certainly a very common one. In several old pictures on sporting subjects, particularly in such as relate to stag and wild boar hunting, fallow dogs prevail. It is, however, but just to observe, that we have seen many others, particularly such as represented boar hunting, in which dark tints predominated in the hounds engaged. Such is the case with those of Snyders in the Gallery of the Louvre, if we mistake not.

1452. *The height, figure, and general bulk, of the foxhound*, should be adapted to the nature of the country over which he is to hunt, the tall and heavy hound not being formed for going over hilly and precipitous countries, and even in an inclosed country his bulk prevents his *meusing* so well as one of lesser size. It is the high-bred dog, of moderate height and substance, that is best calculated to find wind and durability for ascents and descents. Again, bone, substance, and height, are required for heavy deep soils, particularly where the fences also are strong and high: but whatever your fancy be as to the height of your dogs, have them uniform in measure; for, as the eye is to be pleased as well as the other senses, and as many of the best sportsmen, we might almost say all such as have a spice of philosophy and general observation about them, take very great pleasure in an intercourse with their hounds out of work as well as in work, and derive almost as much pleasure from the kennel as the field, with all such it is reasonable to suppose, that uniformity in height will be a desideratum of importance; indeed, we are happy to say that with many crack fox hunters a sizeable pack is a *sine qua non*, although some few others have shown an indifference to it, among whom Hugo Meynell, Esq. stands as an example. This eminent sportsman has been heard to declare, that the smaller the hound the less likely he was to be out of order; yet he not only bred his dogs beyond a medium height generally, but was likewise totally indifferent to their matching in any way, except that all must be good in the field. Without doubt his example had its weight with others, of which Mr. Asheton Smith, who succeeded to the country Mr. Meynell figured over, is an instance. With these great breeders, however, it was a rule to dispense with no other desirable property in their hounds than uniformity of size; and although we believe that both these gentlemen were personally fond of their dogs, and spent much of their time in the kennel, yet we cannot admire their want of taste in this particular. The celebrated Mr. Ward was partial to tall hounds; some of his dogs we are told were twenty-six inches high, and we believe twenty-five inches was a fair average of the whole. The late Mr. Chute, a celebrated and old pack master, on the contrary, patronised small hounds only; and we presume the motto, *multum in parvo*, which appeared over his kennel door, was his excuse. The Duke of Cleveland also had a small pack, the individuals of which ranged from a little below twenty-one to twenty-two inches at the utmost: the noble duke, however, at the same time, had a large pack also. Mr. Villebois' hounds were always large. We must therefore conclude that, with some consideration towards the nature of the country, an *ad libitum* range of height, from twenty-one to twenty-two inches for bitches, and from twenty-three to twenty-four inches for dogs, might satisfy every purpose. Mr. Smith, in his *Diary of a Huntsman*, considers twenty-four inches a fair average height. We ourselves, however, are so favourable to uniformity in height, that we should, in the formation of a pack of foxhounds, endeavour to force nature so as to breed our bitches as near as possible to the height of our dogs. Fancy may diminish or extend these limits; the true genus of the fox and stag-hound is not dependent on size: for instance, foxhounds might be bred till they were as small as harriers, but they would still be foxhounds; it is, however, a matter of taste; and were there not something like an imperative necessity to breed the hounds to the nature of the country to be hunted over, we should recommend the sportsman to please himself.

1453. *The qualities of foxhounds* are very important considerations to the lovers of fox hunting. It has been quaintly but justly said, that the good foxhound never tells a lie, *i. e.* that he never gives tongue falsely. Vain babbling he must altogether eschew; he must also be speedy, but at the same time cautious not to overrun the scent; on the contrary, he must *throw up* as soon as that fails him. This is the time for the good hound to show his judgment, for he is now left very much to his own resources; and ample they are in some old stagers. While the nose of the experienced dog is still ready to catch the faintest vermin odour, the ears are equally open to accustomed sounds. The halloos of the huntsman or the tones of his horn are fully understood and promptly obeyed; and, when confident of the quality of the scent, his rush to the head, and his evident determination to carry it on, mark his mettle and do credit to his blood.

1454. *That the qualities of even good hounds vary*, is a truism known to every fox hunter, and it cannot but form a subject of interest to the reflecting mind. Breed as you will, train as you may, and treat as you may, some will prove good for nothing. Are the remainder, though collectively good, nay very good, at all alike? Very far from it. Thus Mr. Hawkes observes on Mr. Meynell's hounds, that "Some had the remarkable faculty of finding a fox, which they would do almost invariably, notwithstanding twenty or thirty couple were out in the same cover; some had the propensity to hunt the doubles and short turns; some were inclined to be hard runners; some had a remarkable faculty of hunting the drag of a fox, which they would do very late in the day; and sometimes the hardest runners were the best hunters: and fortunate was the year when such excellences prevailed."

1455. *The speed of the foxhound* was never critically ascertained until the days of Mr. Meynell, when some remarkable trials were made between different individuals of the improved breeds of this gentleman and those of Mr. Barry. The particulars have been given to the public through various sources; but as they may not yet be familiar to every one, we introduce them here as they appear in Scott's *Sportsman's Repository* from the pen of Mr. John Lawrence: — "Mr. Meynell matched two foxhounds, Richmond, and a bitch whose name is not given, against Mr. Barry's two hounds, Bluecap and Wanton; to run over the Beacon Course at Newmarket, for 500 guineas. Mr. Barry's hounds were trained on Tiptree Heath, Essex, where annual races for small prizes have been held immemorially. The trainer, long known to us, was Will Crane, long famed in that quarter as a huntsman, who kept Rivenhall Inn. His method with the hounds was to run a fox drag of eight or ten miles three times a week upon the turf, during two months, feeding them upon oatmeal and milk, and sheeps' trotters. We were informed by several sportsmen who saw the dogs before starting, that they appeared in admirable condition. Mr. Meynell's hounds were fed, whilst in training, entirely upon legs of mutton, and were also in high condition, and the odds were seven to four upon them at starting, chiefly from the proprietor's high sporting character. The match was run on the 30th of September, by laying the accustomed drag from the rubbing-house at Newmarket, town end, to the rubbing-house at the starting-post of the Beacon Course, the four hounds being immediately laid on the scent. Mr. Barry's Bluecap came in first, and his Wanton, a very near second, the four miles being run by these hounds in a few seconds above eight minutes; much about the time in which an ordinary country plate horse would run the same distance, carrying the weight of eight stone, or eight stone, seven pounds. Mr. Meynell's hound was beaten by about one hundred and twenty yards, and the bitch was in no place, not running her course through. It is in some respects true that the knowing ones were taken in by this match; nevertheless the great reputation of Will Crane as a huntsman had great weight. Threescore horsemen started with the hounds, and Cooper, Mr. Barry's huntsman, was first at the ending-post, having, no doubt unconsciously, ridden the mare which carried him, perhaps over-weighted, or under-bred, quite blind! Only twelve horses out of sixty were able to run in with the hounds; Will Crane, mounted upon the winner of a twelve stone, or king's plate horse, called Rib, being the twelfth." (P. 69.)

1456. *The speed of Merkin* (*fig.* 220. p. 407.), is thus noted by Mr. Daniel: — "A foxhound bitch, bred by Colonel Thornton, proved herself superior in speed to either Bluecap or Wanton. Merkin was challenged to run any hound of her year, *five* miles over Newmarket, giving 220 yards, for 10,000 guineas; or to give Madcap 100 yards and run the same distance for 5,000. Merkin had run a trial of four miles, and the time she performed it in was seven minutes and half a second. This bitch, of whom a portrait is given (p. 407.), was sold, in 1795, for four hogsheads of claret, and the seller to have two couples of her whelps. Madcap at two years old challenged all England for 500 guineas; Lounger, brother to Madcap, did the same at four years old; the challenge was accepted, and a bet made for 200 guineas, to run Mr. Meynell's Pillager: the parties were also allowed by Colonel Thornton to start any other hound of Mr. Meynell's, and Lounger was to beat both; but upon Lounger's being seen at Tattersal's by many of the first sportsmen, his bone and form were so capital that it was thought proper to pay forfeit." (*Rural Sports*, vol. i. p. 245.)

Subsect. 5. *The Terrier.*

1457. *The terrier forms a very valuable adjunct to the sporting list of the Caninæ*, and was until of late years found appended to most foxhound packs: but *tempora mutantur;* and as foxes are much less frequently dug for than formerly, and as it was only then that the terrier was of use, either to draw or to inform the diggers by his baying whereabouts the fox lay, so his occupation being gone, he is dispensed with by most pack-masters of the new school. There are also some active reasons, besides the passive one, of his not being wanted, why he should be left at home; a sufficient one is, that he is seldom steady from *wing*, if he is so from *foot*, and, as such, is often the cause of riot and confusion. The direct origin of the terrier, like that of many other well marked varieties of the dog, is involved in much obscurity. Some consider his antiquity questionable; while, on the other hand, it is not easy to mistake the dog so minutely described by Oppian for any other than the terrier. Buffon's synopsis classes him with the hound; nor is it at all improbable that he is thus derived; and that, by frequent intermixtures and crossings, he at length exhibits all the varieties we now meet with as to size, colour, and qualities.

1458. *Two prominent varieties of the terrier* offer themselves to sporting notice, which are the rough and the smooth (*fig.*221.) The rough variety appears to have been nurtured in Scotland, although probably both the one and the other owe their variations more to locality and accidental crosses, than to any true specialty between them. The rigours of a northern climate is favourable to a crisped and curled coat, as we see in many instances; and a temperate one exhibits the smooth coating mostly. In Scotland the terrier is much cultivated, and it is therefore there met with of various sizes, as from sixteen inches to six. A few have long hair, but the greater number have the coat rough and crisped. A mixed breed between these two is recrossed to generate our best bull terrier: and the breed so generated is handsome, useful, and very courageous; nor is it usually savage or mischievous.

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TERRIERS, ROUGH AND SMOOTH.

1459. *A large breed of English terriers* has of late sprung up, most of which are rather rough coated, but a few others are smooth. These, by being crossed with the bull-dog, have gained undaunted courage in attacking the higher order of vermin, as the badger, &c. A small variety of terrier with crooked legs is also sometimes used for hunting rabbits in cover, and are extremely useful in woods; for the rabbits, as though sensible of the want of speed in their pursuers, retreat before them so slowly as to present a ready mark for the shooter's aim. Terriers, we have already stated, were formerly very commonly used to accompany packs of foxhounds for the purpose of unearthing the fox, and, when in vogue, were in colour either black and tan, or pied with white and yellow. They were usually of a medium size; if too large, they were unfitted for penetrating the sinuosities of an earth, or creeping up a confined drain; if, on the contrary, they are too diminutive, they cannot keep pace with the hounds of the present day, nor can they bolt the fox when either earthed or lodged in a slough or drain. In some few packs, however, both large and small terriers still accompany the dogs. Breaking the ground for the purpose of blooding the hounds being, however, not so frequently practised as formerly, the necessity for these adjuncts has so much diminished, that, as already observed, many of the crack packs do not sport terriers at all; and under the views we have on the subject, they can be dispensed with.

SUBSECT. 6. *The Otterhound.*

1460. *The true otterhound is thought to be extinct.* We however profess to be somewhat sceptical on the existence of any dog deserving the appellation of a true otterhound, or one that will prefer pursuing the scent of the otter to that of all other animals. On the contrary, we would engage to form a pack of as good otterhounds as ever trod the pool, by breeding between stout harriers and rough haired terriers, provided the latter had a moderate dash of the bull breed in them to give that true indifference to punishment which all the descendants of that daring race exhibit in so extraordinary a degree. Rough-haired terriers are also found to answer the purpose of otter hunting well; but it is necessary that they should be regularly entered to the sport when young, because a very particular *stooping* is requisite to accustom otterhounds to collect a scent which lies so low as that of the animals they are to hunt. We have seen many otter packs, but we do not remember to have seen one that gave unequivocal marks of descending in any one immediate line or strain. The figure of the *otterhound* of such packs as we have met with, is exemplified in our description of *Otter Hunting*, as seen towards the close of our *Hunting Practices*, p. 543, 544.

1461. *Two or three very effective packs of what are called otterhounds* we have met with both in Northumberland and Cumberland, where we have sojourned much purposely to enjoy field sports. All these dogs performed well, but all appeared as though little attention had been paid to purity in their descent. There may be, however, otter packs with which more care has been taken to breed in a certain line of height, form, and colour. About thirteen years since an advertisement appeared, then announcing a pack of Staffordshire otter-hounds for sale, which were stated to be staunch and thoroughly trained to otter hunting. Another pack of notoriety in their performances have been mentioned as the property of Mr. Eld, of Seighford Hall; and, if we mistake not, it was from this source that the pack of Mr. Henry Peyton was derived. Mr. Peyton's dogs were stated to be so excellent as greatly to have reduced the profusion of otters in the river Cherwell.

1462. *The principal requisite in the otterhound* is a true vermin antipathy to the game he hunts, united with such hardihood as not to flinch from the severest bites the otter inflicts; which even the tough hide and the crispness of a wire haired coat cannot wholly defend the dogs from. No British animal, except the badger, bites so keenly as the otter; the hounds, therefore, used against it, should be game in every sense of the word. The packs we saw in the north, though the dogs were not well matched either in size, figure, or colour, were all wire haired, strong on the leg, fearless of the water, and of unflinching hardihood. The huntsman of one of these packs, on our observing that the severity of the otter's bite might claim an excuse for a dog's crying out, directly replied, that if he heard a dog in his pack make a screech, as he called it, he would hang him the moment he got home. We have also witnessed some dreadful punishments inflicted by the otter on the dogs, but we never remember to have heard even a squeak from one.

SECT. II. *The Breeding and Rearing of sporting Dogs.*

1463. *The sexual appetency or heat of bitches in a state of nature occurs once a year only;* but, under domestication, their constitutional habits become so altered that it recurs at uncertain intervals of six, seven, or eight months, according as confinement or high feeding may hasten, or exercise and low diet retard the feverish excitement. By taking this view of the matter the breeder may, in most cases, be able to bring his bitches into season at the time most convenient for his purpose. But let him beware that he does not attempt an unnatural forcing of nature by stimulating injections, &c. by which many valuable dogs have been lost: for even should such attempts succeed, the bitch either proves barren, or the young suffer. On the other hand, it is somewhat unnatural to debar them from breeding, and it is injurious also; for unless the consequences which ensue are counteracted by depleting means, as increased exercise, cooling and spare diet, or by physic, congestions are apt to be left in the mammæ or teats, particularly in such as are high bred, high fed, and very artificially treated.

1464. *The approach of heat in a bitch* may be foretold by her increased disposition to sport and frolic with dogs, while they, in their turn, are equally disposed to pay her every attention. By degrees the *vulva*, or *bearing*, as it is termed by sportsmen, inflames and swells; she then suffers dogs to lick her to allay the irritation, and soon submits to *coitus* or *lining.* Much vigilance is necessary on the part of the feeder of hounds, or other constant attendant on kennelled dogs, to watch these symptoms, and to separate such a bitch from the company of all dogs but her selected mate, which prevents vexatious crossing, as well as fighting among the rivals, by which valuable dogs have been killed. The youthful bitch comes first into heat between the tenth and fourteenth months, and the first warding impregnates many; but in many others, two, three, or four copulations are necessary, and with such as are very artificially treated, five, six, and seven, are often required. When it is of consequence to preserve the breed in purity of descent, it is essentially necessary to guard the bitch with the utmost vigilance, otherwise her own endeavours to seek a mate, and those of the dogs which have scented her (which they will do from very considerable distances) will assuredly frustrate the intentions of the owner, and a mongrel breed, or a regretted cross, will be the consequence.

1465. *Dogs are certainly capable of superfœtation,* that is, impregnation may take place at more than one warding, and that by different mates; and the fact was long ago admitted by naturalists and physiologists from indisputable evidence. We have ourselves, in several cases, seen whelps of the same litter which bore evident marks of different origin, and where the future disproportion in size, character, and qualities, clearly evinced that more than one male was concerned in the process.

1466. *Antecedent impressions received by a bitch have sometimes an effect on the progeny.* Superfœtation is apt to be confounded with, or its phenomena are sometimes accounted for by another process, still more curious and inexplicable, which is wholly dependent on the mother. It is where impressions being already received by her mind, previous to her sexual intercourse, remain to be conveyed to the germs within her, so as to stamp one or more of them with characteristic traits of resemblance to the dog from which the impression was taken, although of a totally different breed from the real father of the progeny. In superfœtation, on the contrary, the size, form, &c. of the additional progeny all fully betoken their origin. In these instances of sympathetic deviation, the form, size, and character of the whelps are principally maternal; but the colour is usually that of the favourite, with occasionally a few characteristic blendings of external resemblance intermixed. It would also appear that this mental impression, which we believe to be in most cases received during the heat of the bitch, always recurs at that period, and is so interwoven with the organisation even of the parent, as to become a stamp or mould for some, if not for all, of her future progeny. The existence of this curious anomaly in the reproductive or breeding system is confirmed by numerous facts on record. The following happened to ourselves: — The late Lord Rivers was famed for a breed of black and white spaniels, one of which, having more than the usual quantity of white, he presented to us. We had at the same time a pug bitch of great beauty, *i. e.* as beauty is considered among pug fanciers. The attachment of this bitch to the spaniel was singularly strong. When it became necessary to separate her, on account of her heat, from this dog, and confine her with one of her own kind, she pined excessively; and, notwithstanding her situation, it was some time before she would admit the attentions of the pugdog placed with her. At length, however, she was warded by him, impregnation followed, and at the usual period she brought forth five pug puppies, one of which was perfectly white, but rather more slender than the others, though a genuine pug. The spaniel was soon afterwards given away, but the impression remained on the pug bitch, for at two subsequent litters (which were all she had afterwards) she brought forth a white pug pup, which the fanciers know to be a very rare occurrence. It is also a curious fact, that each succeeding white puppy was less slender in form than the preceding, though all were equally white, which showed, as we have before stated, that this mental influence extends less perfectly to the individual form than to its external characters, particularly of colour. When therefore pups of completely different forms and kinds proceed from one litter, superfœtation has occurred, and not mental influence. The Rev. R. Lascelles, in his *Letters on Sporting*, p. 250. relates a case of a greyhound bitch, intrusted to the care of a servant, which whelped one perfect greyhound and six complete curs; the curs were the likeness of the dog she domesticated with in common; the single one resembled the greyhound she was taken to during her heat. There is little reason, therefore, to doubt but that the bitch had been previously lined by the cur, and the single greyhound pup was the effect of superfœtation. We notice this to show how easy a mistake between these two different causes may occur, and how they may be distinguished. We may add that we were not fortunate enough to rear either of these white pups, for one of which the late Lord Kelly offered 15 guineas when it was only three months old. A favourite setter bitch belonging to the late Dr. Hugh Smith, was prevented from breeding by a mongrel to which she took a violent fancy, the consequences of which were even more striking, for every future litter she had by an equally well bred setter, bore so strong a resemblance to the mongrel favourite, as to render it necessary to destroy the whole of the litter. (See these subjects further practically and theoretically considered under the *Reproductive System in Quadrupeds*, p. 204.; the *Breeding and Rearing of Horses*, p. 277.; and in our *Canine Pathology.*)

1467. *It is not easy to detect the pregnancy of a bitch until the fourth or fifth week after warding*, about which time the teats enlarge, the flanks fill, and the belly assumes a fulness and rotundity unnatural to it at others. Towards the seventh week the belly becomes pendulous, and the future increase is not so observable as the previous. In the last week of pregnancy, the contents of the belly seem to incline backwards, the vulva increases in size, and a slimy matter (to soften and lubricate the parts) often issues from it.

1468. *Pupping usually comes on the sixty-second, sixty-third, or, at farthest, on the sixty-fourth day.* A quarter or half an hour, and sometimes a longer time, intervenes between the the expulsion of each fœtus. We have known a solitary puppy appear on the seventieth day from the last intercourse, and that in a case where superfœtation was improbable. The number of young are erroneously limited by writers to twelve as a maximum; we have ourselves extracted sixteen from a pregnant setter bitch after death, and as many as seventeen are recorded as the produce of one birth. Mr. Beckford notices instances of fifteen and sixteen also. It is very important that neither of the parents have the mange during warding or breeding, otherwise the progeny will all have the same disease constitutionally, and consequently more obstinately than when taken by contact with others.

1469. *Canine obstetrics are not often called into action on sporting dogs*; but as fancy pets and all such bitches as are much confined and very artificially treated, as well as very high-bred ones of every kind, suffer more than others, we feel justified in offering the following remarks: — To prevent danger it is prudent that no very great disparity in size should exist between the parents, for when a small bitch is in pup by a dog much larger than herself, her parturition is always difficult, often dangerous or fatal. Sufficient exercise should also be given to every tender bitch in pup, as a great means of obviating the dangers of parturition. Whenever the symptoms of pupping have existed more than four or five hours, the bitch should be examined by means of a finger passed up the vagina, and if any portion of a pup should be found to present itself, so as to be within reach of the finger, a skein of worsted ought, if possible, to be fastened around it; and during the *throes* or *forcing pains* of the animal, it should be gently drawn away. If it cannot be reached in this way, a little longer time may be allowed; but, after all, should it not advance, a pair of forceps may be used to assist the extraction. It is a good practice to give a laxative as soon as any symptoms of pupping appear; and when delivery seems much delayed, it will be prudent, in all cases, to bathe in warm water, and to give nutriment if the labour be protracted. Should convulsive symptoms appear, give occasional doses of laudanum united with ether, and the warm bath: and we may take this occasion of observing that the patience of bitches in labour is extreme; and their distress, if not relieved, is most striking and affecting; and their looks are, at such times, particularly expressive, and apparently imploring.

1470. *Consanguineous breeding of animals, or the in-and-in system*, has already occupied our attention in the *Breeding of Horses*, p. 277.; but as in the breeding of dogs this system appears to have more general and powerful opposition than in the breeding of any other domestic animal, the subject will require some further consideration as it regards them. If this adverse opinion has arisen from the greater opportunities which the close domestication of the dog has afforded for observation, and if such observations have been strictly correct, they certainly offer strong grounds for objection to *in-and-in* dog breeding. Mr. Bakewell professed always to breed animals in general, from near relationship; and how successful he was in his system is well known. Mr. Meynell also bred most of his celebrated hounds *in-and-in*. But on this matter Sir John Sebright, in his pamphlet on *The Art of Improving the Breeds of Domestic Animals*, observes, "On speaking to Mr. Bakewell on that subject, I found that he did not attach the meaning that I do to the term *in-and-in*. He said that he frequently bred from the father and daughter, and the mother and son. This is not what I consider as breeding *in-and-in;* for the daughter is only half of the same blood as the father, and will probably partake, in a great degree, of the properties of the mother." "I have tried," says the sporting baronet, "many experiments by breeding *in-and-in* upon dogs, fowls, and pigeons: the dogs became, from strong spaniels, weak and diminutive lapdogs; the fowls became long in the legs, small in the body, and bad breeders." Sir William Clayton, in his *Treatise on Greyhounds*, is also, in some degree, unfavourable to breeding *a-kin*. He says, "If continued for some litters a manifest inferiority of size, and a deficiency of bone, will soon be visible, as well as a want of courage and bottom, though the beauty of the form, with the exception of the size, may not be diminished." Mr. Beckford is also averse to consanguineous breeding among dogs. "A very famous sportsman," he says, "has told me, that he frequently breeds from brothers and sisters. As I should be very unwilling to urge any thing in opposition to such authority, you had better try it; if it succeeds in hounds, it is more, I believe, than it usually does in other animals." It is remarkable that the ancients, although they advocated the system of *in-and-in* breeding among all other domestic animals, yet were averse to it in the dog. In the *Geoponica*, l. xix. c. 1. we are cautioned against breeding between individuals of the same litter. Conrad Gesner on this subject observes, "Præstantissimi quidem canes in suo quique genere sunt, id est, ex unius generis parentibus prognati: verum superflua venatorum cura miscere etiam diversa genera, quæ quidem innumera sunt, adinvenit:" which may be rendered thus — "The very best dogs are bred each in their own line, or from parents of a similar kind; but an extreme care in huntsmen for improvement has led them so to mingle different breeds, as to make the varieties almost innumerable."

1471. "*Like begets like*" *is a truism*, and in no instance is it more just, nor in any more important than in dog breeding; consequently it is not easy to be too careful that the qualities and form of both parents be as perfect as possible. As no bitch is without some defect, so it should be remembered in selecting a mate for her, that the dog should not only be entirely without that particular defect, but even superabundantly furnished contrariwise. If the strain borders on the light and leggy, do not perpetuate the defect, but choose a dog not coarse but strong and well trussed. If the bitch incline to be *flew* (tender) fix on a dog for her that is singularly hardy. The qualities also must be attended to in breeding, for they run as much in the blood as the form does. Is the bitch, though exquisite in figure, yet wanting in mettle, give her a mate with as much dash and determination of the right kind as possible. If, on the contrary, though well nosed, she is given to *skirting*, to *run riot*, to *babble*, or to any other hurtful propensities, cross it, with superexcellence, in the opposite quality in the dog selected for her. *Skirting*, particularly, remove in the breed by letting the skirter be mated with a thorough *line hunting* hound. It is by judicious crossing that the pack is rendered complete. Let masters of hounds be very careful likewise in intrusting their favourite bitches to the care of the attendants of other kennels. There is infinite risk in this, because there is not only more than an equal chance of deception where the stallion, be it foxhound, greyhound, or pointer, is of great celebrity, that such dog is already fully engaged; in which case another dog may be fraudulently substituted, and the bitch *served* by one that, instead of mending the breed, may increase its defects. On this subject Colonel Cook well observes, "It is the custom to send bitches to the fashionable stallions of the day; for instance, as formerly, to the late Mr. Meynell's "Gusman;" Lord Fitzwilliam's "Hardwick;" Lord Yarborough's "Ranter;" Mr. Ward's "Charon;" the Duke of Rutland's "Topper;" the Duke of Beaufort's "Justice;" the Duke of Grafton's "Regent;" Lord Lonsdale's "Ruler;". Mr. Smith's "Champion;" Mr. Munster's "Collier;" Lord Middleton's "Vaulter," &c.; but as it generally happens that your brood bitches go to heat much about the same time, it is therefore not very probable that *one* stallion hound can ward many bitches besides those of the owner; nor is it reasonable to expect in the height of the season, that the dog hounds can be left at home to ward bitches from other kennels. I would suggest, in order to be more certain of your breed, that you send your bitch to a well bred dog, brother, if possible, to the stallion hound; and to prevent any mistake, order your servant to see the bitch warded." (*Observations on Fox Hunting*, p. 10.)

1472. *It is decidedly wrong in dog breeding to depend wholly on the size:* it is, in our opinion, at least equally necessary to pay strict attention to the breed, form, and qualities, of the bitch, for such is the aptitude in some races to receive the maternal stamp, that be the father what he may, the progeny will resemble the mother principally. This fact is, we believe, very generally known among sportsmen, and has been observed on by some of the best sporting writers. Colonel Cook strongly advocates the principle, and has introduced in his work many marked instances which occurred in his own kennel, in proof of the power of maternal influence. Markham also, in his *Country Contentments*, informs us that the opinion of the best sportsmen of his time was that the dam should be selected with the greatest attention to shape, pedigree, and aptitudes in the field. He even lays more stress on the qualities of the mother than on those of the sire. Xenophon, in the sixth chapter of his *Cynegeticus*, notices the care and contrivances of the ancients to prevent promiscuous connection, that thereby they might insure the purity of the breed. Sharp spikes attached to the body clothes of the bitch at heat, was one method then in use to prevent this from taking place. Mr. Meynell, one of the most successful breeders of foxhounds, was somewhat indifferent to blood or breed in his dogs; but as he bred largely, and only kept such as sufficient trial proved worthy of packing, he might with more safety than others hold an adherence to any strain or blood as little necessary. As a general rule, however, in the reproductive system of all animals, "like will produce like;" and as experience teaches us, that at least the qualities of the more domesticated animals pass in succession also, we must not lightly be led away from perpetuating a good stock. Mr. Beckford on this subject says, "Consider the size, shape, colour, constitution, and natural disposition of the dog you breed from, as well as the fineness of his nose, his stoutness, and method of hunting. On no account breed from one that is not stout, that is, not tender nosed, or that is a skirter." Somerville, in versification, had long before laid down similar instructions: —

"Observe with care his shape, sort, colour, size:
Nor will sagacious huntsmen less regard
His inward habits: the vain babbler shun,
Ever loquacious, ever in the wrong:
His foolish offspring shall offend thy ears
With false alarms, and loud impertinence.
Nor less the shifting cur avoid, that breaks
Illusive from the pack: to the next hedge
Devious he strays; there ev'ry meuse he tries,
If haply then he cross the streaming scent,
Away he flies, vain-glorious, and exults
As if the pack supreme, and in his speed
And strength unrivall'd. Lo! cast far behind
His vex'd associates pant, and lab'ring strain
To climb the steep ascent. Soon as they reach
Th' insulting boaster, his false courage fails,
Behind he lags, doom'd to the fatal noose,
His master's hate, and scorn of all the field,
What can from such be hop'd but a base brood
Of coward curs, a frantic, vagrant race?"

1473. *When a perfect strain is hit upon preserve it*, and although few sportsmen of the present day, it is probable, would continue strict *in-and-in* breeding, yet the same blood may be adhered to with the utmost propriety. Lord Yarborough's foxhounds are said to have been bred in one continued line of descent since the year 1700, and have been hunted in succession also by a series of huntsmen descended from one family from generation to generation. This is as it should be, and is a proof that in bipeds, as well as in quadrupeds, like begets like. Lord Fitzwilliam's hounds also have an equal claim to a long hereditary descent. The Hertfordshire pack likewise may have changed owners, but the strain of the dogs can be carried back, according to Colonel Cook, to 1727. These instances, however, must not beget an obstinate adherence to an individual breed, nor exclude the chance of amendment from any valuable cross; but, at the same time, such cross should be limited, and the result should be very accurately noted ere it is repeated. Mr. Beckford's opinion on this subject is, that it is the judicious cross that makes the pack complete; the faults and imperfections in one breed, he thinks, being to be rectified from another; and if this be properly attended to, "I see no reason," he says, "why the breeding of hounds may not improve, till improvement can go no further. If you find a cross hit, pursue it, but never put an old dog to an old bitch; be careful also that they be healthy which you do breed from, or you are not likely to have a healthy offspring. Should a favourite dog skirt a little, put him to a thorough line hunting bitch, and such a cross may succeed;" which he, however, qualifies thus, "My objection to the breeding from such a hound is, that as skirting is what most foxhounds acquire from practice, it had better not be made natural to them." The packs of Mr. Warde, the late Lord Lonsdale, Mr. Osbaldeston, and Mr. Musters, we are informed by Mr. Apperley, were also almost exclusively bred from their own stock. Breeding should not be allowed until the bitch has attained her third year; some will not permit it until she has hunted her two seasons, as then her prominent qualities, be they good or bad, will have shown themselves.

1474. *When the time of pupping is at hand, allow the bitch to make her own couch.* Dirturb her also as little as possible, except to observe that parturition goes on favourably, as it ordinarily does with hounds; but as this is not invariably the case, some looking after is not amiss. When she has pupped, feed her in proportion to the number of young, and in proportion to the calls they appear to make on her: a young bitch with her first litter should be very well fed.

1475. *The proper treatment of the whelps* also requires that they be fed as soon as they will take nourishment; which, if they are numerous, will save the mother and forward their own growth. Allow them air and room for exercise; and mark them in any way agreeable to fancy, so that each litter should be known by the register kept of these matters. When a month old, their dewclaws may be taken off; and such breeders as stern their dogs may at the same time take off the smallest piece of the tip of the tail.

1476. *Rounding the ears of hounds* is now generally practised, but the portion removed differs in size according to fancy; it should, however, be sufficient to prevent the attack of external canker, for which the operation was first introduced. This being premised, will account for some singularities which might otherwise be attributed to caprice; thus foxhounds, when rounded, usually have a larger portion of the ear curtailed than other hounds, they being most exposed to have the pendulous flap of the ear excoriated by the bushes and briars they pass through than others. The harrier, although somewhat exposed also to excoriation of his earflaps in his search for the hare, is not equally so with the foxhound; and therefore in most packs the harrier suffers a slighter decurtation, and we occasionally meet hare packs carrying full ears throughout; but it is not a prudent measure. The staghound is seldom subjected to more rounding than the small indented portion at the bottom of the flap. In a few it is carried rather deeper than this, and some staghounds are allowed to retain the whole. The beagle is not often rounded, although this diminutive harrier is the most exposed to the exciting causes of excoriation, and consequently to canker. *Rounding irons*, as they are called, of the fashion of the cropping irons for the ears of horses (now happily exploded), are used in many kennels, and they certainly facilitate the process; but unless they be used with much judgment, they, by the pressure they make, give a tendency to inflammation and ulceration of the wounded part. We have, however, seen some in our travels that did not do this; but we cannot recollect where, neither can we find the memorandum made thereon.

Sect. III. *The Kennel, and Kennel Management of Hounds.*

1477. *If the stable and stable management* are important considerations to the turf man, the kennel and the general treatment of dogs must be equally so to the field man. The lodging, feeding, training, and disciplining of the latter, is even more artificial and diversified, when viewed in all its bearings, than the lodging, feeding, training, and match work of the former.

Subsect. 1. *The Kennel.*

1478. *In the building of a dog kennel the first consideration should be the means of the owner;* the second, the extent of his hunting establishment; and the third, the healthiness of its situation. As regards the means of the owner, it may be built as costly as the Duke of Richmond's, which was erected at an expense of 10,000*l.*; or as extensive as that of the Duke of Bedford's, which is four hundred and fifty feet in length; or, on the contrary, one simply commodious may be formed from the outhouses, or barns, &c. around the farm homestead of a gentleman's estate. Colonel Cook observes, that the convenient kennel at Puckeridge, Herts, and that also of the Hampshire hunt, cost each but a few hundred pounds.

1479. *A description of a few of the principal kennels of the kingdom* will perhaps throw some light on the matter, prefacing our sketch by observing, that visiting and closely examining a few of those most celebrated, and particularly of such as exhibit the latest improvements, is strongly recommended to any one contemplating such an erection. In the tours of Mr. Apperley, and other contributors to the *Old* and *New Sporting Magazines*, some excellent hints may be gained on the subject; and we strongly recommend a reference to these sources, as well also for the kennel discipline as the forming of the kennel itself.

1480. *The kennel of the Duke of Richmond* was literally built by the duke himself. He was his own architect, he accumulated and formed his own materials, even to the digging of his flints, burning his own lime and bricks, and framing the wood work in his own workshops. The site of the kennel, which we have visited, is within the park, and in view of the house, from which it presents a very handsome frontage, and is capable of accommodating two full packs. Its dimensions are as follows: — the length is 148 feet; the depth, 30; the height, from the crown of the arches that support it, 18 feet on the sides; in the centre, 28 feet. The materials are flints, finished at all the angles by a light grey brick, like the Lymington white stock. The distribution of the building is into five kennels; two of them, 36 by 15; three more, 30 by 15; two feeding-rooms, 28 by 15. In each there are openings at the top for cold air, and stoves to warm the air when too cold. There are supplies of water, and drains into a stank, as it is called, a depth below, full of rain-water. From the surface of this rain-water to the rise of the arch is eleven feet; so that inconvenience from smell there is none; and the whole at any time can be cleared off by drains, to more dependent depths, dung-pits, &c.; and thus, as an aid to farming, it is not altogether useless. Round the whole building is a pavement five feet wide, airing-yards, places for breeding, &c. &c. making part of each wing. For the huntsman and for the whipper-in, there is a parlour, a kitchen, and a sleeping-room, for each.

1481. *The Woburn Abbey kennel,* belonging to the Duke of Bedford, was long considered the most complete in the kingdom. Its length, we believe to have been four hundred and five feet. In the centre stands the boiling-house, with feeding-houses adjoining, and a granary behind: on the left are divisions for litter, straw, eleven apartments for bitches and puppies, with yards to each; eleven ditto for bitches in pup, with yards also; and a large division for bitches at heat. On the right of the centre are apartments for two kennel keepers; two long lodging-rooms for the hunting hounds, with flues running along the walls, spacious yards to each, furnished with a fountain in the centre for the hounds to drink at, and water-cocks issuing near the pavement to cleanse it: adjoining to these, are seven hospitals for sick hounds, with yards to each. In the front is a large pond, which supplies the fountains and different cocks in the several yards within. Behind is a large airing-ground, flesh-house, &c.; and the huntsman's house, which is a handsome building, adjoins. Its extent enables it to accommodate between sixty and seventy couple of working hounds. The celebrated Mr. Assheton Smith, of Tedworth House, in Hampshire, built a capital kennel there about thirty years ago, since when many masters have indulged in such magnificent erections that the old standards are a good deal thrown into the shade. The general characteristics of modern kennels are either great plainness and utility, or great magnificence; the plain, for all practical purposes, being as good as the grand ones.

1482. *The Quorndon kennel,* so famous in sporting history, is unpretending in appearance, but of ample size and possessed of every requisite convenience. It can conveniently lodge a hundred couple of hounds, and is furnished with two spacious grass-courts. Within the building also are several circular lodging-rooms, having each a central stage for the hounds to sleep on, by which means all damp from the walls is avoided. The boiling-house, spare lodges, &c. &c. are likewise all equally well placed and convenient. The dwelling of the owner is near at hand, by which the attention of the master is ever ready, to the great advantage of the whole concern. As a safeguard in this well arranged establishment, we believe the kennel man sleeps within hearing of the hounds, by which means he can at once quell any quarrel by the sound of his rate, or crack of his whip. In some kennels a bell with a wire leading from the lodging-room of the feeder to the lodging-rooms of the dogs, is pulled on these occasions, and has the same effect. Without this caution hounds sometimes get killed; and when not so far injured, are often lamed for life.

1483. *Billesdon kennel for the Quorndon hounds.* — Despite the convenience and interest attaching to Quorn, Leicestershire has seen more new kennels built within the last thirty years than any county in England, noticeable among which, as being planned by Mr. Smith, formerly master of the Craven hounds, were those at Billesdon, erected in 1838, during the short mastership of the late Lord Suffield. Anticipating a long career, his Lordship took the site for twenty years, at the liberal rent of 100*l.* a year, agreeing to leave behind him all the erections, some of which are now converted into cottages, and the rest are doing more legitimate duty as hunting stables. Still the plan, as established in the annexed cut, may be useful, and is worth preserving, as the ideas of a master of hounds of what is requisite and convenient for a hunting establishment. Mr. Smith, we may add, is the author of the "Diary of a Huntsman," "Life of a Fox," &c., in which many clever and original ideas will be found, the two works making an agreeable addition to the more venerable productions of Mr. Beckford and Col. Cook.

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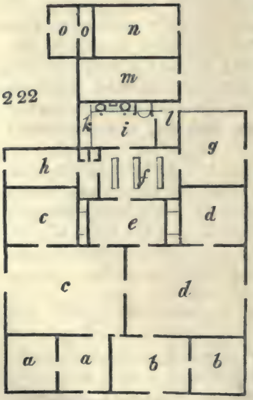

BILLESDON NEW KENNEL.

1484. *The Billesdon new kennel may be thus described:* — *a a* presents a lodging-room for young hounds, 12 feet by 20; attached to it is an inclosed grass-yard; *b b* is a lodging-room for the hunting pack, 16 feet by 20, and a paved court 18 feet by 26; *c c* is the principal lodging-room, 16 feet by 20, and its paved court 30 feet by 34; *d d*, a similar lodging-room and court; *e*, a covered court used by the hounds before feeding, with a water-cistern attached; *f*, feeding-room, 16 feet by 19; *g*, straw court, for use after feeding, 22 feet by 24; *h*, hospital, with lodging-rooms and court; *i*, boiling house, 15 feet by 20; *k*, cooler 3 feet wide; *l*, for coals; *m*, for meal; *n*, for straw; *o o*, apartment for bitches in heat, 6 feet by 15, and court 9 by 15.

1485. *Exemplifications of these several apartments* are distinctly laid down in Mr. Smith's work, and further practical remarks on the use of each of them are appended, forming of themselves almost a complete picture of all the important particulars connected with the *kennel management of hounds*, which we cannot too strongly recommend to the notice of every lover of hunting, but to the master of hounds more particularly.

1486. *The healthiness of the situation on which any kennel is to be built* is likewise an important consideration. It is essential that it be both dry and airy; and it should be warm also. A damp kennel produces rheumatism in dogs, which shows itself sometimes by weakness in the loins, but more frequently by a lameness in the shoulders, known under the term of *kennel lameness*. His late majesty's kennel, from being under the hill near Ascot race-course, was so damp as to occasion this complaint to a distressing degree in the major part of the staghound pack; and the evil was only removed by raising the floors on arches, since which alteration the lameness has in a great measure disappeared. A kennel may be artificially warmed by stoves, as it is at Goodwood and elsewhere; but it is better done by means of pipes filled with hot water, which, passing through the lodging-rooms, diffuse an equable heat without deteriorating the air. It has occasioned us much surprise, that Colonel Cook should doubt the utility of warmth occasionally applied to the kennel lodging-rooms. It is our own opinion, as well as that of many respected masters of hounds, that the reverse of this is the case; indeed, innumerable testimonials might be adduced in proof of the direct benefit which artificial warmth yields to the tired and draggled hound after a severe run. Not only does it prevent disease, but also tends to bring the dogs sooner round after severe fatigue than any other treatment whatever, by preventing any stiffening of the limbs. We constantly admitted our pointers and our greyhounds into the kitchen, when we had worked either the one or the other severely; by which means their limbs remained unstiffened, and their fatigue vanished. Mr. Beckford also, to our surprise, appears to slight artificial warmth, as though it were intended for no other purpose than to dry the floors; thus he says, "where the feeder is a good one, a mop will render a stove unnecessary." To us this appears remarkable, as elsewhere this gentleman observes, "warmth is in the greatest degree necessary to hounds after work."

1487. *Cleanliness is also an essential in every kennel*, and it should pervade all its departments, for wherever the saline exhalations from the urinary and cutaneous secretions are suffered to accumulate by neglect of washing and ventilation, the skin of the dogs becomes foul, and whenever this is the case, the scent of such dogs suffers. Our forefathers were well aware of this fact. De Langley's instructions to the kennel-man in the *Mayster of the Game*, are to this purpose: — "I wyll hym lerne that onys in the day he voyde the kenel and make it al clene, and remeve her strawe, and putt agayn ffressh new strawe, a greet dele and ryght thikke; and ther as he leith it the houndes shall lye, and the place there as thei shuld lye, shuld be made of tree a foot hie fro the erthe, and than the strawe shuld be leide upon, bicause that the moystness of the erthe shuld not make hym morfound, ne engender other siknesse bi the which thei myght be the wors for huntyng, &c." "And before," he says, "The skabbe cometh to hym whan thei abiden in her kenel to longe and gon not on huntyng, or ellis her litter and couche is unclene kept, or ellis the strawe is not remevid and hur water not fresh; and shortly the hound is unclene, I hold, and evil kept or long waterles, havyn comonly this mamewe." (Ch. xix. fol. 70.; ch. xiii. fol. 56.) Every apartment where hounds are kept should be free from foul effluvium, for if a sick ward of a crowded hospital can be kept as sweet as a drawing-room, which we know to be the case, surely the lodging-rooms of healthy dogs can be kept so too. The coppers should be daily cleansed with as much care as the stewpans of the master's kitchen; the feeding-troughs, likewise the ladles, forks, knives, &c. must all undergo a cleansing, drying, and putting away into their proper places. *Mem.* — That the meal be always taken from its bin with a clean and dry scoop or shovel. The huntsman, for the due observance of these several particulars, should daily inspect the conduct of the boiler and feeder, and the master should keep a sharp look out to the conduct of both. In Lord Elcho's, now the Earl of Wemyss', hunting establishment, an apparatus obliges every dog to pass through water a foot and a half deep, which completely washes the dirt from the hound, and also detects wounds and thorns, &c. &c. It is said that the Duke of Cleveland's dogs even waded through warm broth. In Lord Wemyss' Belford kennel, which was constructed out of an old malting, the hounds pass through a running stream.

1488. "*Two kennels*," Mr. Beckford thinks, "are absolutely necessary to the well-being of hounds. When there is but one, it is seldom sweet; and when cleaned out, the hounds, particularly in winter, suffer both whilst it is cleaning, and as long as it remains wet afterwards. The floor of each lodging-room should be bricked, and sloped on both sides to run to the centre, with a gutter left to carry off the water, that when they are washed, they may be soon dry." It is the fault of brick flooring, however, that it wears away, and leaves sinkings which retain water: the urine also penetrating the interstices between each brick, makes it difficult to keep such a floor free from saline exhalations; and where such exist, foul coats and mange are at hand. Stone slabs form the best pavement, and any objection against them on the score of their being colder than brick is futile, as they are not slept upon. Some kennels are paved with a kind of tile. Dashwood instances that of the Brighton harriers, and we are led to suppose by his account, that this method of flooring is very common in Yorkshire. Dutch paving bricks laid edgeways, make strong and durable, but not altogether pleasant, flooring: however, let the kennel floor be made of what material it will, it is imperative that it be well drained, and that by means of a sunken drain, which should not be carried across but around the outside of the room, debouching at one corner into a cesspool furnished with a stink trap to prevent urinary effluvium, than which nothing is more apt to produce mange and other foulnesses; and we again repeat, that the foul and mangy dog never possesses his scenting powers in perfection. The bituminous *asphalt* lately introduced, we should consider as peculiarly adapted for the flooring of kennels. Mr. Beckford recommends that every kennel should have " three doors, two in front and one in the back; the last to have a little lattice window in it, with a wooden shutter, which is constantly to be kept closed when the hounds are in, except in summer, when it should be left open all day. This door answers two very necessary purposes, it gives an opportunity of carrying out the straw when the lodging-room is cleaned, and as it is opposite to the window, will be a means to let in a thorough current of air, which will greatly contribute to the keeping of it sweet and wholesome. The other doors will be of use in drying the room when the hounds are out, and as one is to be kept shut, and the other hooked back (allowing just room for a dog to pass), they are not liable to any objection. The great window in the centre should have a folding shutter; half, or the whole, of which may be shut at night according to the weather; and your kennels, by that means, may be kept warm or cool just as you please to have them. The two great lodging-rooms are exactly alike, and as each has a court belonging to it, are distinct kennels, and are at the opposite ends of the building, in the centre of which is the boiling-house and feeding-yard; and on each side a lesser kennel, either for hounds that are drafted off, hounds that are sick or lame, or for any other purposes as occasion may require: at the back of which, as they are but half the depth of the two great kennels, are places for coals, &c. for the use of the kennel: there is also a small building in the rear for hot bitches. The floors of the inner courts, like those of the lodging-rooms, are bricked and sloped to run to the centre, and a channel of water, brought in by a leaden pipe, runs through the middle of them; and in the centre of each court is a well, large enough to dip a bucket to clean the kennels: this must be faced with stone, or it will be often out of repair. In the feeding-yard you must have a wooden cover. The benches, which must be open to let the urine through, should have hinges and hooks in the wall, that they may fold up for the greater convenience of washing out the kennel; and they should be made as low as possible, that a tired hound may have no difficulty in jumping up." In summer the benches should be slept on as they are, the naked boards affording less harbour for fleas: in winter, on the contrary, they should be well littered down with wheat straw, but by no means strew sulphur over the straw; the effluvium from it being so powerful and so long retained, that it will injure the scenting powers of the dogs. Indeed, we conceive that a pack of hounds might truly be said to follow a streaming scent when, as running behind each other, the hindmost have the sulphurous exhalations of the brimstone from those ahead, which must operate to the injury, if not the destruction, of the animal exudations of the game pursued. If any thing is sprinkled on the straw, let it be resin in very fine powder, which fleas are very averse to, and which does not at all injure the scenting powers of the dogs. In summer be it particularly remembered, that wormwood sets fleas to flight.

1489. *A kennel infirmary should be a part of every hunting establishment,* but it ought to be detached from all the other buildings, that it may receive (without danger of infecting others) all distempered and mangy dogs, as well as such as have been bitten by suspicious dogs, or such as by showing any peculiarity of manner indicative of madness, require to be kept at a distance from the rest.

1490. *Both a grass and a gravel court* are useful and necessary additions to a kennel, into one or other of which the hounds should be turned while the lodging-rooms are cleaning, drying, and airing. In cold weather the spare lodging-rooms may be employed for this purpose; indeed, it would be well that the living apartments could be changed every day, by which means a purified atmosphere would be more certainly secured for the dogs. Condition in hounds cannot be kept up without a scentless lodging; foul coats follow on breathing putrid effluvia, mange succeeds, and the nose then fails to do its office.

1491. *One or more of the kennel attendants* should always be within hearing and call of the hounds both night and day. As already hinted at, the bed of one attendant at least should immediately adjoin the lodging-rooms of the hounds, from whence his *rate* can be heard to check quarrelling. It is advisable also that a bell should be so hung, that being pulled from the bed's head of the attendant, it may ring directly over the dogs, which will distract their attention from their quarrel. Whatever is done should be done promptly; a little will then stop the growl from proceeding to a battle. Instances are not wanting of a quarrel ending by the vanquished dog being eaten by the others. Capper, a favourite hound of Mr. Chute, was thus devoured by his companions; and what was worse, an attendant shared his fate, in all probability because he had entered the kennel without calling to the dogs.

1492. *The court-yard of Mr. Beckford's kennel* had a brook running through it, and was inclosed by a high pale, part of which, to the height of about four feet, was close, the other open: the interstices were about two inches wide. A small hayrick in the grass-yard will keep the hounds clean and fine in their coats; and the shade of it will be useful to them in summer. Ticks are best destroyed by whitewashing the walls of the kennel. Behind the kennel there should be a pit ready to receive the dung, and a gallows for the flesh to hang on. The gallows should have a thatched roof, and a circular board at the posts of it, to prevent vermin from climbing up.

1493. *A thatched kennel has the advantage of keeping up an equable temperature.* But a thatched roof encourages rats, which, particularly at night, are apt to keep up an injurious watchfulness in the dogs. The damages from lightning are something in the scale also, and the more as it is not entirely done away with by a conductor, as we have seen.

Subsect. 2. *Feeding of Dogs.*

1494. *A good feeder is a very necessary appendage to a kennel of hounds.* He should, as Mr. Beckford has observed, be active and humane, obedient to orders, and particularly cleanly in all that appertains to the food of the dogs and to the state of his kennel. When the pack is out, the feeder's labours are called into active exercise. Previously to their return he should render every part of the kennel as warm, clean, and comfortable as possible; and it is then also that he must prepare the food.

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THE FEEDER.

1495. *In the feeding of dogs* a knowledge of anatomy and physiology is of great use. Dogs are so formed as to be capable of receiving nutriment from either animal or vegetable matters. To this end the dog is furnished with sharp cutting teeth for tearing flesh, and he has also tolerably broad surfaces on other teeth, capable of grinding farinaceous substances: his stomach and intestines likewise hold a middle place between those of the carnivorous and herbivorous tribes. It is true that he is by nature predacious, and intended to live on other animals: yet his organs fit him, when necessary, for receiving nutriment from vegetable matter also, and we likewise see that he voluntarily seeks it, to prevent probably that tendency to putridity which too great a quantity of animal food begets.

1496. *A mixture both of animal and vegetable matter* may therefore be considered as the most proper food for dogs, and that which best agrees with the analogies of their nature; but the proportions of each are best determined by the exertions of the body: for as animal food affords most nutriment, so when the bodily exertions are great, as those of hounds, greyhounds, pointers, &c. in their working season, then a large proportion of animal matter is the best food. On the contrary, when the season of rest arrives, milder and less nutritious food (but such as is equally bulky) is required, consequently, at this period, a larger proportion of vegetable matter is equal to their wants. An entire vegetable diet, it must however be observed, does not always agree with dogs which have been long flesh fed; neither is a long continuation of any one article of food so wholesome as some occasional change. In a state of nature a variety of food recurs almost daily; and although we have greatly altered the dog by domestication, his wants and his aptitudes will yet mainly accord with his structural peculiarities. The quantity as well as the quality of food is also to be considered, no less than constitutional peculiarities, for some require much more than others. When dogs feed together, some will eat slow, and some will devour three times the quantity in the same time which sufficed for the meal of the former, consequently, unless the feeder regulates the matter, the one may be half fed and the other gorged. Among hounds this should be particularly attended to, and the slow and light feeders should be served separately and before the others; indeed it is a prudent method in all cases to draft a few couples at a time for feeding, when any inequality in their eating can be more readily regulated; to which end, however, perfect discipline is absolutely necessary.

1497. *Perfection in kennel discipline* was never more exemplified than in the manner of feeding Mr. Meynell's hounds, of which Mr. Apperley offers the following vivid picture: —

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KENNEL DISCIPLINE.

" To see," he says, " sixty couple of hounds, animals, all hungry as tigers, standing aloof in their yard (as is the practice in some kennels), and without even hearing, much less feeling, the whip, not daring to move until the order is given to them to move. And what is the order given? why, at the words, " Come over, bitches," or " Come over, dogs," every hound of each individual sex comes forward, as the sex it belongs to may be called for, leaving those of the other sex in their places. Then the act of drawing them to the feeding troughs is an exceedingly interesting sight. Often, with the door wide open, and the savoury meat in their view, the huntsman has no use for his whip, having nothing to do but to call each hound by his name, which of course he readily answers to. The expression of countenance too, at this time, is well worthy of notice, and that of earnest solicitation, of entreaty, we might almost say of importunity, cannot be more forcibly displayed than in the face of a hungry hound awaiting his turn to be drawn. He appears absolutely to watch the lips of the huntsman, anticipating his own name." (*Encyclopædia Britannica*, art. Hunting, p. 744.)

1498. *The food of hounds should never be given to them when hot.* We naturally suppose that no wretch could be found who would give it scalding hot. It should always be allowed to cool to a perfectly temperate state before they are turned into it. Cankered ears are very common consequences of giving food before it cools; it proves particularly so to spaniels, pointers, setters, &c. And to such hounds as have been tipped only it is almost equally hurtful: and not infrequently a continuance of it will bring it on among those that have been rounded also; neither are we certain that hot food is not a parent of mange.

1499. *Of the animal substances used as food for dogs*, the entrails of the larger kinds, as those of sheep and cows, are common. Where a limited number only of dogs is kept, bullocks' and sheep's paunches boiled down, and the liquor poured over bread raspings, or ground meal of any kind, form excellent food. Small dogs eat the entrails of chickens, gained from the poulterers in large towns, with great avidity. Greaves also, first soaked in cold water, and then mixed with a thick mess of meal of any kind, form a convenient food for pointers. Greaves, mashed potatoes, and skimmed milk or butter-milk, are likewise covenient and nutritious food for dogs, kennelled in limited numbers, as pointers, spaniels, &c. Where dogs in large numbers, as packs of hounds, are flesh fed, as they should always be in the hunting season, horseflesh is generally used; but very different opinions prevail on the qualities of this food. We ourselves regard it as very nutritious, but highly stimulating, and therefore proper, and even necessary, for hounds, greyhounds, pointers, &c. &c. during their hunting seasons. But when not so employed, if given at all, the quantity should be small, and that mixed with vegetables, otherwise it encourages foulnesses, as canker, mange, &c. Mr. Beckford observes, " A horse fresh killed is an excellent meal for hounds after a very hard day; but they should not hunt till the third day after it. The bones broken are good food for poor hounds, as there is great proof in them. Sheep's trotters are very sweet food, and will be of service when horseflesh is not to be had. Bullocks' bellies may be also of some use, if you can get nothing else."

1500. *Can animal food injure the olfactory powers?* Some sportsmen are unfavourable to feeding their dogs on flesh, particularly on horseflesh, from an opinion that it is unfavourable to their powers of scent. We however consider this to be an erroneous conclusion, and we would appeal to what occurs in a state of nature for our ground of dissent. All the members of the group *Caninæ*, as wolves, dogs, and foxes, are essentially carnivorous; and, as such, actually live by the exquisite sensibility of their scenting faculties, which enables them to hunt up from their hiding-places the animals they prey on; and having so done, the same exquisite olfactory power enables them to pursue the roused animal until overtaken. Is it, therefore, at all accordant with the beneficent arrangements of nature, that the pursuit of these natural instincts should frustrate the end of their ordination? Most certainly it is not. Flesh feeding, we may rest assured, can never injure the scenting powers, except where flesh is given in quantities which bear no proportion to the exertions made. Here a superabundant quantity taken might vitiate the secretions of the body generally, in which case the mucous secretions of the nose must suffer with the rest. Thus it is that virulent mange injures the scenting powers.

1501. *Animal food therefore*, according to the dictates of nature, when given in a judicious manner, is the most nutritive food, and that which is the most adapted to sustain the sporting powers of dogs, when given either raw or cooked? Here also, we think, analogy will aid our search after truth; thus in a state of nature it is evident that dogs live entirely on raw food, and principally on raw flesh; and there is no doubt but that this best fits them for very active exercise, and endues them with most vigour and durability. The raw flesh of animals appears particularly to increase the courage and ferocity of the participators; and where these qualities are requisite, this mode of feeding will undoubtedly tend thereto, and therefore we consider that it is the best possible food for hounds. Of the varieties of animal matter, none answers the purpose so well as horseflesh. When animal substances are becoming putrid, by burying them two or three feet under ground, the putrefactive process is arrested, and the antiseptic properties of the earth tends to sweeten the meat. It is doubtful, however, whether putrid meat is so injurious to dogs as is supposed; indeed, it may be asked, is it at all so? We rather incline to the opinion that it is not; and we think facts and analogies are much in our favour; for hounds, pointers, and indeed all sporting dogs, are notoriously given to eat animal substances in the highest state of decomposition, with an appetite and avidity that show it is a natural propensity. Indeed, how can it be otherwise, for in a wild state a dog may be supposed to have hunted down some large animal, as a sheep, goat, &c. &c. Having satiated his appetite on it, if he be of a moderate size only, he buries the remainder to hide it from others, and has recourse to what is left when his wants require it. If the animal be very large, as a camel, horse, ass, wild ox, or lama even, though several may have joined in the chase, no burial can take place; consequently the work of decomposition is rapid, particularly in hot countries, where, long before the flesh is all devoured, the remnant is one mass of corruption. Nevertheless we have reason to suppose that not one atom of the savoury repast is left, by what we observe of our own dogs, who for weeks are seen around the carcass of a dead horse, and at last dig up the long buried entrails to make a finish. The powers of the predaceous tribes are probably as apt to receive nutriment from animal matter in a state of decay as the larvæ or maggots of the flesh fly, or as the man of epicurean taste, who prefers to eat his venison, wildfowl, &c. in a state which requires it to be tied to the spit to preserve its continuity.

1502. *Of the vegetable substances from which dogs can receive nutriment*, the list extends to almost every edible plant; and though dogs will not voluntarily eat all vegetables, yet the number that they will take is very considerable, and may be greatly increased by custom. We once had a pointer bitch remarkably fond of all fruits, as well as of all sweet vegetables, as peas, &c. Gooseberries she would herself gather from the trees; raisins, sugar, and indeed sweets in every form, were particularly sought after by her. The dog, as well as ourselves, receives most nutriment from those vegetable substances which abound with saccharine and farinaceous matter, as all the pulses. Wheat, barley, and oats, in the form of flour or meal, are well known as food for dogs. Dog-biscuits are continually advertised in the London papers, whence it may be inferred that they are generally approved of, made from a mixture of these meals. Bread dust is sometimes used; damaged biscuit also, when not too much injured by salt, or worm, is good. Rice also is thus employed, as well as Indian meal. New meal of any kind is less nutritive than that which has been kept for some time. Oatmeal, in particular, should not be used until it is two years old. An experiment made in Mr. Osbaldeston's kennel is said to have proved that it took two pounds of water to set the pudding, with one pound of new oatmeal; whereas it required two pounds and a quarter of water to set it with the same quantity of old meal, which gives an eighth in favour of the economy, and a quarter probably in favour of the nutritive properties of old meal over new. When meal of any kind is kept in large quantities, as it must be in hunting kennels, it should be carefully preserved from damp, which is best done by keeping it well pressed in casks, which should then be headed down.

1503. *The heating qualities of meal*, particularly of oats and barley, are best counteracted by a mixture of more succulent vegetable matter. Potatoes, carrots, &c. when boiled, are therefore added to meal with great advantage to the dog. The liquor of all the brassica, or cabbage tribe, counteract the heating quality of meal, and it is therefore common in some hound kennels to mix the meal that is used with the liquor in which cabbage, cauliflowers, brocoli, spinach, &c. have been boiled.

1504. *Mangel wurzel has also been successfully used* as an antiseptic and cleansing addition to the food of hounds and pointers. It was with a laudable zeal pushed into notice by the communication of Mr. Amyatt to the *Sporting Magazine* for February, 1833.

where its virtues, and the mode of giving it, are fully detailed. The beet-root is first well boiled, and being pulped, both pulp and liquor are added to a due proportion of meal of any kind, or to biscuit, &c. Mr. Amyatt extols it, perhaps, a little too highly, when he says it is a certain cure as well as preventive of mange; but, as having a general tendency to keep hounds in excellent condition, we think he may be right. In the summer, when the mangel wurzel is out of season, this observant sportsman substitutes nettles, or cabbage, to mix with his Indian corn, which meal he finds the most economical of all the *farinæ* for dog food; for though otherwise of a heating tendency, by mixing it with the mangel wurzel, its stimulating properties are completely neutralised. Mr. Beckford likewise mentions whey and vegetables as an excellent summer diet, and a great preventive of mange. The general hour of feeding in this gentleman's kennel was for a long time eleven o'clock, but this he saw occasion to alter to eight o'clock: nor can the time of feeding hounds be arbitrarily fixed in any kennel; for although it is well, both for the hounds and the attendants to have every thing under a system of regularity, it is evident that the work of the hounds, as that of the attendants, must sometimes interfere. This subject will, however, be again touched on.

1505. *The method of preparing the food for a kennel of hounds* is essentially the same in most kennels of repute. There should be two iron boilers, a large one for meal, and a smaller for flesh; but avoid boiling near the lodging of the hounds, as the smell of the food makes them impatient, and often quarrelsome: the soot of the chimneys also falls on them, which is, however, a minor evil to the other. When porridge alone is used, if it be either of oatmeal or wheatmeal, it must be well boiled, but when of barleymeal it must be only slightly so, as that boiling which thickens oat and wheatmeal would make the other thin. When flesh is also given, the meal is first well boiled, and being taken from the boiler, the meal is mixed with the broth and boiled, little or much, according as it is of one kind or another. When meal only is allowed, the stir-about ought to be nearly solid when cold; but when it is to be mixed with flesh, it should be much thinner. From the boilers it may be transferred to large flat coolers; and the quantity made should be sufficient only for one day in summer, and for two only in winter. The flesh, also, should be boiled every day, or at most every other day; at least such is the opinion of most feeders: our own opinion is, that moderate staleness of the meat is not of much importance for reasons before stated. It is, however, of much consequence that it be finely cut to prevent its being picked out by the crafty hound, instead of his portion of stir-about; and the bones also should be broken very fine, to extract the nutriment from them. Were a digester used a considerable saving might be made in the quantity of flesh required; and where it is scarce, as is sometimes the case, it may be a consideration worthy the attention of masters of hounds to use one.

1506. *The feeding of hounds preparatory to hunting.* Mr. Beckford recommends that they be fed on the day previous at eight in the morning. We however conceive the time might properly be regulated by the hour of the hunting meet; if that be fixed for eleven, the hounds may be fed at discretion from nine to eleven. He further directs, "that after having been all let in together to feed, flesh be mixed with what remains for such as are poor, who should be drafted off into another kennel: when the flesh is all eaten by the poor hounds, the pack are again to be admitted, and are by this means cheated into a second appetite. At three o'clock, those that are to hunt the next day should be drafted into the feeding-yard, where about three buckets of thick mixed oatmeal are prepared for them: the tender and bad feeders should have a handful of boiled flesh given to them afterwards. Should hounds be low in condition, and have far to go to cover, they may all have a little thin lap again in the evening; but this should never be given if you hunt early. Hounds should be sharp set before hunting, they run the better for it. Eleven o'clock is a good hour, when hounds are not to hunt the day following, as they are to be fed once only."

1507. *On feeding after the return from hunting,* Mr. Beckford differs somewhat from the customary mode of shutting up hounds for some time to lick themselves clean. He, on the contrary, recommends to send a servant forward to have the victuals in readiness for immediate feeding, otherwise fatigue may make them indifferent to their food afterwards; and, as regards tender hounds, he is in the right. He also recommends in this case that they be a second time fed some hours after the first feeding; at which time a little motion, and a reshaking up of their litter, and clearing out of the kennel, will refresh them, and they will afterwards settle comfortably to their benches for the night.

1508. *Feeding late is a great preventive to kennel quarrels.* Who amongst us does not feel his temper improve after a good meal? Either on the evening of the chase, or on the next morning, look over the dogs, to observe the casualties that may have occurred to eyes and limbs, and remove the wounded to the infirmary. A thorn now detected and removed may save a severe gathering. and perhaps a stiff joint; nor can it be denied, that the tired dog requires these attentions, and that a failure in them has lamed many an excellent hound for the remainder of his life.

CHAP. IV.

THE DISEASES OF DOGS.

1509. *When it is considered that, after the horse, the dog is the most useful servant of man,* it is not without surprise and regret we observe that so little attention has been paid to his ailments, which are more numerous than those of any other domestic animal, in consequence of the closeness of his domestication, and the artificial nature of his life.

Sect. I. *The Tendency of the Dog to Disease.*

1510. *The organs of assimilation in the dog,* it may be remarked, are very similar to our own, which has produced a corresponding similarity between the number and nature of the diseases of men and dogs. They are subject to every one of the topical inflammations of vital organs, to which we are predisposed: their young, also, are affected with rickets, worms, convulsions, goître, and mesenteric tabies. In those of mature age, gouty concretions, stone, gravel, rheumatism, asthma, dropsy, chorea, epilepsy, palsy, tetanus, scirrhus, &c. if not common among sporting dogs, are frequently met with among those kept as companions, and consequently no reason exists why others should not occasionally be thus variously affected. In fact, there is hardly any human complaint to which they are not almost as obnoxious as their masters: but, fortunately for sportsmen, it is principally among those closely confined, and highly pampered, that many of these ailments are met with. This striking similitude between the human and canine diseases enables the medical practitioner, conversant with human ailments, in most cases to prescribe safely and beneficially for dogs; while the veterinarian, if he have not studied the specialties of structure between the dog and the horse, is not equally competent to cope with canine diseases. Unfortunately for the poor dog, as the human practitioner has often thought the matter beneath him, and the veterinarian has found it above him, little has hitherto been done for him; and the treatment of his ailments has been left to the sapience of either the kennel feeder, huntsman, gamekeeper, or groom. One of these has measured the necessary remedies by what he takes himself, and the other by what he gives to his horse; and though the analogies with the former are the least injurious, they are not altogether to be depended on, while little or no similarity exists between either the diseases or the medical treatment of the dog and the horse.

1511. *As regards the action of medical agents,* it is therefore to be borne in mind, that little analogy exists between their effects on man, horses, and dogs. Ten grains of calomel, though a full dose, is by no means a destructive one to a human subject; yet we have seen a large pointer killed by this quantity, which had been ordered by an eminent surgeon: even three or four grains will often act violently as an emetic, and yet twice the quantity will often fail to act as a purgative. Twenty times the quantity would fail to have one or the other effect on the horse; whereas, on the other hand, three drachms of aloes, which would probably prove fatal to nine human persons out of ten, might be taken by some large dogs with impunity. A dog could take, without any derangement, a dose of opium which would destroy a man; but the dose of nux vomica, or crowfig, that would kill the largest dog, would fail to destroy one of our own species. A very small quantity of oil of turpentine will kill a dog; whereas in human practice a considerable dose is frequently given as a vermifuge. Between the effects produced by many medicinal articles on the stomachs of other domestic animals, and that of the dog, a still more marked distinction, or, at least, a more universal one, exists. Without knowing better, one might be misled by the accounts we read, and hear from sportsmen, of the monstrous doses they give of some medicines: the fact is, the stomach rejects it at once, — a dog is soon vomited, and thus is not destroyed; give him half the quantity, and it would kill, because it might not be immediately rejected. It will therefore be evident, that neither the human physician nor the veterinary practitioner can be equal to a successful medical practice on dogs, without much attention to the subject, and much experience in it. How much less likely are those to attain to it who study recipes only, and whose sole information is derived from the assertions of others equally unacquainted with the matter, that they had cured certain diseases of dogs by giving such and such doses of some favourite drug or nostrum. This empirical practice prevents the benefit of searching into cause and effect; and the more complicated diseases of dogs unhappily are not better understood by many of their masters, or by their kennel attendants at the present time, than they were in those of Markham. At this moment many sportsmen who have matriculated at our universities, have as much faith in worming of dogs as a preventive of madness, as they have in their Alma Mater; while others persist in the less ridiculous, but equally mistaken, notion, that vaccine inoculation is a preventive of distemper. As sporting dogs live much in the open air, take much exercise, and are usually moderately and regularly fed, their prevalent diseases are confined in number, and to these only we shall extend our notice at the present time, referring the more minute inquirer to our *Canine Pathology*, for further information on every one of the numerous maladies and accidents to which dogs are liable.

1512. *The diseases of dogs are studied by symptomatology as in the human subject.* We examine the state of the circulation by the pulse and by the breathing; we examine also every part of the body by the eye and touch. The eyes and tongue must not be passed over in a morbid examination; if the former be reddened, there is inflammation, and the same if the tongue be white and furred; if brown and listed, the liver is probably affected.

1513. *The best method of administering remedies:*—Place the dog, if of moderate size only, upright on his hind-legs, between the knees of a seated person, with his back inwards (a very small dog may be taken altogether into the lap; a very large one, the giver may bestride). Apply a napkin round his shoulders, bringing it forwards over the fore-legs, by which he is secured from resisting. The mouth being now forced open by the pressure of the fore-finger and thumb, upon the lip of the upper jaw (*fig.* 225.), the medicine can be conveniently introduced with the other hand, and passed sufficiently far into the throat to insure its not being returned. The mouth should now be closed, and it should be kept so until the matter given has been seen to pass down. When the animal is too strong to be managed by one person, another assistant is requisite to hold open the mouth; which, if the subject is very refractory, is best effected by a strong piece of tape applied behind the holders or fangs of each jaw. The difference between giving liquid and solid medicines is not considerable; a ball or bolus should be passed completely over the root of the tongue, and dexterously pushed some way backwards and downwards. When a liquid remedy is given, if the quantity is more than can be swallowed at one effort, it should be removed from the mouth between each deglutition, or the dog may be strangled; the head should also be completely secured, and a little elevated, to prevent the liquid remedy from again running out. Balls of a soft consistence, and those composed of nauseous ingredients, should be wrapped in silver or thin paper, and greased, or they may occasion so much disgust as to be returned. Medicines wholly without taste, as mercurials, antimonials, &c. may be frequently given in the food; but sometimes a considerable inconvenience attends this, which is, that if the deception is discovered by the dog, he will obstinately refuse his food for some time afterwards. The purging salts may also be sometimes given in food, being mistaken by the animal for the sapid effect produced by common salt.

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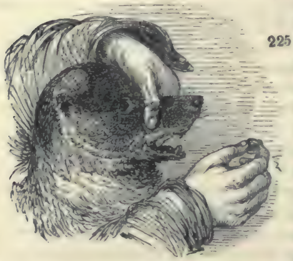

GIVING MEDICINE TO A DOG.

1514. *The pulse of the dog may be felt by the heart*, and also at various points of both the fore and hind-legs, but particularly at the inner side of the protuberant callosity of the carpus or knee. The range of pulsation between a very large and a very small dog is not less than twenty; thus, if a hundred be taken as the usual number of the first, and a hundred and twenty for the latter, whatever is found to much exceed this, may be usually laid to the account of an inflammatory state. It must however be observed, that from the greater irritability of lesser animals compared with the larger, and the extreme quickness of their circulation, the motions of the heart and arteries do not present such exact criteria of health and disease, as they do in the horse and other large animals.

1515. *Bleeding of dogs is not a difficult operation*, but may be easily effected by opening the jugular or neck vein with a fleam or lancet; but the latter is much to be preferred. A ligature being put round the lower part of the neck, and the head being held up, the vein will swell and protrude itself on each side of the windpipe, about one inch from it. It will, however, be necessary previously to cut the hair away if it be very thick, after which the puncture can be easily made with a lancet, the operator leaning over the dog. Nothing is necessary, in general cases, to stop the bleeding, but to remove the ligature; nor is any pin, plaster, or bandage, requisite for the orifice. When circumstances, such as the want of a regular operator, or when the amateur is called on to deplete his own dog suddenly, as in the field, when the means of venesection by the neck are not at hand, in any such case the ear may be punctured, or an incision may be made on the inner side of the flap of it, choosing, if possible, the course of a vein for the puncture, but avoid passing the instrument through the ear; or the tail may be cut in desperate cases: but when this is done, it is better to cut off a small piece, than to merely make an incision underneath; for when this has been injudiciously performed, we have in a few days seen the whole tail in a state of mortification. Bleeding is essential in the inflammatory affections of the dog equally as it is with ourselves. When the stomach, bowels, or lungs, are thus affected, nothing offers so active a remedy as the loss of a few ounces of blood, proportioned to the size of the dog. We would also remark, that in bleeding any dog that is of very great worth, either for his sporting qualities, or for the regard he is held in, that it will add greatly to the efficacy of the bleeding if it be done during the time the dog is in a warm bath. It not only increases the flow of blood, but also decreases the inflammatory action of the heart and arteries; and by opening the minute pores of the skin, it cools down the feverish heat of the body.

SUBSECT. 1. *Condition as necessary to Dogs as to Horses for Sporting Purposes.*

1516. *Hounds, greyhounds, setters, pointers, spaniels, and sporting dogs of every description,* to be fully equal to their work, require conditioning by the same processes of lightening and hardening the body, and improving the wind, as are used towards the race-horse or hunter. If the hound be full of flesh and gross in his habit, he can neither be in wind nor in full scenting condition; for the pituitary secretion will be injured with the rest, and a morbid state of the skin, called foulness of coat, in every instance injures the scenting powers; the mangy foxhound and the mangy pointer both scent faultily. The dog, ever loaded with fat, cannot keep to the head, until by exercise, alteratives, &c. he has lost fat, by which he gains a greater freedom of respiration. To the wished for excellence in the field, it is therefore absolutely necessary that attention be paid to the condition of all sporting dogs; the pointer without it may wind himself, but he cannot wind the birds; the foxhound also equally requires the conditioning process. Without it, the eager pack in vain attempt to carry the scent through the stains and footings of pasturing cattle, or to catch the fleeting particles escaping from the grassy mead or parched fallow. It is remarkable that Colonel Cook appears either to misapply, or otherwise to mistake, the true nature of the term condition in dogs; which we take to be, in its sporting signification, exactly the same with condition in horses, and we believe no fox hunter would think his horse could be in too high condition for a sharp burst with foxhounds, or that any other state could give any horse a chance of being in a right place. Is the foxhound also not as much an artificial animal in his present state as the horse? and is not an artificial state of condition necessary to enable him to fairly run down a stout fox in thirty or forty minutes without a check? and yet the gallant colonel says, "it is quite certain *a hound too high in condition* cannot run a burst; neither can a poor half starved one kill an afternoon fox." By this it is evident that the colonel makes no distinction between a grossly fat dog and one with sufficient flesh, but that flesh well hardened by judicious conditioning. This want of precision in making use of a popular term, might lead to much mischief, particularly when employed by one, "having authority;" and it is the more remarkable that such an observation should have escaped him, as in another part of his work he expressly informs us, that "he lost three of his best dogs, wholly by inattention to their state in this particular, which," he observes, "caused him ever afterwards to pay double attention to that most material point — *condition.*" (*Observations on Fox Hunting*, p. 142.)

1517. *The method of promoting condition in dogs* consists in reducing the body from too full and lax a state to one of firmness and less bulk; or it consists in raising a lean and reduced dog to lustiness, hardness, and vigour: some sportsmen prefer the one state, and some the other, to begin upon. With the exception we have lately made, Colonel Cook deserves attention on this head, for he draws the line judiciously between the plethoric and muscular states. "The ribs," he observes, "should be visible, and the flank moderately hollow, but the loins must be well filled up in a dog in perfect condition. When dogs exhibit general fullness and too much flesh, commence by physic and a regular course of exercise, which should be mild at first, but increased until it is severe. Avoid too great a privation of food, otherwise the conditioning process will be retarded."

1518. *Dog physic is variously formed.* Jalap is a favourite purge with some sportsmen, but it is uncertain in its action; gamboge is very drastic; the submuriate of mercury (calomel) is likewise very irregular in its action on dogs: we have seen eight grains fail to open the bowels of even a small one; while, on the contrary, we have ourselves seen a pointer fatally poisoned by ten grains: it forms however a useful auxiliary to purgatives, in doses of three or four grains; and, as it not unfrequently acts on the stomach, so it may be used with advantage as an emetic in some cases, particularly in conjunction with tartarised antimony (tartar emetic). When, therefore, a purgative is brought up again, in which calomel was a component part, it may be suspected to arise from this source; and if it be necessary to repeat the purge, the mercurial should be omitted. Epsom salts are used in some kennels, but they are bulky, and if attempted to be given in the food, are often refused; syrup of buckthorn has long been a favourite purge with dog fanciers. Mr. Beckford recommends it, but unites with it sulphur and antimony, in the proportions of two pounds of sulphur, one pound of crude antimony, and a pint and a half of syrup of buckthorn, which answers for thirty couple of hounds. Aloes, in our own opinion, form the best general purge for dogs, and such are the peculiarities of their bowels, that while a man can take with impunity as much calomel as would kill two large dogs, a moderate sized dog will take a quantity of aloes sufficient to destroy two stout men. The smallest dog can take fifteen or twenty grains: half a drachm is seldom too much, but the smaller dose had better be tried first: medium sized dogs usually require a drachm, and some large dogs have taken more than two drachms. We have ourselves given three to a strong Newfoundland dog without extreme catharsis; but, as before observed, dogs differ much in their different habits, and it is therefore most prudent to begin with a dose too small than one too large: hundreds of dogs are every year destroyed by temerity in this particular.

1519. *Alteratives for dogs are formed of various articles.* Buttermilk alone is a good but slow alterative in cases of a heated itching skin, with blotches, or other cutaneous affections, short of actual mange. Buttermilk or whey, as a diet, likewise greatly assists the other curative treatment of mange, particularly it does so in the red mange. The nitrate of potash (nitre) is a very useful alterative to dogs, particularly for hot itching humours and redness of skin, in doses of four grains to ten: the supertartate of potash (cream of tartar) may be so given likewise with benefit, in large doses, in the same cases. All the preparations of mercury, though excellent alteratives, require great caution when frequently repeated, or regularly given; for dogs are easily salivated, and salivation produces very hurtful effects on them. Sulphur has not much internal effect on dogs; as however it is a gentle laxative, and certainly never injurious, it may be administered where there are symptoms of diseased skin, particularly when it is united with a moderate quantity of cream of tartar.

1520. *Emetics are somewhat questionable remedies for dogs.* It is true that vomition is a natural act in them, and they excite it themselves purposely, by taking the emetic or dog grass; but this a dog only does when he feels bilious nausea or disordered stomach. In the early stages of distemper only, are actual emetics of much apparent benefit to dogs; but in these cases the best effects are produced by tartarised antimony (better known as emetic tartar), which may be given in a ball, or will be voluntarily taken in milk or broth, &c. when rolled up in butter or grease, &c. The quantity may vary according to size, strength, or from one grain as the smallest, to five grains as the largest, dose. Calomel also, from four grains to six or eight, forms a useful cleansing emetic

Subsect. 2. *Mange in Dogs.*

1521. *All the Caninæ, as the fox and wolf, are subjects of mange as well as dogs.* The itch of the human subject and the canine mange, if we mistake not, are nearly allied, and moreover by close contact each can generate the other. The canine mange is a chronic inflammation of the skin, dependent, in some instances, on the morbid constitutional action: it is infectious, also, from miasms produced from animal exhalations; and it is notoriously contagious from personal communication with one affected. It is not, however, so completely contagious in all its varieties as is supposed, for we have known dogs to sleep with affected ones for some time without becoming mangy; but in the majority of cases it is otherwise, and in some the predisposition to it is such, that almost simple and momentary contact will produce it. The mange which is received by contagion, is more readily again given to another than that which is generated by hereditary descent, or constitutional aptitude. The uniform presence of animalculi within the psoric pustules, has revived the idea that it originates in the attack of *acari*, and we more and more incline to the same opinion. Mange is undoubtedly hereditary; a bitch lined by a mangy dog brings forth a progeny either directly mangy, or that eventually becomes so; the mangy bitch also never breeds a perfectly clean progeny. Of all the causes which beget mange, and they are not few, the acrid effluvium from their own secretions is the most common; when it is generated by numbers, particularly if they be confined within a limited space, it is sure to appear. Close confinement of any dog will commonly produce it, and most certainly so if he be at the same time fed on salt provision; thus there are but few dogs on shipboard that do not contract it, except such as are allowed full liberty of the deck. Food too nutritive in quality, and too considerable in quantity, is productive of mange; and, on the contrary, food in a great measure withheld, or being very poor in quality, is equally a parent of the disease. In both these apparent contrarieties, the balance between the skin and the digestive functions is not preserved, and the disease follows as a necessary consequence. This affection presents some permanent varieties: it has also some anomalies; but the *pruritus*, or itching, is common to all, and proves the most obstinate evil of all that accompany this affection, by its forcing the sufferer to injurious irritation.

1522. *Of the different forms of mange* we may enumerate, as most prevalent, the common scabby kind, and that known by the name of *red* mange. There are also two subvarieties, as that called a *surfeit*, and a sudden or acute mange, somewhat of the nature of erysipelas. This latter kind frequently shows itself in an acute attack on the integuments of the scrotum: the swelling and ulceration which sometimes attacks the substance around one or other of the claws, is a mangy affection, and yields to the general treatment of mange. (See *Canine Pathology*, 3d edition, art. Mange.)

1523. *Treatment of mange.* Whatever similarity may exist between this complaint and the human itch in other respects, a very great difference is observed between the obstinacy of the one, and the ease with which the other may be cured. Medical practitioners on the human subject consider the itch as local; but veterinarians, to their vexation, will find mange constitutional in the dog, and too often also very deeply rooted. Like the human itch, it is however most judiciously treated by remedies that excite absorption; and sulphur, the grand panacea of the one, is also the general application for the other: but as mange exhibits greater varieties, and is altogether more difficult of cure, it is seldom that we can trust to this alone for that end. The following *formulæ* are adapted for the common varieties of mange: —

No. I.

Powdered sulphur, yellow or black, four ounces. Muriate of ammonia (sal ammoniac, crude), powdered, half an ounce. Aloes powdered, one drachm. Venice turpentine, half an ounce. Lard, or other fatty matter, six ounces. Mix.

No. II.

Sulphate of zinc (white vitriol), one drachm. Tobacco in powder, half an ounce. Sulphur in powder, four ounces. Aloes in powder, two drachms. Soft soap, six ounces.

No. III.

Lime-water, four ounces. Decoction of stavesacre, two ounces. Decoction of white hellebore, two ounces. Oxymuriate of quicksilver (corrosive sublimate), five grains.

1524. *Dissolve the corrosive sublimate in the decoctions*, which should be of a moderate strength; when dissolved, add two drachms of powdered aloes, to render the mixture nauseous, and prevent its being licked off by the dog, which ought to be very carefully guarded against. The best means for this purpose is a muzzle, having a very fine wire capping or mouthpiece, which will effectually prevent the dog from getting his tongue to the ointment, which would prove his almost certain destruction. When therefore the application contains mercury, tobacco, hellebore, or other active poison, it is recommended not to depend wholly on the bitter of the aloes as a preventive to licking, but to apply an effective muzzle. Instead of muzzling, we have now and then sewed him up altogether in a dress; but even then he must be watched, that he does not gnaw it off: if the dog be much valued, a muzzle of the kind described is therefore the best preventive.

1525. *For the cure of red mange*, to either of the recipes, I. or II. add an ounce of strong mercurial ointment, and use as already directed; but it will be prudent to carefully watch the dog, that salivation may not come on. Should this, however, unexpectedly occur, suspend the use of the ointment until the salivation disappears; when the treatment should be resumed and persisted in until all appearances of the affection vanish.

1526. *Internal remedies*, as correctives of the faulty habit, greatly assist the cure of obstinate mange. We have hinted at these correctives when treating on condition as necessary for sporting dogs. Mange, it must again be enforced, is subject to many variations, and consequently it requires an equally varied treatment to meet these. This affection is treated on at great length in our *Canine Pathology*, but our limits forbid our enlarging upon it here.

Subsect. 3. *Internal and external Canker of the Ear.*

1527. *Canker within the ear* is somewhat of the nature of mange, and is often brought on by the same causes; such as a superabundant formation of blood, and a consequent accumulation of flesh, by which the secretions not being wholly spent in the support of the body, the superfluity seeks to find some other outlets. Canker has also another predisposing cause, which is a frequent access of water to the cavity of the ears; thus poodles, water spaniels, and Newfoundland dogs, are particularly liable to it. The length of hair around the head of these dogs, by heating and retaining moisture within their ears, encourages an afflux of fluids or humours, as they are termed, to them. That *taking the water* has this tendency, is proved by the fact, that water dogs more than all others are liable to it, although they may be in full exercise and neither over fed nor over fat: and that their peculiar liability to it arises from this cause, is further proved by the cessation of the discharge in many cases when they are prevented access to the water.

1528. *The curative process for internal canker of the ear* must be either simple or more complicated, according to the cause producing the disease. Whenever there is much fulness of habit, and the dog is very fat, or when he has been subjected to much confinement in a hot close situation, these circumstances must be immediately rectified. Abstinence and purgatives will reduce the fat; a cooler situation must be chosen, and it must be both dry and airy; plenty of exercise must be given to divert the fluids of the body into another channel. In such cases as are accompanied with symptoms of a constitutional foulness by a red itching, stinking coat, and mangy eruptions, in addition to exercise, feed on a vegetable diet principally, give cleansing alteratives, and occasional purges also. In very bad cases a seton may be put in the neck and kept there, until the benefit derived from it, in conjunction with alteratives, has effected a cure: occasional bleeding is also beneficial. As external applications, first use a wash composed of half a drachm of superacetate (sugar) of lead, dissolved in four ounces of rose or rain-water. A small tea-spoonful may be introduced (previously warmed to a blood heat to prevent surprise) night and morning, rubbing the root of the ear at the same time, to promote the entrance of the wash into the cavities. In more obstinate cases, it is prudent to add fifteen or twenty grains of vitriolated zinc (white vitriol) to the wash; or rather make two distinct mixtures of these articles, and alternate the use of each, which will prevent the chemical decomposition of these medicinal agents as the suspending menstruum; and likewise, instead of water, use a decoction of oak bark, which will greatly promote the end desired. Now and then acetate of copper (verdigris), mixed with oil, has proved beneficial when introduced in the same manner. In others, submuriate of quicksilver (calomel) and oil have produced amendment when applied in the same way. We have also seen a weak injection of the oxymuriate of quicksilver (corrosive sublimate) succeed, when every other application has failed. A very mild injection of nitrate of silver, as one grain to two ounces of water, has benefited others; for in this as in mange, and indeed in all skin affections, no one remedy is an universal panacea: happily, however, there are few cases but will submit to a patient trial of various means.

1529. *Canker on the outside of the flap of the ear* consists of an ill disposed ulcer, situated on the lower edge of the flap of one or both ears, which often divides it into a kind of slit; by its intolerable itching, the sore is kept in a continual state of aggravation from the shaking of the dog's head. As might be expected, Newfoundland dogs, setters, and other long coated dogs, are most subject to internal canker of the ear; but the smooth coated, as pointers, hounds, &c. are in general affected with this outer canker. Pointers and hounds are therefore many of them rounded, the latter particularly, by which they become less liable to it than those whose ears remain of the natural length: and it is also common as a cure to round them after the disease has appeared; but it then frequently fails, because the part taken off seldom extends sufficiently beyond the surface of the ulcerated slit, otherwise the practice is good. It is not unusual, likewise, to burn out the ulcer, either with the actual cautery, or with some caustic substance; but this also proves an uncertain remedy, unless it be cauterised to a sufficient depth beyond the diseased surface. With care an external application is usually found sufficient for the cure, which is fortunate, as some persons are decidedly averse to mutilate a favourite.

1530. *For the cure, use an unguent,* made with equal parts of ointment of nitrated quicksilver and calamine cerate, which should be applied once a day, carefully securing the ear from the injury occasioned by the shaking of the head, by a sort of head dress, during its use. Or the following may be tried: oxymuriate of quicksilver (corrosive sublimate), very finely powdered, three grains; cerate of calamine (Turner's cerate), one drachm; sublimated sulphur (milk of), one scruple. In some cases the sublimate has proved efficacious in the form of a wash, six grains being dissolved in four ounces of water. Strong astringent lotions are sometimes useful, as alum dissolved in a decoction of oak bark. When however the disease proves very obstinate, excision must be resorted to; taking care that the whole, not only of the immediate cracked part, but also of its tumefied edges, are included in the operation. Should this also fail, round the ear deeply; and if it is wished to preserve uniformity of appearance, round the other also.

1531. *Abscess of the inner surface of the ear flap.* From similar causes to those which give rise to inner and outer canker, imposthume sometimes forms on the pendulous flap of the ear, which swells enormously, and forms a prominent shining tumour, so painful and weighty as to prove very distressing to the dog. It is more common to long than short ears, as those of hounds, spaniels, poodles, &c.; and all attempts at dispersing these tumours always fail; for the collections are, from the first, less phlegmonous than serous. The only mode of relief is, therefore, to evacuate the contents; but it is too common merely to make a small opening for this purpose, which is almost certain to heal immediately, and a fresh accumulation takes place of the same bloody serum. The tumour ought either to be opened its full length, and a pledget of lint introduced, to prevent too hasty a union of the outer edges of the sac, or a seton should be introduced, embracing the whole of the tumour, which should be suffered to remain for a week or ten days. By this means, instead of a discharge of serum, healthy matter will form in a little time; the sides will granulate and unite; and, on the removal of the seton, the external lips of the wound will close firmly and healthily. It is, however, a necessary caution to observe, that it is not prudent to open the tumour until it exhibits its characteristic shining appearance with evident fluctuation. We may again remark of the matter within, and it will be well to state, that as all the affections of the flap of the ear are greatly aggravated by the force with which they are rapped against the head by shaking it, the pendulous part should always be secured in a kind of cap during the medical treatment (*fig.* 226.), where it will be seen that a well contrived cap being made to fit moderately close to the head, and fastened underneath the chin and throat, will of course prevent the dog from violently flapping the tumour against the hard bones of the head.

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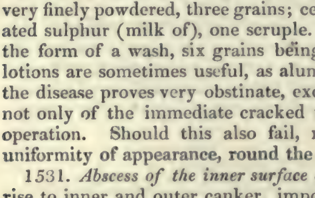

DOG CAP.

SUBSECT. 4. *The Distemper.*

1532. *The distemper* was, we believe, derived from France, where it is called *la maladie:* we also, it would appear, when we imported this scourge of our most valuable breeds of sporting dogs, as well of those interesting and amusing breeds which engage the attention, and win the affections of many, were not content without adopting its unmeaning name likewise — that of distemper. With us this malady was certainly unknown a century ago:

nor is it acknowledged by French authors, but as a disease which had a modern existence only, of an epidemic nature, severe in its visitation throughout European countries, where it had proved fatal to numbers, and for which no direct remedy had been found. (See *Encyclopédie Méthodique*, liv. lix. art. CHASSES.) Other French authorities describe it as a canine disease of a novel nature, which some suppose to have been derived from England. The more accredited French authors, however, candidly admit that it was first known in France. In opposition also to the recent appearance of the distemper among us, it has been conjectured, that it is the angina of the ancient catalogue of canine ailments; rabies and podagra forming the other two principal maladies. Artificial treatment has greatly increased our present list, or the worthies of former times were but indifferent nosologists. The ancient canine *angina*, however, appears to have confined itself principally to the throat, while little or nothing is said of nasal discharge. (See *Ælian, de Nat. Animal*, lib. iv. c. 40.; *Aristotle, Hist. Animal*, lib. viii. c. 22. &c. &c.) In our own country we have not wanted notices and descriptions of the complaint from some eminent sources; but from a want of sufficient experience of its Protean character, and inability to separate its true pathognomonic, from its occasional symptomatic phenomena, these writers on it have done little more than increase the obscurity which hung around it, and expose their own ignorance on the subject. Dr. Darwin, it is true, characterised it as a debilitating catarrh; but it is evident he took a very superficial view of its symptoms and consequences, when he considered the only treatment necessary was, that the air should be allowed to pass freely over the ulcerated surfaces of the nose. If the Schneiderian membrane were the sole seat of the disease, there might be some show of pathological reasoning in this; but as an early participation is made either with the lungs, the intestines, or the brain, from which it derives some of its strongest characters, so it is evident the rationale of Dr. Darwin falls to the ground. The further absurdity of directing that distempered dogs should be allowed to drink from a stream, that the contagious mucus of the nostrils having escaped one passage may not again enter another, and thus re-poison the dog, also proves his erroneous views of it. Dr. Jenner's description of distemper, we feel assured, has done more injury to a just view of the nature and proper treatment of the disease than a series of years can undo. His great popularity gave a sanction to his assertions, which the hastiness of his views did not merit; and when his enthusiasm in the cause of vaccination led him to assert that it would also ward off the distemper in dogs, as it *appeared* to do human small pox, he did those valuable animals an essential evil: for he not only deceived those who trusted in this fallacious view, but he also protracted many of those endeavours which might in the meantime have been going on to discover the true nature and effective remedial treatment of the complaint. We long ago had published these remarks; and Mr. Youatt likewise, on this subject, after observing that Dr. Jenner's description of distemper was "no more like the true disease than himself to Hercules," but was evidently made up of distemper and rabies, and unlike both, proceeds to remark on the total want of preventive efficacy in vaccination against the attack of distemper:— "I have," he says, "again and again put the power of this boasted preventive to the test, and I can say, without the slightest hesitation, that it is altogether without effect. I know many gentlemen who have placed implicit faith in the power of vaccination, and their whole kennel has been submitted to the operation; the season has been favourable, and the disease either has not appeared, or has assumed the mildest type, and I have got into sad disgrace; but many years have not passed before the distemper has broken out, and carried off the majority of those who were supposed to be exempted from its attack." (*The Veterinarian*, vol. iii. p. 88.) Our own experiments, and researches numerous and varied, both before and since those of Mr. Youatt, only tend to confirm this opinion. It may be somewhat irrelevant to the present subject, but the coincidence is too striking to be passed over, that when Dr. Jenner's boasted discovery of the efficacy of the vaccine inoculation in the prevention of small pox was the universal subject of eulogium, Mr. Ring, an eminent surgeon residing in Swallow-street, and ourselves, we believe, were the only persons of any notoriety who dared to doubt the preventive efficacy of vaccination. We always gave it as our opinion that its long indwelling in the human constitution would at length destroy its preventive qualities. How right we were, the late frequency and mortality from small pox in persons who had been vaccinated will prove.

1533. *The distemper,* although it is always to be met with, yet is not always equally prevalent; on the contrary, it occasionally rages with great violence in an epidemical form. As an epidemic, however, it still preserves its versatile character, the symptoms which characterise the general attack of one season, being usually different from those which prevail in another. A pustular eruption has been the leading symptom of one year. A violent phlegmonous tumour, especially of the head, has particularly characterised it in another. In the summer of 1805, many of the distempered subjects were attacked with a peculiar and painful spasmodic colic, which neither constipated nor relaxed the bowels, but after continuing acute two or three days usually terminated fatally. In the few cases which ended favourably, active purgatives of calomel and aloes appeared beneficial. It may also be remarked, that this is not occasional only, but that whenever distemper rages as an epidemic, it commonly assumes some particular characteristic type, without its usual versatility of symptoms. One year shall be remarkable for the harassing and obstinate diarrhœa that appears; another for the more than usual tendency to epilepsy and spasm; while in a third, a malignant putrid type will sweep off most of those affected.

1534. *The causes of distemper are various.* Any derangement of the body acting on the constitutional liability to the disease will bring it on. The predisposition to it is so great that very few (particularly in cities and large towns) escape its attack; but whether the constitutional aptitude be of itself sufficient to generate it without some exciting cause, is not clearly ascertained. Cold is a fruitful source of it; thus newly entered hounds are liable to it if they have been taken through water, or if rain falls and they are long at fault, or have to slowly draw on a cold scent, or to return home suffering under cold and wet a long distance. Washing without drying the coat afterwards, or throwing into the water, has occasioned it very frequently in dogs closely domesticated, or not completely matured.

1535. *Contagion is another fruitful source of distemper*, and is so much so that it is seldom that any young dog which has not already had it escapes, if he become exposed either to the effluvia, or to the contact of the morbid secretions on a mucous or ulcerated surface. In many cases the slightest application of it, or even being exposed to the air when impregnated with the exhalations from a distempered dog for a few minutes, is sufficient for the purpose. As it is communicable by the contact of the diseased catarrhal secretion, it may be supposed, that purposed inoculation with the pus or matter of distemper, will introduce it into the system of a healthy dog, and such is the case generally. Nevertheless, at times, the constitution is not open to receive the contagion; and not only will inoculation fail to produce it, but also constant communication, and every other means whereby it might be supposed communicable, prove equally so. At some future time, however, the disease will be readily produced in the same dog, by apparently less active agencies. The *occasional* causes are numerous: whatever tends to produce debility in the system is a grand one; thus distemper frequently follows other diseases, as pneumonic attacks; the confinement and treatment which virulent mange requires, is also sometimes observed to produce it; the tabid and rickety very seldom escape it in its severest form. The sportsman and country gentleman may probably smile at our notice of tabid and rickety puppies; but were he to visit the *kens of the fancy* in London, and other cities and great towns, he would find many such amongst their most favourite breeds. The bull-dogs and bull terriers reared in these dens of filth and confinement, as well as the high-bred fancy spaniels of the weavers of Spitalfields, are martyrs to diseases of various kinds, which stunt and deform one-third of their numbers. When distemper overtakes any of these, and particularly if mange be also present at the time, they seldom escape. If the disease become endemical, the havoc among them is then extreme. Low living, equally with confinement and bad air, is a powerful promoter of distemper; and a half starved dog not only contracts the disease more readily than another, but he also fares worse under it.

1536. *To ward off distemper*, young dogs should be very liberally and nutritiously fed; particularly they should be so treated, because if, in spite of all care, they should become distempered, they being at the time in full flesh and strength, are sure to have it more favourably than others. Nothing also proves the prophylactic effect of pure air and voluntary exercise, more than that young hounds at their walks seldom are attacked by it; but when such are brought home and kennelled, they seldom escape long after. A prejudice prevails in the minds of some sportsmen that animal food is productive of distemper; but this opinion is totally irreconcilable with reason; and according to our own experience, which has been considerable, it is equally contrary to fact. The notion, we expect, was borrowed from the French, who adopted the opinion from a few ill conducted experiments, on which we place no dependence: on the contrary, our own experience has proved that young dogs in full flesh, particularly when such is gained from a large proportion of animal food, are less liable to distemper, and fare better under it when it does overtake them, than any others which have been differently nurtured.

1537. *Of the effects of distemper on different breeds of dogs*, we may remark, that such as are used in rural economy, and, indeed, all such as live in the open and pure air, either escape it altogether, or have it with much less virulence than others; but wherever man has interfered in forcing an artificial breed, in educating to artificial purposes, or closely confining them, in such the disease is almost always severe. It is thus that it is so fatal to high-bred hounds, pointers, setters, and spaniels; and to terriers and greyhounds, as breeds even more artificial than the others, it is usually more so. Mr. Youatt observes, that few dogs imported into this country as exotics do well in it; in proof, it is known that the greater part of the northern dogs, brought by Captain Parry, were carried off by it within a twelvemonth. Some breeds possess an hereditary tendency to have it worse than others of the same kind: litter after litter of some sporting strains, will hardly yield more than one or two survivors; and in such case we would advise the breeder to cross the race. In crowded cities the disease is peculiarly severe and fatal; thus in London, those attacked have by no means the same chance of recovery as those attacked in the country.

1538. *Are dogs liable to have distemper more than once?* We reply, they certainly are although it is not an usual occurrence. We have ourselves seen more than one or two instances of a second attack of the disease, and that when years had intervened.

1539. *The symptoms of distemper are very variable;* indeed, they are so much so, as to make it difficult to set before the reader any diagnostic sign or signs: even the running from the nose, so common to the complaint, does not always appear until the distemper has made some progress; and sometimes also, in the midst of its most fatal course, the nasal discharge suddenly stops. There are, however, certain symptoms usually present in most of its cases; one of the earliest of these is a short, dry, husky cough, followed by a lessening of the appetite, the flesh, strength, and spirits; the coat also begins to stare, and the eyes to blink in a full light, as though painfully affected by it. Such also, if observed in the morning, exhibit the remains of a little hardened mucus adhering to the inner corner of each eye, while a general cloudiness of the cornea steals over its surface; the nose becomes moistened with a watery discharge, greater or less, as the membranous linings of the orbits and nasal cavities are more or less inflamed. In this state these discharges sometimes remain for two or three weeks without much alteration; eventually, however, they increase, and change from a limpid to a muco-purulent one, which flows down the face from the inner corner of each eye; and as the disease becomes more intense, it frequently glues up the lids during the night and blinds the dog, until his efforts by rubbing have opened them. The nasal discharge, which is first thin and watery, becomes muco-purulent; and the disease next changes to direct pus also, by which the nose is no less closed up each morning than the eyes. As the intensity of the mucous inflammation extends, the cough also, which at first is usually little more than a slight huskiness or expiratory effort only (or perhaps hardly exists at all, for in some cases but little cough attends the early stages), increases to a distressing, harsh sounding one, and to frequent attempts at forcing something up from the throat, by an effort that appears compounded of coughing and vomiting. Thus far the symptoms are those of a catarrhal affection; but as the disease advances others appear, and of a very different character, but equally anomalous and variable. Nevertheless they bear some characteristic marks which divide the future progress of the complaint into two or three distinct types. The first of these appears dependent on a transmission of the morbid affection of the membranes of the nose to those of the brain, when either epileptic fits come on, or otherwise chorea, better known as *St. Vitus's dance*, with its convulsive twitchings, wear out the animal. Sometimes true paralysis supervenes and renders him helpless.

1540. *The symptomatic epilepsy of distemper*, or what are called *fits*, are too common and too fatal accompaniments of this cruel disease to be passed over without particular notice. These epileptic fits may often be predicted with tolerable certainty, one, two, or three days before they come on; when, if judicious means are resorted to, they may be sometimes averted; but having once occurred, and the first fit being followed up by another within two or three days, it is very seldom indeed that any hope is left. The precursory symptoms are such as betoken a highly increased, though morbid, energy in the sensorium. From an emaciated, weak, and spiritless state, the dog becomes cheerful and alert; his dim and watery, or purulent, eyes become clear, and sparkle with animation; and if attentively viewed, the pupil, towards its bottom, presents an internal reddening of a fiery aspect: the nasal discharge, likewise, frequently either lessens, or is wholly suspended, and a momentary check to the accompanying diarrhœa occurs sometimes. The more active symptoms of the epileptic attack are often preceded by a series of spasmodic irritations; thus it is very common for a day, sometimes for two or three days previously, to observe a convulsive twitching of the eyelids, or of the lips or face, which increases to a quivering of the lower jaw, such as we often witness in dogs eagerly watching the food preparing for them, or when expecting any wished for object, as the going out of the sportsman who has been harnessing for the field in September. These spasmodic irritations, however trifling at first, soon increase to a direct convulsive champing of the whole mouth, as though something unpleasant in it was attempted to be got rid of: during this action, the poor animal stands distressed, though somewhat unconscious. The sensorial excitability is now arrived at such a height as to be readily acted on by trifling accidental circumstances; thus, an angry word spoken to the dog, a sharp rebuke to another, or the sight of one in a fit, will be often sufficient to bring one on him also. It is by an observance of this effect, that we are likewise able to understand why fondling or encouraging a dog under these *primary* attacks, will shorten the duration, and sometimes stop the fit altogether (*fig.* 227.); and also we learn why the sudden stimulus brought on by dashing cold water in the face will often do the same; which practice should, therefore, always be resorted to on these occasions. When the epileptic fits, however, have gained their full hold on the dog, these means usually fail. A

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FONDLING DOG IN A FIT.

partial or total mental alienation now takes place: when total, the poor brute is often perfectly phrenetic; he waters and dungs unconsciously, he tears up the ground, bites every thing around him, and not unfrequently himself also. When the fit is over, he shakes himself, and looks and acts as usual, unless the attacks have been very violent and long continued, when they leave him greatly exhausted and dispirited. The second, third, or fourth, day from the first appearance of these violent fits, particularly when they recur every hour or two, commonly close the scene, the animal being worn down by the additional strength and increased frequency of each succeeding spasm. It is during one of these fits, that a dog is apt to be sacrificed under a suspicion of *madness;* but the suddenness of the seizure ought to inform the looker-on of the total impossibility of its being *rabies*, which is always, in the worst cases, marked with some recollection, some knowledge, and never exhibits the indiscriminate fury which characterises epilepsy. (See our account of *Madness*, p. 435.) In another form of this epilepsy, the dog is seen to walk round and round, his steps being usually directed to one side only, with measured and solemn pace, the poor brute being generally unconscious to every thing around. This is not a very frequent form of the nervous affection; but we have seen several instances of it, all of which proved fatal. Such cases may be considered as a partial attack on the brain, principally directed to one side of that organ.

1541. *Another type of the distemper which follows the early catarrhal symptoms*, is a sudden attack of the viscera of the chest and belly, or both, and which usually leave the brain free from present affection. If the lungs become much inflamed the dog soon sinks, but when the bowels are more particularly the seat of attack, then diarrhœa, or purging, comes on. At first the common contents of the bowels only are ejected, but this is soon followed by the discharge of a lead coloured mucus, which eventually becomes tinged with blood, and the dog sinks under the irritation.

1542. *A virulent and putrid type of distemper sometimes follows the secondary stage.* Occasionally, however, this putrid tendency shows itself at once as connected with the first or catarrhal attack. These cases are accompanied by great debility, rapid emaciation, and total loss of appetite; the nasal discharge is great, fetid, and bloody, bespeaking extensive ulceration of the nasal membranes, which is sometimes so deep as to occasion hemorrhage from the part. Excoriations of the lips and cheeks follow the contact of the *sanies*, which pours from the eyes, and even from the ears also. In some cases the gums bleed, the tongue is covered with a dark crust, sometimes is ulcerated, and the whole body emits a peculiarly cadaverous smell. Stools are frequently passing, which resemble a mixture of mucus, blood, and putrid bile; and the wretched animal trails out a miserable existence, commensurate with the severity of his complaint, his own strength, or the means employed to combat it: thus, in some cases, it lasts a few days only; in others it is protracted to two or three weeks even, before he finally sinks.

1543. *The treatment of distemper must necessarily vary considerably*, according to the nature of the attack, as well as the age, constitution, and locality of the object of it. It is somewhat singular, that while the very best practitioners so often fail in their treatment of the complaint, we seldom have met with a sportsman or breeder of dogs, who, according to his own account, could not readily cure it, "being in possession of what he flattered himself was an infallible remedy." We once thought a remedy of our own discovery almost so: but though it remains a valuable one, it is far from infallible, and we suspect most of these are much farther from deserving such a character than that we allude to: it happens, however, with these fancied infallible remedies for distemper among gentlemen, that, under the exhibition of some supposed curative, having met with two or three successful cases, which would perhaps have done well without any thing, such medicament has been afterwards considered as the grand specific. But continued experience leads us to a conclusion, that although many different remedies are useful, according as one or other form of the disease prevails, yet that there is not, and we believe cannot be, an universal specific for this Protean disorder. As most cases of distemper commence by cough, or slight running from the nose and eyes, with loss of flesh, appetite, and spirits, an emetic is the first remedy, as it clears the stomach and bowels, and sympathetically lessens the inflammatory action going on. Should the pulse, the state of breathing, or a harassing cough, indicate any great determination to the lungs, take from three to five or six ounces of blood away according to the size, age, &c. particularly if the dog be fat, and moderately strong. If bleeding is omitted, substitute a mild purge, if the bowels are not already relaxed. Emetics are useful; as preparatory medicines in distemper, indeed, very useful. Strong dogs may take from two to four grains of tartar emetic; or, otherwise, from four to six or seven grains of calomel. Sometimes one and sometimes the other of these remedies is to be preferred. When there is any disposition to purging already observed, give the tartar emetic only, from one grain to four as a maximum; or the puke may be made of equal parts of calomel and tartarised antimony, from one grain to three grains of each; or even four grains of each may not be too much for a full grown dog of the largest breeds; and further, this latter vomit has the advantage of proving a laxative also. The purging and emetic articles used on these occasions by sportsmen, as Turpith mineral and crude antimony, are from their drastic qualities objectionable, and they can only be admissible for very strong dogs, not yet at all debilitated by the complaint: indeed, it is only in such cases that these violent remedies may be risked. Of this kind are large doses of salt, which occasionally do good when no looseness of bowels has already come on. The early insertion of a seton should depend on circumstances: if an impatience of light presents itself, and the pupils look red within, the cough being hard, dry, and frequent, insert one; but if, on the contrary, the discharge from the eyes and nose is become purulent and profuse, and particularly if the dog be losing flesh daily, by no means do so. While the dog is fat, should his inflammatory symptoms run high, two or three moderate purges are proper; but when distemper is at its height always avoid them. Costiveness, however, must be combated, but do it by laxatives only in these cases. As already observed in other cases, a brisk purgative is admissible and highly proper; for unloading the bowels, like unloading the stomach, will tend greatly to lessen irritation, and reduce the inflammatory action of the heart and arteries; but at the same time that, under these views, they are valuable agents, we must not lose sight of the diarrhœa, which is so fatal a symptom of the disease, and which too free a use of them might tend to bring on. These primary depleting means having been carried into effect, proceed with the following febrifuge: antimonial powder two, three, or four grains; nitrate of potash (nitre), five, ten, or fifteen grains; powdered ipecacuanha, two, three, or four grains; powdered myrrh, four, six, or eight grains: make into a ball with the minor, medium, or major quantities, according to the size and age of the dog, and give two or three times a day, as the symptoms are more or less urgent, diminishing the quantities if they occasion sickness. When the cough is very distressing, by which pneumonic symptoms may be apprehended, add to each dose of these from half a grain to a grain of digitalis (foxglove). Should nothing new in the symptoms occur, and your patient remain strong, every third or fourth day repeat the emetic, and keep the bowels open; but now more than ever avoid active purgation. It was in this stage of the complaint that we used to experience such beneficial effects from the distemper remedy first brought forward by us. That it acted, in many cases, as a specific, is most certain; for, without any sensible effect, the disease was suddenly arrested, and this so frequently, that we at that time placed unlimited confidence in its general efficacy. We have now no longer any interest in the remedy, or connection with the vender of it; but although willing to allow that we were too sanguine in our opinion of its universal and unfailing efficacy, yet we now assert, that had we one hundred dogs in the distemper, we should not think we did them justice if we did not try it on every one. When it is beneficial, the effect is immediate, and it really acts like a charm: one dose has often cured; but when no amendment is observed from two to three consecutive daily doses, we should not recommend any further trial, for it will not benefit that case. When it does good, it acts so promptly, that it occasions surprise, and has been thus lauded to the skies; where it does not, it naturally disappoints after so much praise, and is then by the other party blackened to the shades. But to return to the general treatment of distemper. Should the disease take on still more active symptoms of pneumonia, or inflammation of the lungs, which will be known by the quick laborious breathing, the head being elevated, and the dog remaining in a sitting position instead of lying down, however fatigued, then proceed to bleed; place the dog, also, in the cold air, and blister the sides and chest.

1544. *A purging state of bowels* is one of the most obstinate and fatal accompaniments that attends distemper, and it should never be allowed to go unrestrained for more than two days; and not even that time, if the disease be at all advanced, or the dog at all emaciated, otherwise he will be speedily brought so low as to be past recovery. The diarrhœa which accompanies distemper, nevertheless frequently proves very obstinate, and even baffles every endeavour to remove it. Suet, boiled in milk, has been long a favourite domestic remedy, and in slight cases is equal to the cure. Alum-whey has also proved useful, but more frequently when administered as a clyster than by the mouth. Great benefit has likewise been experienced from an infusion of the inner rind of the barberry, particularly when the evacuations have been glairy and mucus-like. When there is an appearance of bile in the stools, and the dog is yet strong, begin with an emetic of ipecacuanha, after which either of the following recipes may be used with probable advantage. No. I. powdered opium, six grains; powdered catechu, three drachms; powdered chalk, four drachms; powdered ginger, a drachm: make into twelve, nine, or six balls, with conserve of roses, and give one twice, thrice, or even four times a day, according to the urgency of the symptoms, &c. &c. Or try the following, No. II. powdered myrrh, two drachms; powdered ipecacuanha, one scruple; powered opium, five grains; carbonate of iron, one drachm: mix, prepare, and give, as above.

1545. *Astringent clysters* also are often beneficial, and may be composed of alum-whey, which is nothing more than milk curdled with alum. Suet boiled in milk is also an excellent clyster for the purpose. Boiled starch is likewise a valuable astringent clyster, and, perhaps, is the very best that can be used, if a moderate quantity of the first powder be added to it. In diarrhœa it is of the greatest consequence that the strength should be supported by liberal but judicious feeding; and it must not be forgotten that, when the appetite ceases, starch with gravy should be forced down in small quantities but often. The animals affected with this complaint should be kept very quiet and warm, both which parts of the treatment must be carefully attended to. In some instances we have witnessed the good effects of a daily warm bath. We have also observed, where the diarrhœa of distemper has existed in a dog who had been before closely confined, that removing him into a more free and pure atmosphere, has tended greatly to check the disease.

1546. *The epileptic fits of distemper are the most formidable of all the various types under which the disease rages.* It occasionally commences by a fit, which should be followed by a purgative; in which case it often happens that no more appear. But when a fit occurs in a more advanced stage of the disease, another will be almost sure to follow, unless such an impression can be made as to cause a counteraction. If a close observation is carried on, the symptoms noted will enable the treatment to take the start of the attack. First give an active emetic, and then follow that up by a brisk purgative. Mr. Youatt recommends a full dose of calomel united with opium. Insert a seton in the neck, also, if not already done, smearing the tape with blistering ointment. Should repeated attacks succeed, give the following to a medium sized dog every two hours, and half the quantity to a small one, in a spoonful of ale: — Ether, one drachm; tincture of opium, half a drachm; camphor, six grains; spirits of hartshorn, one drachm. Or, under another view, try the effect of *digitalis* (foxglove), by giving, every two hours, from ten to twenty drops of the tincture. As few remedies act so powerfully in lessening sensorial irritations as this, we recommend a trial of it. Place the patient in a very warm bath also, and retain him there twenty minutes, keeping him both warm and moist some hours afterwards, by means of wrapping in flannel and placing him before a fire: avoid irritation, force nourishment, and endeavour to shorten every fit by sprinkling cold water in the face, and likewise by soothing language and manner, which have often the happiest effect in lessening the force and duration of the convulsion. If these means should fortunately succeed, continue to keep the animal quiet, both in mind and body, and particularly refrain from allowing active exercise, which is very apt to bring on a recurrence of the fits.

1547. *The chorea, or convulsions of distemper*, are symptoms hardly less to be dreaded than the epilepsy already noted; for if chorea be not so immediately fatal, it yet frequently leaves the dog helpless and useless for life. As soon, therefore, as there is any appearance of spasmodic twitchings, if the dog be not much emaciated, or the nasal discharge very great, insert a seton; stimulate the spine every day; push a cordial tonic plan of medicines, with liberal feeding, and an occasional warm bath.

1548. *The debilitating stage of distemper* is best combated by the judicious use of tonics; which may with propriety be varied to meet the different symptoms the disease is still likely to assume. One of these is the continual discharge from the nose and eyes, with harassing cough, debility, and emaciation; which state we have found to be most advantageously treated by what, in old fashioned language, might be called a pectoral tonic: — Gum myrrh, powdered, two drachms; camomile flowers, ditto, three drachms; gum Benjamin, ditto, one drachm and a half; balsam of Peru, one drachm and a half; camphor, one scruple: mix, with conserve of roses, into twelve, nine, or six balls, according to the size of the dog, and give one every four or six hours. Should the purulent flow become fetid and bloody, add to the medicinal mass Cascarilla bark, two drachms; powdered opium, three grains; or, if the expense be not objected to, of the quinine, four or five grains. We cannot close this article without recommending to those concerned, a reference to our work on *Canine Pathology*, where the symptoms and treatment of distemper are much more fully considered.

SUBSECT. 5. *The Yellows or Bilious Affection of young Dogs.*

1549. *This affection is often a precursor of distemper*, and it also very often accompanies that disease. It is very common among young hounds, and shows itself by dulness, as well as disinclination to food and exertion, but is more particularly characterised by the universal yellow tinge of the skin, perceptible in all such parts as are thin of hair. The whites of the eyes, the inside of the mouth and flaps of the ears, the belly and flanks, afford prominent examples. It is without doubt occasioned by an unhealthy state of the liver; but the direct cause which produces a diseased state of this organ, and at this particular period of the life of dogs, is not so easy to account for. Were it that it only attacked dogs in numbers, and such as are kennelled also, we should ascribe it to confined air and want of sufficient exercise; and we must remark that it is much more commonly met with under these circumstances than any others. We must at least, therefore, consider these very predisposing causes of the complaint; but it will occur even without them.

1550. *For the cure:* —Where too close confinement, particularly in a damp or cold lodging, may be suspected as a cause, a removal is immediately necessary. A change of food also may be tried, and such is imperative, if any one particular food has been persisted in for some time, as oatmeal for instance. Even flesh feeding will engender it without an admixture of vegetable matter, and the more certainly if the exercise given be not correspondent with the supply, and if the air be not of the best quality and quite free of access. As medicines, mercurials, aloetics, and tonic bitters, must be depended on. The bowels should first be cleared out by a moderately brisk mercurial purgative, as of two, three, or four grains of calomel, with from twenty to forty grains of aloes, which may be mixed together into a ball and forced down the throat. Should this not operate moderately, increase the quantity of aloes, but not of calomel, which dogs do not bear so well as ourselves, while a moderate sized dog will require twice as much aloes to move his bowels as a man. As a tonic alterative give the following: — Mercurial pill, one drachm; aloes, two drachms; gum myrrh, gum Benjamin, balsam of Peru, of each one drachm and a half: make into a mass, and divide into ten, fifteen, or twenty balls, according to size, age, strength, &c. of the dog: give one every evening, and in a bad case every morning also. Avoid bringing on active salivation, and active purging likewise, after the first purging dose recommended. Watch for symptoms of distemper, which should be treated as directed under that head.

Subsect. 6. *Madness, or the Rabid Malady, in Dogs.*

1551. *The popular term madness* has of late years given place to that of rabies, or the rabid malady, as more classical and ancient. A little consideration only will, however, show that the disease yet wants a name at once descriptive and critical. The ancients as well as the moderns have equally mistaken the leading feature of the disease, for it is only in certain instances characterised by sufficient mental alienation or ungovernable fury, as seen in *fig.* 228. that it warrants the application of the term madness. Consequently Pliny, who calls it *rabidus canis*, and Horace, who makes frequent mention of *canis rabiosa*, are equally in the wrong. Nor is Cicero, with his *iracunde et rabie se facere aliquid*, less so. Hydrophobia, which is sometimes applied to this malady in the dog, is even more uncharacteristic; in fact it is a complete misnomer, because a repugnance to water, or dread of it, either taken inwardly, or when outwardly applied, forms no pathognomonic symptom here; but, on the contrary, may be considered as almost uniformly absent. We now say almost, because, although we ourselves, out of many hundred cases, never saw an instance of it, Mr. Youatt, who has unquestionably seen more than even ourselves, reports his having met with one or two cases of marked aversion to water. Anomalies will occur in diseases which are famed for the pathognomonic character of their symptoms. It is thus that the dread of water, though usual, is not inseparable from every case of this direful malady in the human subject even. Cælius Aurelianus informs us that some of the old writers called it *aërophobia*, from the effect which the motion of the air even produces; and others, determined to foil all criticism, have named it *pantephobia*, or a dread of every thing. Dr. Parry, in a treatise on this subject, has proposed *rabies contagiosa* as a more critical name for the disease: but if in this proposition the Dr. offered what he thought a new one, he was either confined in his researches, or he was a plagiarist; for Jos. de Aromatarius published a treatise, *De Rabie Contagiosa*, at Frankfort, in 1626. Dr. Parry's work, although highly commended at the time it appeared, yet is principally remarkable as affording an additional proof how little this malady was then understood, except by those whose professional pursuits, by bringing it almost every hour before them, enabled them to form just opinions on its causes, symptoms, and consequences. The opinions formed, however, on these grounds Dr. Parry warmly and severely opposed; and that he erroneously did so is apparent from the fact, that while those contained in his treatise have long ceased to be considered as any authority, those of our own, and those also of Mr. Youatt, who followed us, have every day gained more ground, and are now become, we believe, universally received and very generally acted on.

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1552. *The antiquity of the rabid malady is unquestionable.* We have authentic accounts of it more than two thousand years old. By some, Aristotle is considered as the first writer who distinctly alludes to it. (*Hist. Animal*, lib. vii. cap. 22.) But his opinion that it was not communicable to man, shows that it was in his time but ill understood. Some doubt also seems to be entertained, whether Hippocrates, in his *Coacæ Prænotiones*, intended to describe the rabid malady, when he says, " Phrenetici parum bibentes, strepitum valdè percipientes, tremuli aut convulsi." Diascorides and other ancient writers make mention of it also. In

1500 Spain was ravaged by it; in 1604 it was very common in Paris; and a hundred years after this, Germany and France became the theatre of this dreadful scourge among its wolves as well as dogs. Historians of every age have left short, yet frightful, records of its dreadful visitations; but the illustrious Boerhaave may, perhaps, be considered the first who threw much light on canine madness. In England, little had appeared worthy of notice before the account presented by Mr. Meynell, which this celebrated sportsman published in his *Memoir*, in the tenth volume of the *Medical Commentaries;* and if his account of canine madness do not exactly coincide with later representations drawn from a wider field of observation, it nevertheless characterises the disease with considerable precision; and, at the time it was written, was calculated to do infinite good, by banishing some dangerous and erroneous opinions relative to it.

1553. *In* 1806, *madness among dogs became common in England generally*, but it particularly abounded in the vicinity of London, where, during the next year, it increased to such a degree, that a day seldom passed without our being consulted on one or more cases; sometimes we have seen three, four, or five a day, for weeks together. In the two following years it likewise continued to rage; after which, for several subsequent years, it was less prevalent, but it never became extinct, or even so rare as before. In 1820 it was again observed to be on the increase, and for three or four subsequent years it continued alarmingly common, when it again moderated for a few following seasons; but since 1828 its ravages have occasionally exceeded even its former bounds. Of the later visitations of rabies, the writer has been a more quiet but observant spectator; but among those which occurred between 1805 and 1820 he was most actively engaged in medical practice on human and brute sufferers by the disease; and in a wide field of experiment on the nature, the causes, and the consequences of the complaint as it appears in dogs, and the phenomena of its communication to the human subject. (See *Canine Pathology*, 3d ed.)

1554. *The necessity of an accurate knowledge of the disease* cannot but be evident, when we consider its present prevalence, and how difficult it has been to eradicate from the public mind the errors and prejudices with which the consideration of it has been and is even now fettered. As already observed, its popular name of *madness* conveys an erroneous and hurtful impression with regard to it: and where it has been called *hydrophobia*, it has tended to keep alive an absurdity greater than the other. The wormed dog is still thought by some to be rendered incapable of taking the disease; and many more hold to the opinion, that, having been wormed, he is rendered harmless. Both of these suppositions are erroneous in the extreme, and lead also to very serious dangers. That a mad dog carries his tail between his legs—that he is instinctively avoided by others—that bread, meat, &c. be smeared with the saliva, blood, &c., or that any of the secretions of a mad dog, are refused with horror by other dogs—that the bite of a healthy dog, should he become at any time afterwards rabid, is capable of generating hydrophobia in the human subject, however long before bitten—are all equally erroneous opinions, although even now prevalent.

1555. *The symptoms of madness are very variable*, but as the early ones are not very active, they are apt to be overlooked in sporting dogs; and it is only in such as are kept immediately about our persons and within doors, that they show themselves. In these cases of close domestication, the approach may be observed by some slight alteration of manner and habit. In some its approaches are marked by unusual dulness, in others by increased vivacity, accompanied with restlessness or earnest attention to slight noises and minute objects. In one instance we foretold the approach of the disease by the uncommon attachment of a pug puppy to a kitten, which he was continually licking, as well as the cold nose of another pug that was with him. Deane, Earl Fitzwilliam's huntsman, has observed that among hounds he regarded the smelling and licking of the penis and fundament of another dog, as a most suspicious symptom. It is a curious circumstance, that sexual excitement is frequently an early symptom in all the subjects of rabies; in dogs it is common; it has been remarked in the human species also. Sheep and pigs becoming rabid are usually observed to show the disease, first, by riding their fellows. Lapping their own urine is a very common precursor to more active symptoms in the rabid dog. The eyes, even in the early stage of the disease, are often singularly bright, sparkling and red; occasionally a slight tendency to distorted vision, or squinting, is apparent; and such alterations in the usual appearances of the eyes, are generally followed by mischievous propensities in the animal. Nevertheless in some less frequent cases, the eyes are even less bright than natural, and a slight discharge of mucus, and sometimes of real pus or matter, escapes from their inner corners: now and then it flows from the nose also, which has frequently occasioned madness to be mistaken for distemper. But we would impress on the reader, that a moderate attention only to the manner of the dog, and to the morbid symptoms here laid down, will enable any one readily to distinguish between these diseases, provided the observer does not allow himself to be swayed by prejudice or foolish counsel. In some instances an early rabid symptom is a continual licking, scratching, and sometimes even a biting of some part of the dog's own body; and this very part is often proved to be that by which the infection was received; and, we believe, if a true history of every attack could be obtained, this would turn out to be the case in nine out of ten cases. Costiveness is very common; and vomiting also, though much less so, does occasionally occur; but ineffectual efforts to vomit are by no means unusual. The appetite is not always affected in either early or continued rabies; on the contrary, food is not only eaten, but digested also, during the first stages; and some will eat almost to the last; but with such subjects the food is seldom digested. That no disinclination to liquids exists, will be readily acknowledged by all who observe the disease with common attention; from the first to the last, no aversion to water is observed. We state this as a general fact; one or two instances in as many thousands may occur, of constitutional idiosyncrasy, where liquids are refused; but of the many hundred rabid dogs we have seen, not one has shown any dislike to water. In the early stages, liquids of all kinds are taken as usual, and some continue to take them so throughout the complaint: nor can we press too strongly on the recollection of persons engaged about dogs, that no manifest dread of water is either a pathognomonic, or at all a usual symptom in mad dogs. Neither does any active spasm attend the efforts to swallow water; and however the paralysis of the parts may render the attempt ineffectual, the sight and contact occasion no pain whatever; but, on the contrary, the desire for drink is urgent, and unceasing attempts to take it mark a majority of rabid cases: it is true that paralysis of the parts prevents deglutition in some, while others drink freely throughout the disease; but certainly there is not one in a thousand that does not seek water.

1556. *Mr. Meynell, in his well known remarks on canine madness*, says that mad dogs have no abhorrence or dread of water; and that they will eagerly lap it even the day before their death. He also notices the paralysis that often renders their attempts to drink abortive. John Hunter, who was not accustomed to state facts without examination, says, that "mad dogs can swallow solids and liquids through the whole disease." (*Trans. of a Society for the Improvement of Medical Knowledge*, p. 296.) Dr. Hamilton also writes, "A rabid dog never avoids water, and laps whatever liquid food is set before him, long after the poison can be communicated by his bite." (*Remarks on Hydrophobia*, vol. i. p. 12—16.) "Cette chienne, avait *bu* et mangé après avoir mordu!" (*Journal de Médecine*, vol. xxxix.) "Le loup mangeoit tranquillement une chèvre, et celui de Fréjus traversa plusieurs fois de grandes rivières à la rage." (*Voy. d'Arluc, Recueil Périodique*, vol. iv.) "Il est donc dangereux de concleur de ce qu'un animal *boit* et mange et *traverse une rivière*, qu'il n'est point atteint de la rage." (*Trolliet, Nov. de la Rage*, p. 276.)

1557. *Nevertheless we regret to be forced to state*, that even to the present time, not only these, but other prejudices prevail on this subject, which occasion unnecessary and lamentable dread in the minds of many. Should a dog, from any cause whatever, be prevented from swallowing food or water, his incapacity is attributed to madness, and his immediate destruction is the least part of the evil: for, if unfortunately any timid person may have been bitten by this dog, or have been licked only by it, years of dread and misery are the consequence. On the contrary, the ease with which rabid dogs can drink has engendered a fatal reliance on a fancied security which does not exist, but, on the contrary, may lead to the most disastrous consequences. Such, indeed, has been the ignorance even of our medical men on this subject, that we could produce instances of more than one physician who has unhesitatingly asserted that if a diseased dog can drink, his complaint is not madness. An eminent M.D. now no more, on being consulted on the propriety of using some prophylactic means, in consequence of three persons of the family of a well known horsedealer having been bitten by a dog under disease, satisfied himself with inquiring whether the animal could drink while under the complaint? Being informed that he did so, freely, throughout the whole of its duration, he unhesitatingly declared that no precautionary means whatever were necessary, and that he would therefore prescribe none. Fortunately the bitten parts of each of these persons were, notwithstanding, excised at our suggestion, and the result proved the necessity of the operation; for a horse and a dog, known both of them to have been bitten by the dog alluded to, in three weeks afterwards died rabid. Numerous other facts connected with these researches are detailed at large in our published medical writings.

1558. *Two leading varieties of the rabid malady* are known among sportsmen under the terms of raging and dumb madness. These popular distinctions, however, are not always well marked; and the degree to which they do exist, depends also principally on the circumstance, whether the specific inflammatory attack spends its violence on the respiratory, or on the digestive, system of organs. As however, in many cases, both the stomach and lungs are almost equally affected, so the symptoms which should characterise each of these particular types of the disease, become blended, and thus may lead to confusion and error, where these distinctions are particularly depended on. In only one instance are the rabid symptoms almost invariably distinct, which is in very young dogs; madness in them, as far as our experience goes, being invariably of the raging kind.

1559. *Acute rabies, or raging madness*, as it is called, is characterised at p. 435. by a figure. We may describe it as that state of increased excitement and irritability which usually follows these premonitory or early symptoms we have detailed. The dog, as these approach, usually becomes extremely watchful, and liable to be much affected by any sudden noise, or the approach of a stranger, &c. He is also impatient of control; he flies at a stick held towards him, which within his reach he shakes with great fury, even when offered by one to whom he still in other respects yields obedience. He is however not to be trusted in any such manifestations of attachment, for while he even appears to solicit attention from his former acquaintances, he will treacherously turn round and bite the hand that caresses him. When left to himself he tears every thing within his reach, and presents strong marks of delirium, following with his eye some fancied object, at which he oftens snaps.

1560. *A disposition to rove*, when not prevented by great weakness and paralysis, accompanies both varieties of the complaint, and the disposition appears to be an instinctive impulse to propagate the disease. The affected dog is unceasing in his search after other animals purposely to bite them. His attempts are more particularly directed against his own species, as he often passes (in his outset at least) horses, cows, and still more frequently human persons, without doing them any mischief; at least he does so in this stage of the complaint. As it advances in intensity, he bites human persons whenever they come in his way.

1561. *The howl or bark made by an affected dog* is peculiar and very characteristic of this complaint; indeed, being once heard, it cannot be easily forgotten. In sound it appears as though composed of something between a bark and a howl; now and then it is less distinct, and is mixed with a choaking hoarseness. Boerhaave seems to have this howl in view, when he says, *Muti quoad latratum, murmurantes tamen.* In character these rabid tones more resemble the giving tongue of the old southern hound than any other sound: they are also repeated at uncertain intervals.

1562. *Dumb madness*, as it is called, forms the second variety of rabies. The dog, it must be remarked, is only *dumb* when the tumefaction of the pharynx is such as to completely preclude barking, and is principally met with when the morbid affection is almost entirely spent on the bowels. In this variety, the symptoms which succeed to the premonitory ones, are often of the following character:—Superadded to the dull, heavy, and distressed countenance, costiveness, &c. there appears a stiffness about the jaws, and a hollow sound is emitted in breathing, which is rather performed by the mouth than the nose, that either being plugged up with pus, or the arch of communication being straightened by tumefaction: as the whole of the pharynx and larynx become tumefied to the full extent, the muscles at the base of the tongue, and those of the lower jaw, are rendered inert; the mouth remains open, as seen in *fig.* 229.; the tongue also hangs pendulous from it; and sometimes there exists an actual inability to close the jaws at all. A congestion of blood, it may be observed, is the necessary consequence of the distension of the parts; and the tongue from this cause usually appears, in these cases, livid or almost black, particularly towards its apex or point; frequently a black central line extends through its whole length. This state of the parts often occasions a difficulty, sometimes a total inability even, to swallow either liquids or solids. In general, however, the inability is principally confined to liquids, which are, in such instances, returned as fast as they are lapped, from the incapacity of the tongue to carry it into the pharynx; but in no instance, as already insisted on, do the attempts to swallow appear to excite apprehension or give pain. The mouth itself is mostly parched and dry; occasionally, however, it is seen with saliva continually flowing from it. Nor is there any contradiction in this statement; for although in this stage the mouth is usually parched and dry, there are very many instances where, at some one period of the disease, a temporary increased flow of saliva does take place; but in these particular cases, to the salivary flow, there succeeds a viscid bronchial secretion from the throat, which most painfully irritates the animal, and to remove which he often employs himself, with the utmost violence, in forcing his paws against his mouth, as dogs do when a bone is lodged between the teeth. It is the tumefaction of the pharynx that produces the deep choaking noise already noticed, and which seems to issue from the bottom of the glottis; and indeed all the ordinary symptoms spring from this specific *laryngitis* and *bronchitis*, by which these parts, although tumefied even to paralysis, yet remain free from the spasmodic rigours which accompany hydrophobia in the human subject. It is however far otherwise with the external muscular tissues of the rabid dog, for the cutaneous muscles become often first affected, twitchings pass over the face, and afterwards the spasmodic and paralytic affection frequently extends to all the organs of locomotion: in some, however, it is principally confined to the loins and hinder extremities. When the morbid affection acts very strongly on the bowels, it occasions the hinder parts to

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be drawn forward by a species of tetanic spasm toward the fore parts, so as to bend the body into a circle; sometimes it fixes the animal on his rump, almost upright.

1563. *A symptom common to dumb madness*, and not altogether uncommon in the more raging kind also, is a disposition to carry straw, litter, or other matters, about in the mouth, which the dog seems to make a bed of, frequently altering it, pulling it to pieces, and again remaking it. It is likewise very common to observe dogs scratch their litter under them with their fore-feet, not as when making their beds, but evidently to press the straw or litter to the belly. This very usual and characteristic symptom appears to arise from some particular sympathy with the intestines, which, in these cases, are always after death observed to be very highly inflamed. There is also present a disposition to pick up and to swallow, when not prevented by the affection of the throat, indigestible and unnatural substances, selected from whatever is around them, and which the costiveness, usually present, tends to retain within the body. It appears to be this impulse, likewise, that leads rabid dogs to gnaw boards, or whatever is within their reach; and this aptitude may be considered as common to every variety of the complaint, except, as already observed, where tumefaction and paralysis of the throat are so extreme as altogether to prevent it. The irritability attendant on dumb madness, is even subject to more variation than on that called the raging. It is sometimes considerable, and exhibits much of the treacherous and mischievous disposition that marks the other variety; but when the dumb character is very strongly marked, there is seldom either much irritability or delirium apparent; on the contrary, in many instances, a most peaceable disposition is manifest, which does not appear dependent on the inability to bite, but really from a total want of inclination to it. The progress of the disease in these cases, in its later stages, is marked by increased paralysis; and it often happens that, as it extends over the body, that of the jaws lessens: the wretched animal now reels about with little consciousness; tumbles and gets up again; now seats himself folded on his rump, and in this posture life is stolen away, often without a struggle. The fatal termination ranges between the third and seventh days; few die sooner than the third day, and very few survive longer than the seventh; the average number die on the fourth or fifth.

1564. *The morbid anatomy of the mad dog* forms a most important feature in a portrait of the malady, although it was long neglected. It by no means unfrequently happens, that it is not until a dog is dead that he is suspected of having been rabid, although he may have bitten one or more persons. Under such circumstances, it is evident that it is of the utmost consequence to be able to decide, from a *post mortem* examination alone, whether the disease did or did not exist. Fortunately, the morbid appearances peculiar to these cases are usually well marked, and so universally present, that a just decision is seldom difficult to form from them alone. On a careful examination of the head, the brain and its membranes will be usually found to have suffered more or less from the attack. Sometimes the general vascularity is only slightly increased; but, in most cases, the vessels of the pia mater will be found distended with blood, and that, usually, in proportion to the degree of excitement exhibited. The inflammatory appearances within the cerebral cavity are usually less considerable in those cases called dumb madness than in the raging. As might be expected, the spinal brain, or spinal marrow, as it is called, usually participates with the cerebral affection: sometimes the morbid marks are greater here than in the brain itself. The membranes also, which invest the spinal cord, are often highly injected, the spinal canal, likewise, is suffused with fluid frequently, and the nervous column itself occasionally presents diseased appearances. Much of the general tumefaction which exists during life about the back of the mouth, disappears on the collapse of death, but it commonly leaves the base of the tongue and the sublingual glands enlarged and injected as well. The parotid and submaxillary glands are also found to be gorged, the base of the tongue swollen, and its papillæ enlarged and highly injected. These appearances of the tongue and throat, it may be well to state, are found to be exactly the same in those cases in which the dog had been *previously wormed*, as in those where *worming had been neglected;* which fact affords another proof of the utter inefficacy of worming as a preventive of rabies. These statements are the result of a number of *post mortem* examinations, made by us during the years in which the disease raged with lamentable force and frequency.

1565. *The whole extent of the pharyngeal and laryngeal cavities* is mostly beset with discoloured spots; *but a distinct inflammatory patch about the angle of the larynx, at the back of the epiglottis*, is so commonly present, as to deserve the character of one of the criteria of the disease. The epiglottis and rimaglottis are also commonly enveloped with an inflammatory tinge, which now and then extends a little way within the trachea, but less frequently is it observed on the œsophagus. Proceeding onwards, we invariably meet with an extension of the morbid inflammation to the thoracic and abdominal viscera, *i. e.* the lungs and bowels: but by no means are these cavities always affected in an equal degree; on the contrary, in those instances where there has been a greater tendency to the raging variety, the thoracic viscera are usually more diseased than the bowels or stomach. Not only are the lungs themselves, in these cases, found highly inflamed, but the costal pleura and diaphragm are affected also. Sometimes one thoracic cavity is found more highly congested than the other; and now and then the mediastinum, pericardium, and even the heart itself, in cases of great rabid intensity, are found so likewise. The abdominal viscera almost invariably present strong marks of the morbid affection. If the dog has been destroyed early in the disease these appearances may not be very considerable, and an occasional case may occur where they are not very strongly marked, even when the animal is suffered to remain until death; but such instances are rare.

1566. *The appearances presented by the stomach afford however*, of all others, the most infallible criteria of the presence of madness; its inflammatory markings in particular, where the disease has been suffered to run its course, are commonly very considerable. The inner surface, or rugous coat, is often livid, and not unfrequently sprinkled over with pustular prominences: it is not unusual, likewise, for it to exhibit sphacelated ulcerous patches; we have seen it actually perforated by the mortification present. The outer surface also is seldom wholly free from inflammatory marks, particularly along the great curvature; and such is the intensity of the inflammation, that we have seen blood extravasated between the membranes and muscular stomachic coats. A very characteristic coloured representation of *the stomach of a rabid dog* appears in Mr. Daniel's supplement to his *Rural Sports*, to which we would direct the attention, whenever the dissection of a dog supposed to be mad occurs. Another very distinctive character of a dog having died of madness, particularly to non-medical observers, is also offered by the *contents of the stomach* in these cases. These stomachic contents are often varied, not unfrequently they are immense in quantity, and in many instances are wholly composed of indigestible substances, as hay, straw, wood, coals, or, in fact, of any surrounding matter which has proved small enough for deglutition. This disposition to take in unusual ingesta exists in every variety of the complaint; and as sickness and vomiting, though common in its early stages, are but seldom to be found during the later periods of it, so the substances taken in being of an insoluble nature, necessarily remain within the stomach until death. There is little reason to doubt that a morbid sympathy in this organ is the occasion of this peculiarity, and that the presence of these hard bodies gives some relief, probably by the distension they occasion. Certain it is that the appearance of this indigestible and incongruous matter within the stomach is so common, that it becomes a pathognomonic sign of the utmost importance, and it should be searched for in every case where doubt exists. We repeat, that of all the characters of madness, we regard these stomachic phenomena as affording the least fallible *post mortem* test of all. We do not say we never saw the stomach of a rabid dog without this crude nondigestible mass, but after the opening of more than two hundred dogs which had died mad, we do not recollect to have met with more than two or three in which they have not been found; and in those, in lieu of them, there was present a considerable quantity of a chocolate coloured fluid, not unlike coffee grounds, within the stomachic bag. In the very few cases, likewise, in which these matters are not found within the stomach, there are yet *always* to be seen the livid markings; and it will still, on minute inquiry, be learned, that such substances as those noted have been there, but have been vomited up; and also that the dog had been seen gnawing and tearing to pieces every thing within his reach, and swallowing some of them, which had been found, as we have said, ejected. This genuine characteristic cannot, therefore, be too strongly kept in mind, because it is one that may be sought for by one person as well as another, by the most uninformed, and by the amateur, as well as the professional man. It is also more important, because it may be found long after death, when the other marks have become blended in the universal decomposition and decay of the body. We cannot exemplify this better than by relating a circumstance of our being sent for to a considerable distance in the country, to examine a suspected dog, that had been already buried three weeks, but was dug up for our inspection. All other marks to be gained from the morbid anatomy had, of course, disappeared; and we must have been left in doubt (for the dog which had come from some distant part having bitten a child who was caressing him, had been in consequence killed on the spot; nothing therefore of his history was known), had it not been for this unfailing criterion, which we found to exist in this instance in its full force, and from which we were led, without fear of error, to decide that the dog had been rabid, and consequently, without excision of the bitten parts, the child's life was in danger. The operation was performed, and a twelvemonth afterwards was well.

1567. *The origin of rabies* we believe to arise in every case from inoculation, or the introduction of the rabid virus into the system. It is true that it must have been spontaneously generated in the first instance, and so must many other diseases in the human and brute frame, but which ailments are at present never seen to occur from occult causes. After many years of very extensive medical experience, and with almost unlimited opportunities of observation, we have never met with one case where the disease had occurred in a dog wholly secluded from the access of others. It is however due to truth to state, that a few cases are cited in opposition to this, but they have wanted full confirmation. It must also be owned that many eminent medical practitioners favour the opinion of spontaneous origin in madness, but no one has yet brought forward any direct proof of it. We therefore still doubt, indeed we more than doubt, whether there is any other origin to the disease than external inoculation. Of the alleged remote causes of spontaneous rabies we are consequently entirely sceptical.

1568. *Heat, as one of these remote causes*, has long been considered as a grand agent; but the direct proofs to the contrary are fast wearing away this prejudice. It is known that many countries under the torrid zone are entirely free from canine madness; and in the hot countries where it is found, it does not appear that by the heat of the climate it gains any accession to its frequency or morbid character. It cannot however be denied, that heat accelerates the attack in such dogs as have been bitten, particularly when conjoined with great bodily excitement. In this way a dog that has been inoculated, but in which the disease might not appear probably for weeks, by taking long and severe exercise in very hot weather, is almost certain to be attacked the next day. A very ready solution of any difficulty here presents itself in our knowledge, that as madness is itself an inflammatory affection, so all inflammatory excitation, as heat, violent exercise, &c. &c. hasten its attack. This accidental hastening we have witnessed in several instances, but in no dog did it occur but in such as we could distinctly trace to have been bitten. Bitches in heat, and the dogs which follow them, are thus exposed to have the attack hastened; but these circumstances never generate it, as is supposed by some persons. We have Burrow's authority for stating, that it is almost, if not entirely, unknown over the vast continent of South America. In many of the Western Isles it is a stranger; and in Egypt, Volney says he never heard of it. Larrey, Brown, and others, inform us, that it has never visited the burning clime of Syria; neither is it more prevalent in cold climates; and although it sometimes visits northern latitudes, it shows no preference for them; and, in Greenland, is said to be altogether unknown. In temperate climates, on the contrary, it is most prevalent; not perhaps owing to any thing in an extra-tropical situation, but merely because in such latitudes the most populous countries are usually situated, and in such all matters of interest are more likely to be noticed. In the United States of America it is sufficiently frequent, and throughout Europe we are but too well acquainted with its general prevalence.

1569. *Seasons have nothing to do with generating madness*, although summer has long been famed for its superior power of engendering it; and the Dog-days, probably, owe their name to the fancied prevalence of it at that time. But it is now sufficiently notorious that rabies is little more prevalent at one season than at another. Hurtrel d'Arboval observes, that rabies among dogs is most frequent in France in May and September, and that March and April usually produce the greatest number of rabid wolves; but this prevalence is undoubtedly very much under the influence of circumstances. M. Andry, in his *Recherchés sur la Rage*, Paris, 1780, observes, that January the coldest, and August the hotest, months, furnish the fewest instances. "Il n'est point vrai que cette maladie soit plus commune pendant les froids rigoureux de l'hiver, ou les chaleurs excessives de l'été, qu'au printemps et en automne." (*Trolliet, Trans.*) "It is by no means true, that this disease is more prevalent in the severities of winter, and in the intense heats of summer, than it is in spring and autumn."

1570. *The quality and quantity of the food has been assigned as a cause of madness*; but in dogs which have been accidentally subjected to a deprivation of food, bordering upon starvation, it never yet took place. Among innumerable experiments which have been made, we will only notice the cruel but striking one at the veterinary school of Alfort. Three dogs were chained, fully exposed to the heat of the sun. Nothing but *salted meat* was given to one; *water* alone to the second; and *neither food nor drink* to the third. As might be expected, every one perished; but neither of them exhibited the slightest symptoms of rabies. (See *Dissertation sur la Rage*, by M. Bleynier, Paris.) Neither has repletion ever occasioned it, although it has proved the parent of many other inflammatory affections. Putrid food has been fully proved to have nothing to do in generating rabies, neither would it, *a priori*, be likely to produce it in predatory animals, whose stomachs must by nature be formed to subsist on matter in various stages of decomposition. In Lisbon, in Constantinople, and other eastern cities, dogs are the only scavengers; and at the Cape of Good Hope, Barrow informs us the Caffrees feed their dogs wholly on putrid flesh, and no such disease is seen among them. Abstinence from water is an old and popular supposed cause of madness; but in India, where, from the drying of the water tanks, many brutes perish, and in northern latitudes, where the supplies are frozen, madness is not observed to be the consequence of either. In fact, in the rage for experiment, dogs have been purposely subjected to all these supposed causes, but without having once produced the disease. It is unnecessary to combat the opinion of Dr. Mead and others, that an acrid state of blood, from the want of perspiration in the dog, is a remote cause of madness. Neither have we more reason to suppose that any state or peculiarity of atmosphere can give rise to it, although it may favour the extension and activity of the contagion.

1571. *What other diseases are liable to be confounded with madness?* This is an important inquiry, as thousands of valuable dogs have been destroyed as mad, which have laboured under other affections, as distemper, colic, epilepsy, &c. and also thousands of owners of dogs and others have been needlessly rendered miserable by having been bitten by dogs innocent of any rabid affection. On the other hand, it is even more important that the real criteria of rabies be set forth, that due precaution may be taken when necessary. Epileptic fits, whether occasional or the consequence of distemper, are often mistaken for rabies; but it should be remembered, that there is no rabid symptom whatever that at all resembles a fit, whether in the *irritable* or in the *dumb* variety: we use these terms as being significant, although by no means scientific. An epileptic fit is sudden; it completely bewilders the dog; and, after a determinate period, leaves him perfectly sensible, and not at all irritable, but exactly as he was before: in rabies there is no sudden fit, no loss of recollection, no tumbling about wildly in convulsion, neither is there any marked break in the natural irritability attendant on madness. If a dog in an epileptic fit should be so convulsed as to attempt to bite, it is evidently done without design; his attack is spasmodic, and pain may make him seize any thing, and it is quite as likely to be himself as any person or thing besides. The irritability and mischievous attempts of the rabid dog have always method with them, and they evidently result from a mental purpose to do evil: he usually manifests a disposition to rove; the distempered dog never does so. A puppy in distemper, particularly if he have worms, may pick up stones, or eat coals, or he may in a trifling degree take unusual matters as food; yet no dog but a rabid one will take in hay, or wood, coals, or rag, or will distend his stomach almost to bursting. Lastly, the mistakes likely to occur between rabies and other diseases are in some degree attributable to erroneous pictures drawn by authors of such diseases: thus, Dr. Jenner's account of the distemper, instead of deserving the praise his great name has drawn down upon it, is entirely calculated to mislead; indeed, it might be supposed by his readers, that he was purposely describing rabies, and not distemper. (See *Medico-Chirurg. Trans.* vol. i. p. 263.) We could produce many similar instances in other authors, as Dr. Parry, &c.

1572. *The medical treatment connected with madness*, principally consists in employing preventive remedies, for we have no present hope of offering any curative ones, although we may hint at what has been done. Cold bathing, to the extent of temporary drowning, is a very old practice, having been recommended by Celsus, but is now exploded, both from the curatives, and equally from the prophylactics, of modern medicine; arsenic will arrest its violence, but it will not avert its ultimate fatality; warm bathings are equally inert; bleeding *ad deliquium*, electricity, galvanism, mercury, camphor, opium, belladonna, &c. &c. and various other medicaments have been lauded, and then abandoned after fruitless trials. Dr. Mead's remedy and the Ormskirk medicine are hastening to the tombs of the Capulets.

1573. *The Hertfordshire drink, or Webb's remedy.* The tree box is one of the oldest reputed preventives made use of. Mention appears to be made of it in the writings of Hippocrates; Galen and Celsus likewise speak of it. It has continued to be used from that time to the present, and it forms the active principle in the remedy common in several counties, but in none more than in Hertfordshire, where it is known, as we stated, under the name of *Webb's drink*, from the family name of the persons who prepare it. The rue which enters into it in equal proportions, we have little dependence on. The *buxus*, or box, has long been known in India also; and is still used there as a preventive of rabies: but it is, we believe, the dwarf box that is there used, and is usually united with a decoction of the horn of the rhinoceros. As from our own experience and the testimony of others, we are inclined to place some dependence on the preventive properties of the tree box, we shall introduce the original formula of the *Webb's drink*, as gained by ourselves from one of the family dispensers of it, whose oath was taken as to its being the genuine recipe: — Take of the fresh leaves of the tree box, two ounces; of the fresh leaves of rue, two ounces; of sage half an ounce: chop these finely, and after boiling them in a pint of water to half a pint, strain and press out the liquor: beat them in a mortar, or otherwise bruise them thoroughly and boil them again in a pint of new milk, until the quantity decreases to half a pint, which press out as before. After this mix both the boiled liquors, which will make three doses for a human subject. Double this quantity will form three doses for a horse or cow; two-thirds of it is sufficient for a large dog, calf, sheep, or hog; half the quantity is required for a middle sized dog; and one-third for a smaller one. These three doses are said to be sufficient, and one of them is directed to be given every morning fasting. Both human and brute subjects are treated in the same manner, according to the proportions specified. On the properties of this alleged *preventive remedy against madness*, we have entered very fully in the third edition of our *Canine Pathology*; but our limits prevent us from offering here more than a notice, that after many years of experience, without daring to vouch for its efficacy, we have *some*, but not a *full*, dependence on it: we should, however, where either a very useful or a very favourite dog was in question, certainly try it; at the same time we should carefully watch the animal.

1574. *The absolute destruction of the surfaces of the wounded parts*, either by cautery or excision, is without doubt the most certain preventive, and as such should always be resorted to. But as circumstances, to be immediately detailed, frequently render it difficult to detect the bitten parts with precision, particularly when covered with hair, other prophylactics of even dubious character only should not be neglected. The operation of destroying the surface of a wound supposed to be inoculated with rabid virus is not a difficult one, when such wound is detected, and when we are assured that there is no other puncture or laceration; but the incapability of the wounded animal to point out the wounds that may have been received, and which the hair may prevent from being observed, renders it necessary that a very minute examination of every part of the body should take place, by turning the whole hair deliberately back. This being done, remove any rabid saliva that may adhere to it in other parts by washing the animal over, first with warm water, and next with water in which a sufficient quantity of either potash or soda is dissolved to render it a moderate ley, in doing which the eyes, however, must be carefully guarded. Having finished this operation, which will render the dog, or other animal, secure from accidental virus hanging about it, it might increase the safety to be derived from the operation, if the wounds were bathed with an arsenical solution, made by pouring four ounces of water on two drachms of arsenic: in many instances a mere ablution of the dog and his bitten parts, with an arsenical solution of greater strength than here noted, has been trusted to solely as a preventive, which, from the results, appeared sufficient for the purpose. Prudence, however, forbids to stop here, or at any thing short of the extirpation of the wounded surface; therefore, after the ablution, proceed to the actual removal of the bitten part by whatever mode may appear most eligible to the operator.

1575. *The means of destroying the bitten surfaces* are by incision and cautery, actual or potential, as it is termed. A sportsman who might choose to act for himself, would find a ready means when the wound was a simple puncture made into the hide of a horse or dog, to thrust in a blunt pointed iron, heated to a red heat; after which the part might be further treated with any escharotic he had at hand, as muriate of antimony (butter of antimony), sulphate of copper (blue vitriol), &c. &c. The regular practitioner might excise with the knife, or he might with propriety, in a case of simple puncture, adapt a portion of nitrate of silver (lunar caustic) to the shape and size of the wound: this he should insinuate by degrees into it, making it embrace the sides fully, and extend it completely to the bottom, where it should be worked around sufficiently long to insure a complete destruction of the inoculated surface. A lacerated wound we would recommend to have its ragged edges removed, and its sinuosities enlarged, that the caustic may reach every part of the wounded surface, which it is evident must be most particularly attended to. As the slough hardens during the process, remove it by means of a probe, and then retouch all the parts, repeating the process every day, or every other, until satisfied no virus can be left. Although, from its importance to sportsmen, we have here entered somewhat into detail, yet we have treated the subject both scientifically and practically much more fully in our *Canine Pathology*, to which we would refer for all that may appear to be wanting here. Mr. Youatt's notices on this head before the public, may also be read with interest and advantage.

1576. *Dogs, it cannot be denied, are essential to us in many points of view* beyond their sporting acquirements: they guard our persons and our dwellings, and are now taught to officiate in many useful services, so as to render even an individual dog of great value to the owner. We have known twenty guineas refused for a yard dog, and the same sum has been given for a Blenheim spaniel of the true breed. It unfortunately happens, however, that those dogs most prized are most confined, and consequently are most subjected to disease. We know well many sportsmen who have a real personal regard for the inmates of their kennels; not only because they shine in the ready hit off of the fox, or instantly catch the odorous particles which escape from the grouse, partridge, or pheasant, but more especially because their sporting qualities are mixed with such other valuable acquirements and amiable traits, as to fix their owner's esteem, and rivet their affection. It is for these that our medical detail has been thus extended, under a conviction that they would seize with avidity on every instruction which would either ward off disease from their canine favourites, or tend to their recovery when it had overtaken them. Three times have we been seriously endangered by the bite of rabid dogs, and three times we have suffered cauterisation, excision, and some mental agitations; yet we admire and regard them as much as ever, and we also are convinced that thousands, both male and female, love them as heartily as we do. It is for these friends to dogs that we have entered so much into detail; but if this or more should tend to alleviate their miseries, save them from pain and death, and beget a more general regard for them, and a more zealous determination in all to unite in putting down the neglect and the cruelties exercised towards them, then our time will not have been thrown away.

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FOX HUNTING.

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FOX HUNTING.

1577. *The all absorbing interest a fox chase has over every other variety of hunting*, leads us to give it a priority of consideration to the pursuit of the stag, hare, or otter. The chase of all these animals necessarily presents some general features; hounds must be employed in all, and horses in all, except against the otter. All such matters, therefore, as are common to the hunting of these subjects of venation generally, will occupy our attention at one and the same time, by which much unnecessary repetition will be avoided.

1578. *In our description of fox hunting*, and our examination of its several concomitants, we shall endeavour to set before our readers the various opinions of our best writers, and the known practices of our most accredited sportsmen. To these we shall with deference add also our own opinions and conclusions, drawn from our hunting practisings in several parts of the kingdom, particularly in Sussex, Essex, Hertfordshire, and Northumberland.

Sect. I. *The Importance of Fox Hunting.*

1579. *Does the love of fox hunting need any apology?* The sporting reader will probably start, and say to himself, "What does the man mean by so absurd a question?" And yet philosophic writers have assured us that, as the march of intellect progressed, the chase, as an all absorbing recreation, would cease to be practised by the well informed, the polite, and the influential, and would be followed by the ignorant and debased only. These vaticinations however, so far from having been hitherto realised, although we are every day becoming more intellectual, are contradicted by every day's observation. At no period whatever has fox hunting been so zealously pursued as within the last fifty years; and at no period has it been graced by such a host of votaries; among whom may be found men, not more celebrated for their attachment to hunting, than eminent for their rank and attainments. The hero of many battles, the ermined judge, and our most eminent statesmen, may be seen pursuing it with the utmost ardour; and instead of the mere *Robin des bois* of former times, manners and accomplishments meet at the covert side, and pursue the vermin game with more zest than they hasten to the Park or St. Stephen's: and we question whether Sir Francis Burdett, when wielding an argument in the *House*, to the delight and admiration of his hearers, felt himself so truly great as when "foremost in the throng" in a fox chase; or whether Porson would not have given up all his distinction as a *Grecian* to have killed a fox, *à la Meynell.* The *furor venaticus* seems a scion of nature's own planting; hence all feel inspired by it; and while most other pursuits tire by repetition, deter by the surrounding difficulties, or frighten by the attendant danger, fox hunting seems to be rather pursued with an avidity proportioned to the obstacles which accompany it. Time also, which probably blunts most passions, serves only to give a new whet to this animating sport; and many an octogenarian is seen racing, indifferent about overtaking his fleeting years, but most anxious to come up with the flying fox. Of these assertions our own experience and our sporting annals offer innumerable proofs.

1580. *Talk of sporting difficulties!* the fox hunter laughs at them, whether they be physical or moral. Mr. Kitely, noticed by Nimrod, will not suffer his animal load of two and twenty stone to debar him from the pleasures of the chase, where he shines equally as a man of *mettle* and of *weight.* Capt. Pell of the navy, also noticed by the same sporting chronicler, spite of a wooden leg, stops at nothing when in chase of a fox; but, on the contrary, when arrived at a *rasping leap,* he tops it like a *workman,* holding fast by the pummel of his saddle. Mr. Charles Newnham, although he was his own huntsman, yet his attachment to this sport was such as enabled him for some time to accomplish the Herculean task of hunting his own and the Thurlow countries, having one kennel at Coggeshall and another at Thurlow, more than thirty miles apart; and yet he hunted every day in the week, Sundays (of course) excepted. Descending in the scale of rank, but rising in that of devotion to our subject, we cite Hastings the tailor; who, instead of being the ninth part of a man, must embody the souls of ten sportsmen at least. This hero of a shopboard in Cheltenham is, or was, so passionately fond of the hounds, that he was in the habit of constantly starting on foot, from the kennel to cover, with Lord Segrave's hounds, quite regardless of distance; but what is still more extraordinary, from his fine wind and speed, as well as perfect knowledge of the country and the line which the foxes usually take, he has very seldom been known to be many minutes in making his appearance at the conclusion of the best runs. He has hunted thus five days a week on foot with Lord Segrave, and has met the Duke of Beaufort's hounds on the sixth. On one occasion he walked from Cheltenham to Berkeley (twenty-six miles), and found the hounds gone to Haywood, ten miles further, to which he proceeded: he was rather late, but saw a good run nevertheless! It appears, however, that the sporting tailor is not at home on horseback; otherwise opportunities must have occurred of enlisting himself in the service of the field. Indeed, we are told that Lord Segrave more than once offered him a good situation as earth stopper; but his answer was in true unison with the love of the actual chase, that, "as he could not stop earths a-nights and hunt a-days too, he must decline the offer." Another pedestrian fox hunter, of equal enthusiasm, is described at large in Johnson's *Hunting Directory,* his name was White; and from childhood he had been so attached to field sports, but particularly to fox hunting, that he has been known to travel on foot sixty miles in a day, out and home, to enjoy this favourite pursuit.

1581. *Osbaldeston is a name dear to the lovers of fox hunting.* The "Squire," as he is called, is too well known, and his numerous sporting feats are too familiar to every ear, to need any eulogium from our humble pen; but there is another Osbaldeston also, whose name every lover of hunting should unite in rescuing from oblivion. "With half a dozen children, as many couples of hounds, and two hunters, this Mr. Osbaldeston, *clerk to an attorney,* kept himself, family, and these dogs and horses, upon a salary of 60*l.* per annum. This also was effected in London, without running into debt, and with always a good coat on his back. To explain this seeming impossibility, it should be observed that, after the expiration of the office hours, Mr. Osbaldeston acted as an accomptant for the butchers at Clare Market, who paid him in offal; the choicest morsels of which he selected for himself and family, and with the rest he fed his hounds, which were kept in the garret. His horses were lodged in the cellar, and fed on grains from a neighbouring brewhouse, and on damaged corn, with which he was supplied by a corn chandler, whose books he kept in order once or twice a week. In the season he hunted, and by giving a hare now and then to the farmers, over whose grounds he sported, he secured their good will and permission; and several gentlemen, struck with the extraordinary economical mode of his hunting arrangements, which were generally known, likewise winked at his going over their manors. This Nimrodian was the younger son of a gentleman of good family but small fortune, in the north of England, and having imprudently married one of his father's servants, was turned out of doors with no other fortune than a southern hound big with pup, whose offspring from that time became a source of amusement to him." (*Sporting Anecdotes*, p. 237.)

1582. *The advantages derived from fox hunting are also very considerable to the community at large.* If fox hunting should be annihilated our superior breed of horses would degenerate; the farmers would give up breeding if the chance of selling a horse for a hunter, at a profitable price, was hopeless: the consequence would be, the country in general would suffer. It would be impossible also to procure horses for her majesty's cavalry; and the present very expeditious mode of travelling must naturally be retarded, for want of the superior animals we now have (unless we go by steam and get blown up for our trouble). Can it be expected that farmers will be at the expense, trouble, and risk of breeding, if they have not a chance of selling their horses occasionally for hunters: the inferior price given by government for horses to mount the cavalry, and the low price at which coachmasters purchase theirs, would offer very little encouragement to a breeder to select well-bred mares and put them to strong thorough-bred bony horses; nor would it answer their purpose to trouble themselves to put forward clever four-year-old geldings, if they had not the chance of being remunerated by the means we allude to. The breed of men also would degenerate, and the manly characteristics of the nation would be changed: instead of the hardy, open hearted, liberal minded Briton, we should see nothing but an effeminate race, that would only meet once a year at a *grand battue*, to shoot a tame pheasant, and that would be the only *chasse* in England. Amongst a thousand other advantages belonging to fox hunting, the bringing together the different ranks of society is not the least: man in his various grades is here to be met with, and here one can see much of life; a fox hunt must therefore be allowed to be no bad school to study mankind in. (See *Colonel Cook's Observations on Fox Hunting*, p. 144. where nearly similar views are taken.)

Subsect. 1. *Weather and Scent.*

1583. *For the means of foretelling changes in the weather*, we beg to refer the reader to our angling department, where the subject is fully entered into; we may however here notice the connection between the weather and scent, and how much has been written, and how much more said, on it. Facts are valuable and should be registered; but opinions on the subject are so various and so contradictory, that it would be vain to collate them; and as to prognostics, the little faith we had in them Mr. Murphy has robbed us of. Scent is produced from particles of extreme tenuity which are given off from all animal bodies, but with very different degrees of pungency: thus the exhalations of a fox, badger, or polecat, are sensible to ourselves; but those of the hare, rabbit, and winged game, to their enemies only. The olfactory apparatus, and the physiology of the sense of smell, have been fully explained in our anatomical detail; we have only here to remark, as the odorous particles are rendered active by impinging the surface of a membrane within the nose and head, which nature appears to have taken much pains to extend purposely to increase its scenting powers, so it must be evident, that when we lessen the linear dimensions of the nose and frontal portions of the head of our hounds by too fine breeding, we act in direct contravention of the olfactory powers. The scent, when given off, floats lightly in the air for a time and then vanishes; others of its particles, coming in immediate contact with bodies, as the grass, &c. &c. are retained longer.

" The blood that from the heart incessant rolls
In many a crimson tide, then here and there
In smaller rills disparted as it flows,
Propell'd the serous particles evade
Through th' open pore, and with the ambient air
Entangling mix. As fuming vapours rise,
And hang upon the gently purling brook,
There, by th' incumbent atmosphere compress'd.
The panting chase grows warmer as he flies,
And through the net-work of the skin perspires,
Leaves a long steaming trail behind, which by
The cooler air condens'd, remains, unless
By some rude storm dispers'd, or rarified
By the meridian sun's intenser heat.
To ev'ry shrub the warm effluvia cling,
Hang on the grass, impregnant earth and skies.
With nostrils op'ning wide, o'er hill, o'er dale,
The vig'rous hounds pursue, with ev'ry breath
Inhale the grateful steam, quick pleasures sting
Their tingling nerves, while they their thanks repay,
And in triumphant melody confess
The titillating joy."

Somerville's Chase.

1584. *The immediate duration of scent is dependent on circumstances.* The odorous particles ascend or descend as the air is lighter or heavier, and also as it is more or less charged with moist vapours, so the duration of the scent is increased or lessened. Thus a southerly wind, which has a humid tendency, is favourable to scenting; and it is when the evening dews descend that flowers smell most sweetly. The keen northern blast and the eastern gale are equally unfavourable to scent; and the odorous particles which are then given off, escape quickly.

1585. *Somerville very justly considers air to be the grand agent of scent:* — "Thus on the air depends the hunter's hopes." On which Mr. Daniel remarks, that "It depends also on soil; and doubtless is most favourable to the hound when the effluvia, constantly perspiring from the game as it runs, is kept by the gravity of the air to the height of his breast, for then it neither is above his reach, nor need he stop for it: this is what is meant when scent is said to lie *breast high.* Experience tells us that difference of soil alters the scent. When the leaves begin to fall, and before they are rotted, scent lies ill in cover; a sufficient proof that it does not depend on the air only. Scent also varies by difference of motion; the faster the animal goes, the less scent it leaves: when game has been ridden after, and hurried on by imprudent sportsmen, hounds will with difficulty pick out the scent; and one reason may be, that the particles of scent are then more dissipated: but if the game should have been run by a dog not belonging to the pack, very seldom will any scent remain. Scent frequently alters in the same day; and without asserting what scent exactly is, it may be said to depend chiefly on two things, the condition of the ground, and the temperature of the air, which should be moist without being wet; when both are in this state, the scent is then perfect; and *vice versâ*, when the ground is hard and the air dry, there seldom will be any scent. It scarce ever lies with a north or an east wind; a southerly wind without rain, and a westerly one that is not rough, are the best. Storms in the air seldom fail to destroy scent; and a fine sunshiny day is not often good for hunting; but a warm day without sun is generally a perfect one; but there are not many such in a whole season. In some fogs scent lies high, in others not at all, depending probably on the quarter the wind is in; it also sometimes lies very high in a mist, when not too wet; but if the wet continues to hang upon the boughs and bushes, it will fall upon the scent and deaden it; also, when the dogs roll about, and when cobwebs hang on the bushes, there is seldom much scent. During a white frost, the scent lies high, as it also does when the frost is quite gone; at the time of its going off (which is a critical moment for hounds, in which their game is frequently lost), scent never lies. In a hard rain, with the air mild, scent will sometimes be very good: thus a wet night often produces the best chases, game not then liking to run the cover or the roads. In heathy countries, where the game brushes as it goes along, scent seldom fails; yet from the inclosures of poor land surrounding them, the scent is at times very difficult for hounds: the sudden change from a good to a bad scent confuses their noses; a scent therefore which is less good, but less unequal, is to hounds more favourable. When the ground carries, the scent is bad; for an obvious reason, which hare hunters, who pursue their game over greasy fallows and dirty roads, have great cause to complain of. A remark has been generally made, that scent lies best in the richest soils; and those countries which are favourable to horses are not so to hounds: and it has likewise been observed in some particular spots, in almost every country, let the temperature of the air be as it may, that hounds can never carry a scent across them." (*Daniel's Rural Sports,* vol. i. p. 102. 104.)

1586. *The animal effluvia themselves differ,* not only according to the variety of the animal they escape from, but also as the exhalations of each animal vary with circumstances. The hunted stag is never changed; the hunted fox and the hunted hare may be changed many times. The Country Squire on the same head remarks: — "It is also to be remembered, that there is no small accidental difference in the very particles of scent; I mean, that they are stronger, sweeter, or more distinguishable at one time than at another; and that this difference is found not only in diverse, but often in the same individual creature, according to the changes of the air or the soil, as well as of her own motions or conditions. That there is a different scent in other animals of the same species, is evident from draught hounds, which were formerly made use of for tracking and pursuing thieves and deer stealers; or rather from any common cur or spaniel, which will hunt out their masters, or their master's horse, distinctly from all others: and that it is the same with the hare is no less visible with the old beagles, which will not readily change for a fresh one, unless she starts in view, or unless a fault happens that puts them in confusion, and inclines them in despair to take up with the next they can come by." Had the Country Squire been a stag hunter also, he would have noted this peculiarity of the scent of the hunted stag, which, as already observed, is never lost, though scores of his kind are near. This veteran judiciously remarks on the nature of scent, that many circumstances may change it: according to his opinion, it is at one time composed of very fine particles, and at another of particles equally gross; and that this difference is frequently occasioned by accidental circumstances. Thus, he says, the coursing of a cur dog which may follow the hare during the run, will commonly produce a different effluvium to be left, and a fault is therefore almost always the consequence of this accident in the hare chase. "The hounds," he says, "must be again put on the scent before they will acknowledge it for their game; the reason is, the change in the motion causes one in the perspiring particles. The alterations of scent in a yielding hare are less frequently productive of faults, because they are more gradual, and insensibly grow smaller; but that alterations there are, every dog boy knows, by the old hounds pressing forward with greater earnestness as the hare is nearer her end."

SUBSECT. 2. *The Natural History of the Fox.*

1587. *The geographical distribution of the fox* (*fig.* 231.) is very general. He is common throughout Europe, the cold and temperate parts of Asia, as well as to some portions of Africa, where the heat is not intense, and he abounds in North America. In each of these countries he presents himself under somewhat different aspects, but his principal diversities arise from variety in colour and markings, and in all he sleeps round like the dog. According to Dr. Buckland, the fox was an antediluvian animal, his fossil remains having been found among the *Mammalia* of the first period of the tertiary series. He has also been found in the gypsum of the Paris basin. A very complete fossil specimen of the same was found in the quarries of Æningen under limestone, and was brought to England by P. J. Murchison, Esq. The fossil remains of this fox corresponded to those of the fox of the present day, which is strongly confirmatory of his full claim to originality of early formation.

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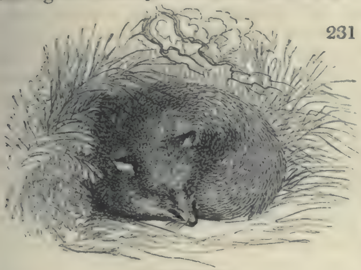
SLEEPING FOX.

1588. *The generic characters of this member of the canine group* have already been given in our history of the dog. His specific characters are derived from his linear pupils, his long bushy tail, and his mephitic odour. " Of the distinctive character between foxes and dogs," says Mr. E. T. Bennett, the ingenious author of the *Delineations of the Menagery of the Zoological Society*, " the most remarkable bears a direct relation to their different modes of life, and seems therefore to furnish an adequate ground for their separation. In the dogs, however great the intensity of light to which they may be exposed, the iris uniformly contracts around the pupil in the form of a circle; while in the foxes, if observed during the day, or under the influence of a strong light, it is seen to close in a vertical direction, the pupils assuming the figure of a section of a double convex lens. The object of this provision is evidently to exclude the rays of light in a much greater degree than would be compatible with the structure of a circular pupil, and it is consequently only found in those nocturnal animals in which the faculty of vision is capable of being exercised through the medium of a comparatively small proportion of light. Such animals are necessarily incapable of bearing the full blaze of day, which soon becomes painful to their eyes, thus compelling them to close their pupils to such an extent as to render their vision very imperfect: much of the cunning, and much of the suspiciousness of manner, for which the fox is notorious, is evidently due to this very circumstance; his attitudes and motions necessarily partake of the uncertainty of his sight, and he therefore appears to be most cunning and watchful when he is really most short sighted. To shade himself as much as possible from the light, he hides himself in burrows during the day, and prowls abroad in full possession of his perceptive faculties under the influence of a clouded night." These remarks, ingenious as they seem, and bearing a scientific stamp as they appear to do, are nevertheless in our opinion carried too far; nor are they fully borne out by facts well known to every observer of this animal and his habits. Were his vision as imperfect as Mr. Bennett would make it, he could never scour the plain as he does; or look out a-head for a flock of sheep to shelter him from sight, as well as to destroy his scented track by their numerous foot treadings He can do all this and more in the noontide glare, which would not be possible were he as crepuscular as Mr. Bennett paints him. Among his true vulpine characters it may be noted, that the lobes of the incisor teeth of his upper jaw are not so completely developed as those of the dog.

1589. *Between the fox and wolf the specific characters*, according to Mr. Bennett, are more strongly marked: — " Of these," observes this ingenious and amiable naturalist, but unfortunately now lost to us, " the most striking is unquestionably the great difference in their attitudes; the upright bearing of the wolf, and other species of that division, although mingled with a degree of dogged indecision, strongly contrasting with the crouching and almost trailing posture in which the foxes make their advances. The bodies of the latter seem consequently to be much less elevated upon their legs, and to be even somewhat elongated, and their shoulders and haunches assume a broader and more rounded form. Their heads also are broader and flatter, and terminate in a narrower, shorter, and more pointed, muzzle. Their tails are considerably longer, and much more bushy; and their furs, especially the winter coat and those of the more northern regions, are longer, softer, and far more valuable as an article of commerce." (P. 213. 215.) That the fox and dog will breed together we believe there are sufficient proofs, though the fact is yet disputed by some; but prolific intercourse between the wolf and fox remains yet very doubtful.

1590. *The English fox* is accurately described by Shaw as having " a broad head, sharp snout, flat forehead, orbitary fossæ oblique, giving a visual aspect, which differs from that of the dog; the tail straight and bushy. His colour is a yellowish red, or, more properly, yellow brown; and on the forehead, shoulders, hind part of the back, as far as the beginning of the tail and outside of the hind-legs, it is a little mixed with white or ash colour; the lips, cheeks, and throat, are white, and a stripe of the same colour runs along the under side of the legs; the breast and belly are ashy, or whitish grey; the tips of the ears and the feet are black; the tail externally reddish yellow, mixed with a tinge of blackish, and internally brownish yellow white, with a blackish cast, the tip itself milk white." (Vol. ii. p. 316.) Naturalists describe three varieties of the British fox: the greyhound fox, the mastiff fox, and the cur fox. There are certainly seen foxes which are tall and gaunt, while others are found of a stouter build though of less height, and a still smaller variety is occasionally met with. It is however probable, that these vulpine anomalies are rather the result of the external agencies of locality, temperature, &c. than fixed varieties: thus the woodland hare is thicker in form than those which inhabit upland or campaign districts. The fox in a state of nature is not seen to be a subject of frequent, or rather, perhaps, of varied disease. Occasionally he becomes mangy, sometimes virulently so; but whether he gains this disease from communication with others, or generates the malady, is not at present apparent. Certain it is that the disease sometimes proves fatal, as dead foxes have been found virulently affected with it.

1591. *The fox is notoriously mephitic*, and the odour is known to arise from glands near the anus. What does Linnæus mean by an ambrosial odour? *Ambrosiaco fragrat odore supra caudæ basin.* Schriber also, in his *History of Quadrupeds*, says, "The smell of a fox is strong and unpleasant, but on the tail is a spot from which proceeds a violaceous scent;" and which Doebel, in his work on hunting, appears to have been the first to have noticed, although future naturalists have failed to realise its existence. Perhaps Doebel had been deceived by examining a *bagman*, not yet relieved from his annisated dressing. The odour of the fox, is it a sexual incentive, or is it a defensive property to annoy other animals, or may it not answer both purposes? The badger, it is said, squeezes from its anal pouches a fetid secretion, which, mixing with its urine, it dashes in the face of its pursuers by means of its tail. The mephitic quality of some other animals has also given rise to extraordinary opinions and singular prejudices: thus Mr. Rennie observes, "In my antiquarian reading, I have met with the following singular notice of Scottish wolves in Bellenden's *Translation of Boetius*, edit. Edin. 1541:—"The wolffis are right noisome to tame beastial in all parts of Scotland, except one part thereof, named Glenmorris, in which the tame beastial gets damage of wild beastial, especially of tods (foxes); for each house nurses a young tod certain days, and mengis (mixes) the flesh thereof, after it be slain with such meat (food) as they give to their fowls or other small beasts; and so many as eats of this meat are preserved two months after from any damage of tods; for tods will eat no flesh that gusts of their own kind." (*Loudon's Magazine*, vol. ii. p. 457.) Pliny long before had recommended the breeders of poultry to give to each fowl some of the dried liver of the fox as a preventive against the attack of renard, who was also stated to be so gallant, that he would not touch any hen which had been *trodden* by a cock wearing a fox skin collar. The well known fact also, that there are but few animal effluvia which are not closely approached by some vegetable exhalations, is well exemplified in the fox; for the scent of the root of that variety of *fritillaria*, known as the crown imperial, so exactly resembles the foxy odour, as to be with great difficulty distinguished from it.

1592. *In point of character the fox is the same every where*; and whether he subsist on fish, as is the case in some localities, or on the lesser beasts and birds, he observes equal cunning in pursuit of his prey; but his ravages are greatest among game and domestic poultry. Though structurally carnivorous in a great degree, yet he is able to subsist on fish, reptiles of all kinds, fruits, and vegetables. In Scotland the tod (fox) is of great service by his destruction of the moor mouse, which sometimes is bred in such immense multitudes as to destroy the vegetation of the moors to the extreme loss of the shepherd. "In France and Italy," says Mr. Daniel, "the fox does great damage among the vineyards, by feeding on the grapes, of which he is immoderately fond, and with which he gets very fat, and his flesh is at that season said to be good eating. From the earliest to the present time, foxes were particularly noxious to vineyards: thus in the Holy Land, where they are, and ever have been, extremely common, the *Song of Solomon* complains of their depredations. "Take us the foxes, the little foxes, that spoil the vines; for our vines have tender grapes." But whether they were the species of which Samson made use to destroy the corn of the Philistines, is undecided. Since, however, schakals (jackals) are found to this day in great abundance about Gaza, it is much more probable from their gregarious nature, that Samson should have recourse to the hunting and catching three hundred of them, than of the solitary animal, the fox."

1593. *Foxes go to clicket, or are in heat, in the winter*; and their cubs are found the latter end of March, and it is fortunate for the fox hunter that they seldom appear earlier. The Hon. Wm. Gage, however, met with a litter of a month old in February, 1832, in one of his covers in Hampshire. They produce once a year only (except some accident befals their first litter), and they have from three to six young ones at a time; an instance, however, is on record, of eight being found: the bitch, whilst breeding, seldom lies far from the earth; and after her littering, if she perceives her retreat is discovered, she carries off her cubs, one by one, to a more secure situation. She is indeed a most anxious and tender mother, having been met bearing away a cub, when her watchfulness had certified to her that the hounds were out (*fig.* 232.), thus risking her own life to save that of her offspring. The young foxes, like young puppies, are brought forth blind: but the colour is not diversified in fox cubs as in dogs; on the contrary, they are always of the darkest brown. They grow eighteen months, and live thirteen or fourteen years. The fox sleeps sound and much during the day; and, like the dog, he lies in a round form (*fig.* 231. p. 447.), and may be often, as it is said, which we however doubt, approached without wakening; but he is in motion, and seeking his prey the whole night. When he is only reposing himself, it is said that he stretches out his hind-legs, and lies on his belly; in which position it is somewhat fancifully said, he spies the birds, as they alight on the hedges or places near him, and is ready to spring upon such as are within his reach. He, however, rarely lies exposed, except in clear and very warm weather, when he will sometimes lie basking upon a dry place, or, as we ourselves have seen him, on the stump of a tree; but he more generally chooses the cover of some thick brake, where he is secure from being surprised. "Crows, magpies, and other birds," says Mr. Daniel, "which consider the fox as a common enemy, have such antipathy to him, that they often give notice of his retreat by the most clamorous notes. Jays and blackbirds, in particular, will incessantly repeat the watch cries; and when the hounds are in chase of him, crows and magpies will follow him with their screams, from tree to tree, to a considerable distance; and, not unfrequently when hounds are at a check, their vociferations give a hint which way the fox has taken." (*Rural Sports*, vol. i. p. 267.)

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BITCH FOX AND CUB.

1594. *Foxes kennel either above or below ground according to circumstances.* In wet clayey districts, as those of Essex and some other counties, the fox conceals himself in thick bushes, or under stumps or hollows in the roots of trees; and such as are thus reared, are called by some *stump-bred*, but by most *stub-bred* foxes. It is not an uncommon opinion among fox hunters, that stub-bred foxes are not such stout runners as those bred under ground. Our own experience convinces us that such is not the case; for we ourselves have had many runs in Essex and Hertfordshire, but particularly the former, that would have stood well by the side of the sporting chronicles of either Leicestershire, Northamptonshire, or Warwickshire. In soft and dry soils, the fox excavates the ground by digging after the manner of a dog to a convenient depth; and further, to insure his safety, he often contrives to sink his kennel under a high and hard bank, where roots of trees, or other protecting matters, assist in secreting him. It would appear that he sometimes kennels himself in the ready made lodging of the badger, who, it is said, he dispossesses by voiding his urine therein; but we are not vouchers for the truth of the assertion. Certain it is that he is artful enough in catering for his own convenience, and for his subsistence also; but we opine that he usually makes his own kennel, taking the advantage of light ground, yet sufficiently tenacious to prevent its falling in. He has been found lodged in an old drain, which had been long dried up.

1595. *The predacity of the fox knows no bounds, and his wily nature assists his bloody purposes.* It is thus that he frequents coverts which are near to farm-yards, or other country habitations, where it is fancifully supposed he listens to the cries of the poultry with a malicious intensity. At night he warily steals forth, harkening, as may be supposed, to every sound, particularly as he approaches a farm-yard, which having entered, he puts to death all he can get within his grasp; "and his first care," says Mr. Daniel, "is to secure what he has killed, and then he retires softly with his prey, which he either hides, by digging holes and carefully covering each with earth, to secrete the booty and prevent discovery, or carries it off to his kennel; from which, if it be near, he in a few minutes returns for another, and conceals it in the same manner, but in a different spot: he also discovers the nests of pheasants and partridges, kills the birds on their nests, and then sucks the eggs." (P. 266.) But of all the prey of the fox, he prefers the rabbit; and thus it is that the billeting of a fox almost invariably presents the pluck of the rabbit mixed therewith. Hence gamekeepers, who being usually allowed the rabbits as their perquisite, are inveterate foes to foxes, not on account of their destruction of pheasants, which it is probable is very trifling, particularly where rabbits are allowed to abound, but on account of the rabbits lost by them. The voice of the fox is heard in sounds somewhat between a bark and a whine, which is changed to a sort of yelp when he is clicketing. In summer he is seldom heard, and in his expiring tortures he maintains an obstinate silence, and to the last shows a determined resistance. As an instance of contempt of pain, he is said, when caught by the leg in a trap, to have freed himself by gnawing through the limb.

1596. *Foxes, like all other animals, vary in their powers.* As far as our own observation goes, one of middle age and darkened coat, drawn long and fine by lengthy prowlings, is the most certain of showing sport, both in speed and duration. Stub-bred foxes, as already noticed, often afford excellent runs also, and will live before hounds at their best pace for an hour and twenty minutes. A long bodied fox of mature age is nearly equal in speed to a foxhound; and were such a one coursed with almost any single hound, we would bet on the fox even in the open ground. Colonel Cook lauds the foxes on the Roothings of Essex, as remarkable for speed and durability; and among many instances he particularises one which ran at the top of hound speed in the open country, without a check, for fifty-five minutes. He also notices the Hampstead hounds (termed the Invincibles), as having had the most extraordinary run from Great Hayles, a covert near Saffron Walden, belonging to Lord Braybrook, to within four or five miles of Bury St. Edmond's in Suffolk, near Glemsford earth, where they killed him. "I should think," he says, "the distance was twenty-five miles at least, as the crow flies." (P. 61.) We can also vouch for the stoutness of the Essex foxes, and we have been present there as well as in Hertfordshire, at some of the best runs we ever experienced in any country. In our early days we were much attached to buck hunting, which was by no means unfrequent in Sussex. But the flower of Sussex hounds at the time we allude to, were the harrier packs. Lewes and its immediate neighbourhood alone sported three packs.

Subsect. 3. *The Supply and Preservation of Foxes.*

1597. *To recruit the waste of foxes* they are sometimes imported from the Continent, but the foreign fox does not show equal sport with our own. It has also been proposed to procure them from Scotland, and the northern foxes would probably prove game ones, and could be very well spared from thence: indeed, any method of procuration would be preferable to the illicit traffic now kept up; when nothing is more common than the foxes of one county being caught and sold to the hunts of another. This robbery is particularly practised with cubs, which are dug out of their earths and brought up by hand, until a customer is found for them. Hunting four or five days a week even would not beget a scarcity in any locality where the coverts were extensive, if no other means of destruction were employed but those of fair hunting. Notwithstanding the occular demonstration we have, that in some manors foxes, hares, and pheasants, are found in equal plenty, the prepossession against reynard is apt to remain; and a vulpecidal tendency is great among the majority of the owners of extensive domains, where the winged game in general, but particularly where the strict preservation of pheasants, is a paramount object. It is in vain the fox hunter pleads that the fox is not so extensive a depredator as he is painted, and that winged game, particularly perchers, are out of his reach at night. For it will be argued, on the other hand, that the pheasant as well as the partridge hatches on the ground; and that both brood their young ones there, during which process each lies so close as to be easily taken; and that, should the mother herself escape the pounce of this wily foe, her eggs or her young are sure to fall a sacrifice. If even the liberal minded owner prefer to give up some of his table game, his daily sport, and his annual grand battue to the obnoxious character of a vulpecide, still his keepers will be privately leagued against him. Interest, the grand motive power of all our actions, will always prompt them covertly to destroy the foxes. Although shooting and hunting, it may be supposed, do not flourish well together, but that to enjoy them in perfection different localities must be occupied, yet we think a drawn battle may advantageously be made between the sporting belligerents. If gorse coverts were established in ground favourable for the burrowing of rabbits, foxes would supply themselves from this source without molesting either pheasants, partridges, or hares, in the immediate vicinity, so partial are they, as already observed on, to the flesh of the rabbit. When the nature of the soil, or the exposure to floods or moisture is unfavourable to burrowing, very wide and high raised hedge-row inclosures may be advantageously planted with gorse, which will answer the double purpose of protecting foxes, and furnishing shelter for the rabbits.

1598. *Of all covers or coverts,* the gorse or furze, as some call it, is the best preventive against the stealing of foxes, which is alone a sufficient reason that such plantations should be encouraged. Artificial covers are likewise made for both purposes, by means of faggots set up endways at certain distances from each other, or by plashing down live black thorn stakes, around which vegetable accumulations take place, that are soon converted into burrows for rabbits, as well as shelter for the foxes. Unfortunately, however, where the rabbits are considered the perquisite of the gamekeeper, that circumstance will in all probability tend to frustrate the scheme without much care be taken. This custom of *coney*

To face p. 451.

THE HUNTSMAN'S FRIENDS.

tribute should undoubtedly be broken through by every great owner of game preserves in the vicinity of foxhounds, who would be thought favourable to fox hunting. To the strict preservation of foxes, it is necessary that an interest in their welfare should be encouraged in all around them. The owners of manors, therefore, besides peremptorily forbidding the destruction of foxes, should allow a sum to their keepers in lieu of, and more than equal to, that made by the rabbits. The masters of hounds, also, should conciliate the keepers around by a suitable annual present, sufficient to cover all the real and imaginary losses of game by the foxes. The good will of the farmers, likewise, whose grounds are traversed, should be sedulously sought for with a marked avoidance of doing any wanton or careless injury to their crops, fences, &c. Their forbearance from all hostility against foxes may often be insured, and even converted into open acts of assistance, by a little flattering and suitable attention to them and the members of their families. "The grey mare is often the better horse;" and even the foxes may owe their lives to the pleadings of the wives and daughters of this valuable class of persons. An alleged loss in the poultry can be made good by a suitable present; and we have known the dame, who had promised her men five shillings each to destroy a fox that she suspected took liberties with her chickens, the very next season employ herself in bringing up by hand a litter of cubs begged from a distant farm, purposely to oblige "the dear civil gentleman of the * * * * hunt, who had sent her such a beautiful set of china to make good her losses in poultry." We suspect also that it is very impolitic on the part of the masters of foxhounds, to set their faces openly against any neighbouring pack of harriers: it is much more easy for the master of the hare pack to interfere with the sport of the fox hunter, than for the fox hunter to injure that of the hare pack.

1599. *The scarcity of foxes* is often to be attributed to the owners of packs themselves, who allow a wanton destruction of them to gratify their own or their huntsman's vanity, in an extravagant display of their fronts, pads, &c. When hunting is protracted to the middle, or even latter end of April, how many bitch foxes, with young ones in them, must be destroyed; for one decidedly *heavy* cannot stand up before the hounds long. Beckford mentions having one morning killed a bitch fox with seven young ones in her: now, to avoid such cruel havoc, it should be an established and general rule, that no country be hunted later than February; and even where foxes are known to abound, all fox hunting should cease before the middle of March.

1600. *Domestic rearing of foxes* is often resorted to in order to replenish the waste, which either fair hunting, or foul play, may occasion. In such case it is recommended to procure litters from any source where it can be honourably done; and from such only fox hunting is an aristocratic sport, *ergo*, every fox hunter should be a gentleman, *i. e.* he should eschew every covert act. In some cases there may be a preponderating proportion of foxes on the extremities, or on some particular parts of your own country, where the fixture is more seldom made. From hence some litters may be gained, which must be carefully removed, and confined in a convenient apartment, and well fed with milk, meat, and water, until arrived to a size and strength sufficient to resist the attacks of weasels, polecats, &c. Having fixed on some situation where no wild litter is near, and indeed where there is no fox hunt haunt, if no natural earth be at hand, sink a kennel in the ground where it will be dry, sheltered, and concealed by brushwood: or, otherwise, if the situation be moist, instead of an under ground retreat, employ a dry drain: or, otherwise, with roots, &c. make a kennel above ground, after the manner of the stub-bred foxes. Into the kennel, however it may be formed, force the young cubs one by one, and let them be kept there by watching; and whenever one makes its appearance, let a man or boy with a dog bay it back, taking care to place, some way within the opening, sufficient food and water. The food should be supplied from the wild birds, rabbits, &c. &c. near at hand, and then the shots which procure the food will be useful in alarming the young fox tenants, and teach them to stay at home until large enough to shift for themselves. Mr. Beckford, on the same subject remarks, "Where rabbits are plentiful, nature will soon teach the fox cubs how to catch the young ones; and, till that period of abundance arrives, it may be necessary to provide food for them. Where game is scarce, wet weather will be most favourable to them: they can then live on beetles, chaffers, worms, &c. which they will find great plenty of. I think the morning is the best time to turn them out: if turned out in the evening, they will be more likely to ramble; but if turned out early, and fed on the earth, I think there is little doubt of their remaining there. I also recommend to you to turn them into large covers and strong earths: out of small earths they are more liable to be stolen, and from small covers they are more likely to wander away. Your gamekeepers, at this time of the year having little else to do, may feed and take care of them; but when you stop any of these earths, remember to have them opened again, as I have reason to think I lost some young foxes one year by not doing it. For your own satisfaction, put a private mark on every fox which you turn out, that you may know him again."

1601. *A fox court* is also recommended by Mr. Beckford for the rearing of cubs until large enough to take care of themselves. "It ought," he says, "to be open at the top and walled in. I need not tell you that it must be every way well secured, and particularly the floor of it, which must be either bricked or paved. A few boards fitted to the corners will also be of use to shelter and to hide them: foxes so reared ought to be kept very clean, and have plenty of fresh water: birds and rabbits are their best food: horseflesh might give them the mange, for they are subject to this disorder." In kennelling your cubs take care that there be no inhabited fox earth near; and remember that the dog fox will assist in bringing up a litter of a vixen he has himself lined, but he will destroy others. More particularly avoid placing cubs within the reach of a wet vixen, as she will assuredly seek them out, and destroy every one, as is very natural for her to do, that she may insure more plenty for her own progeny.

Subsect. 4. *Coverts, Earths, and Earth stopping.*

1602. *The cover, or covert, is the chosen resort of the fox for kennelling;* and such as lie high and dry are seldom without one or more, particularly if the underwood be thick and plenty. During the nutting season, and as long as pheasant shooting lasts, foxes retreat to the furze, or gorse, if it is to be met with; and he sometimes kennels in thick hedge-rows, and this he often does when he has an earth for a nightly retreat. Fox earths are in the greatest plenty in retired spots, where the soil is light, and neither exposed to observation, nor likely to be overflowed. He will also breed, as we have already observed, under roots of trees and under stack wood: he is likewise sometimes found harboured in a drain, long since unused for a water course. Fox covers, we again repeat, should always be well supplied with rabbits, and when these gentry of the fluck are not already there, some should be turned down, and every means taken to insure their increase and preservation from ferreting, and other poaching practices. When rabbits abound, the young lambs and the poultry are little disturbed, and consequently the hostility among the farmers towards foxes likewise receives a check; the foxes themselves are also near, and such covers always present a sure find. "A superabundance of earths, however," Colonel Cook remarks, "are injurious to sport; and whenever they increase beyond what are necessary for breeding, they should be dug out." He also recommends that, "When from the size of a cover the foxes hang in it, it should be hunted often; and farther, that a fox should be killed in the middle of it, and given to the dogs, which will commonly have the effect of preventing other foxes from hanging there for a long time. But," as observed by the Colonel, "this would be a very bad practice in small covers, and it certainly would be equally so where foxes were not accustomed to hang; in fact, the experiment is a dangerous one any where. Necessary as coverts are to the breeding of foxes, and affording the opportunity of finding them, yet when they are too numerous, they sadly interfere with sport, at least with that which is the true fox hunter's sport, *i. e.* a long run. It is the distance from one covert to another, that makes Leicestershire so admired as a hunting country.

1603. *Artificial coverts.* It may possibly be thought that this subject has already received sufficient attention. But what has been stated was too intimately connected with the supply and preservation of foxes, to be entirely passed over there. Our present notices will be confined to coverts, earths, and earth stopping, as distinct subjects; and we lament that our limits will not permit us to dwell more on them, as they form most important features in fox hunting. As too many covers teaze the ardent fox hunter, so too few mar his joys by presenting foxes only, "few and far between," for the want of shelter. To remedy this, artificial covers are often formed of gorse, or broom, or of both gorse and broom intermixed, though a prejudice, we believe, exists with some against broom for covers, as being inimical to scent, which we cannot by any means agree with. To form a gorse covert, it is necessary to be very particular in the purchase of the seed, as very often it is any thing but good. Dig and trench the ground well, and having sown the seeds watch their appearance, and, as they rise, keep them free from weeds. In fact, a gorse plantation should be kept as clean as any flower bed; and by so doing, in a moderate time, as two or three years, a covert will spring up that will shelter foxes in plenty. It will be fortunate if the land is favourable to the breeding of rabbits, in which case stock it with them, which will be an additional inducement to foxes to harbour there. But, as a gorse covert is not to be reared in a few weeks, and some soils are unfavourable to its growth, Mr. Cradock's substitute, as related by Nimrod in his *Sporting Tours*, is worthy of notice:— "A piece of dry land lying well to the sun, and from two to three acres in extent, should be fixed upon. Here some very strong black thorns are stuck into the ground, and plashed, and laid down within about two feet of the surface. In a very short time, if the land is strong, the thorns will be almost hidden by grass and weeds, and the foxes will make their runs and kennels under them. In a covert of this description, which I made on my own land, the thorns were hidden in little more than two months." (P. 253.) This kind of cover can however be only a make-shift; and, as remarked on by Mr. Apperley, is not only very difficult to draw, but in other respects is very inferior to one of nature's making. It has however one advantage, which the gorse cover has not, which is, a capability of resisting snow, and is not therefore liable to be deserted on that account. Coverts are preserved, as regards their foxes, by right of property, by right of land leasing, and by courtesy; on all which matters Colonel Cook has treated very ably, and to his work we would refer for further information.

1604. *Earth stopping* (*fig.* 233.) is a most necessary preliminary to a fox hunt, and we hardly need state that it is a nocturnal operation, by which the foxes, out on a prowling expedition for the destruction of game and poultry, become shut out from their subterranean lodging by having their *earths*, as they are called, stopped up. An earth stopper is usually attached to every fox hunting establishment, and it is his business, in the night which precedes the hunt, to stop up the various earths by means of thorn or furze-bushes, so intermixed with earth, as to prevent the hunted fox from running to ground (see *fig.* 233.). In the *hollow countries*, as they are called, where fox earths are very numerous, several hands are required for the purpose: in Northamptonshire, for instance, the earth stopping of a single hunt has cost 200*l.* per annum. It is of the utmost importance, however, that all the earths be unstopped as soon as the chase is over, as the foxes would otherwise be deprived of their natural kennel, and in seeking another they may be lost to that hunt. The earth stopper attached to a fox hunting establishment is often an old huntsman, whipper-in, or groom past his riding day; such was Farebrother, who has been depicted with his hobby, his terriers, lantern, and earthing utensils. Colonel Cook with much judgment recommends that earth stopping should not be contracted for by the year, as is sometimes the case, but rather that it should be paid for each time it is done. By the former method some earths are apt to be left open, and the sport therefore spoiled; while others are neglected to be done as it should be done : but to insure its being performed well, send a trusty servant round now and then to examine; which method, when known, will make surety double. It is well observed on this subject by Mr. Smith, that, "It is difficult to insure the stopping of earths, without extreme vigilance, on a cold frosty morning, it being evident that, without some great stimulus, it is not easy for the stopper to persuade himself to rise and leave the warm clay by his side to stop the cold earth a mile off." He also hints at another important chance in these cases, which is, that even should the earth stopper (in fear of the looker sent out) actually do as he professes, *i. e.* stop the earths before it is light, — at what hour is it done? They may certainly be stopped before it is actually light, by doing it at six or half-past; but in such case, is it very likely that the fox, who was probably on the prowl at eight or nine in the evening, should remain unearthed until daybreak? It is not; on the contrary he retires, in all probability, as early as two, three, or four o'clock, according to his success or his fatigue; and such being the case, the lazy *stopper* arriving at five or six, effectually *stops* the fox *within* the earth, instead of *stopping him out*, as he is employed to do. The ingenuity of Mr. Smith, therefore, devises the following method to meet this defalcation of the stopper. In October he has strips of paper dipped in melted brimstone, placed in each hole of the fox earth, and set on fire; or, otherwise, gas tar is rubbed against the sides of the earth, the stench of which, equally with the brimstone, will prevent the entrance of reynard. Three or four days are now allowed to elapse, when all these holes, or fox earthings, are effectually stopped out by faggots and strong stakes; but this is not done until three or four days after the brimstone operation, because, as it is by no means impossible that in some one or more of the earths a fox was already laid up, so were such earth, or earths, to be either directly before, or directly afterwards, effectually closed up, the fox must perish, but being left open for three days, his hunger would lead him to come out in spite of the smell of the sulphur. These earths, when effectively stopped up, are not opened until the spring, that is, about the last week in February, which will be time enough for the vixens to return to lay up their cubs in. Mr. Smith, it seems, is so strict in following up this practice, that he deducts half a crown from the earth stopper's pay whenever a hole is found open; and on consideration, it must be evident that this plan is much in favour of the stopper, who is thereby prevented the necessity of being out in all weathers, and in such unseasonable hours. Our limits forbid our entering on this matter further here, but we strongly recommend a reference to Mr. Smith's excellent work itself, which presents a very full detail of the important subject of earth stopping under new lights and more effective practices.

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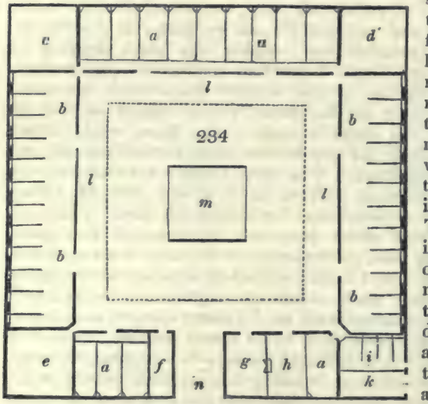
EARTH STOPPING.

Sect. II. *The Hunter and Riding to Hounds.*

1605. *As the good hunter requires good treatment,* and the humane sportsman delights to give it him, we will commence this subject by offering to the reader's notice the plan of the Billesdon hunting stables, erected by Lord Suffield for his hunters. They appear to have been built from designs furnished by Thomas Smith, Esq., late master of the Craven hounds, to whom also the noble lord was indebted for the plan of the kennel of the Quorn hounds, figured and described at p. 416. Though most of these erections have long passed from the purpose for which they were built, the plans still remain as useful as ever, and are retained in our work for the convenience of gentlemen meditating similar ones. To them we would also recommend a very elegantly got up work, called *Sporting Architecture*, by the late Mr. George Tattersall, published by Mr. Ackermann, of Regent-street.

Subsect. 1. *Plan and Description of Billesdon New Hunting Stables.*

1606. *The Billesdon stables (fig.* 234.) are built to accommodate forty-one horses; *a a a a* mark thirteen boxes, nine feet by fourteen, and four feet behind, twelve feet high. Of stalls there are twenty-four (*b b b b*), six feet two inches by eighteen feet deep, twelve feet high; *i* four stalls for hacks; *k* coach-house behind; *c* for hay; *d* for straw; *e* granary; *f* forge; *g* saddle-room; *h* cleaning-room; *l l l* covered ride; *m* manure; *n* entrance to the stables, and one room over for men. In proof of the judicious arrangements which mark these stables, it is only necessary to attend to Mr. Smith's explanatory notices in his work concerning their several parts. The mangers, we may observe, are divided into two parts, one to hold the corn and the other the hay; that intended for corn does not reach the wall by more than half a foot, that which receives the hay, on the contrary, does extend to the wall, and is bottomed with a grating which lets the hay seeds, dust, &c. through. Query, Would not a drawer here, as well as in some other stables, be an acquisition? It is not likely but that the owner of such an establishment has grazing land in the neighbourhood, which would be benefited by this saving of the seeds. One great advantage attends the hay manger, which is, that by it a great saving of hay is made, which, under so large an expenditure of it, is of some consequence. It seems that the general width of the stables is eighteen feet, and the boxes, taking up fourteen feet, leaves four feet of passage room around the inner area. It is, however, so judiciously ordered, that by means of the doors of the boxes, the whole of the space, that is, eighteen feet, can be thrown into each box, which, in cases of sickness, particularly such as require much ventilation, or such lamenesses as may call for a little motion, without much exertion, this extension would be beneficial. This plan also allows of a covered ride within the area of considerable extent, the advantages of which, in wet weather and in intense frosts, are great, and its width allowing of two horses abreast saves trouble, and makes it cheerful to both horses and attendants. Of the benefits of having a forge on the premises we need not dilate, it saves the horses from colds taken while waiting in the unclosed forges of the blacksmiths, and prevents the ill usage which frequently ruins the temper of the best horses; and the absence of servants, likewise, on these gossiping expeditions is avoided. Under these showings, we cannot but recommend these plans of both kennel and stable to the pack master; but to do them justice, we again state that recourse should be had to Mr. Smith's own figures and descriptions, where the size of the plan of these buildings exhibits the scheme of them to much greater advantage than our pigmy figures can do, which may be considered as inductive only, and intended to stimulate the reader to look further into this matter by referring to the fountain head — Mr. Smith's *Diary of a Huntsman*. We have entered at length into an account of the stable and stable management generally in our racing department; to which we would, therefore, refer the inquirer for further information on this subject.



BILLESDON STABLES.

1607. *Of the form of the hunter,* and of the mechanical action which results from certain proportions of his body, we have already treated in our detail of the *Conformation of the Horse*, p. 260. We shall therefore do little more here than offer the opinions of others on these important points: nor need the sportsman be reminded of the change which the last half century has produced, in the form and properties of the hunter. This change is spiritedly and justly portrayed by Mr. Apperley (Nimrod) in a celebrated sporting article in the

Quarterly Review for March, 1832, as follows: — "In the horse, called the hunter, a great change has taken place. The half-bred horse of the early part of the last century, was, when highly broken to his work, a delightful animal to ride, in many respects more accomplished as a hunter, than the generality of those of the present day. When in his best form, he was a truly shaped and powerful animal (*fig.* 235.), possessing prodigious strength, with a fine commanding frame, considerable length of neck, a slight curve in his crest, which was always high and firm, and the head beautifully put on. Possessing these advantages, in addition to very great pains taken with his mouth in the bitting, and an excellent education in the school or at the bar, he was what is termed a complete snaffle-bridle horse, and a standing as well as a flying leaper. Held well in hand — his rider standing up in the stirrups, holding him fast by the head, making the best of, and being able to pick or choose, his ground — such a horse would continue a chase of some hours' duration, at the pace he was called upon to go, taking his fences well and safely to the last; and he would frequently command the then large sum of 100 guineas. But all these accomplishments would never have enabled a horse of this description to carry the *modern sportsman*, who rides well up to *modern foxhounds*, on a good scenting day, over one of our best hunting countries. His wind would be spent, and his strength exhausted before he had gone twenty minutes by the increased pace at which he must be called upon to travel, but to which his breeding would be quite unequal; and his true symmetry, his perfect fencing, his fine mouth, and all his other *points*, would prove of very little avail. If ridden close to the hounds, he would be powerless and dangerous before he had gone across half a dozen Leicestershire inclosures. The increased pace of hounds, and that of the horses that follow them, have an intimate connection with each other, if not with the march of intellect. Were not the hounds of our day to go so fast as they do, they would not be able to keep clear of the crowd of riders who are now mounted on horses nearly equal to the racing pace. On the other hand, as the speed of hounds has so much increased, unless their followers ride *speedy*, and, for the most part, *thorough-bred* horses, they cannot see out a run of any continuance, if the scent lies well. True it is, that at the present time, every Leicestershire hunter is not thorough-bred; but what is termed the cocktail, or half-bred horse of this day, is a very different animal from that of a hundred years back. In those days, a cross between the thorough-bred, or perhaps *not quite thorough-bred*, horse, and the common draught mare, was considered good enough to produce hunters equal to the speed of the hounds then used. There was not such an abundance of what may be termed the intermediate variety of the horse in the country — 'pretty well bred on each side the head' — which has of late years been in demand for the fast coaches of England, in which low-bred horses have no chance to live. Mares of this variety, put to thorough-bred stallions, and

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STRONG HUNTER

their produce crossed with pure blood, create the sort of animal that comes now under the denomination of the half-bred English hunter, or cocktail." (P. 220, 221.)

1608. *Colonel Cook advocates* the use of thorough-bred horses only as hunters. "Many fox hunters," he says, "prefer thorough-bred horses, others cocktails; I always gave the preference to the former, if it was possible to get them. It is the general opinion, that thorough-bred horses cannot leap so well as 'cocktails:' I think otherwise; and if you will try the experiment, by taking ten young horses of the former, and ten of the latter sort, I am convinced you will find the thorough-bred ones to have the advantage, and naturally to clear their fences with more ease to themselves. Horses that have been in training for years cannot be expected to make hunters; but, nevertheless, what superiority has a thorough-bred one in every respect—above all, in speed, bottom, and wind? It often happens, when a cocktail is at the height of his speed, a thorough-bred horse is only at three-quarters, and the latter will always go through dirt (as the term is) best." (*Observations on Fox Hunting*, p. 87.) Fashion reigns omnipotent; hence it is that the crack sportsmen of the present day, who follow the fox pack, will most of them tolerate nothing under full blood. Were racers now bred, as they were formerly, to run long lengths, then indeed we should be equally strenuous that none but thorough-bred horses should be used among fox hunters; but the lathy three and four-year-old blood-horses now brought to the starting-post, are not calculated to carry ten, eleven, or twelve stone over a heavy country, for a seven or eight miles' burst, at almost racing speed, with no check but leapings of extreme height and vast width.

1609. *Well-bred horses, without doubt, make the best hunters;* but may it not be asked, whether the present prejudice in favour of blood may not carry us rather too far, when it confines us to thorough-bred hunters only? Few persons can be more favourable to the blood breeds than ourselves. But we are not without our suspicions that the action which necessarily results from the true racing form, is neither so safe, nor so well adapted to field service, as a breed with a little more substance, and with rather higher action than is common with very many full-bred horses. Our own hunter should be chosen from among the very best of those called *cocktails,* with at least four-fifths of blood in them, the other fifth being wholly bone and muscle, particularly the former: we would, in fact, have him fashioned something after *fig.* 236., which represents a good powerful well-bred hunter taking a stone wall in good style. A thorough-bred horse is rarely met with that can carry fourteen stone to hounds. A horse so qualified would command 400 or 500 guineas, or more, if, in addition to his size and strength, he also proved a high and safe leaper. Taking, however, many of the blood breed of the present day, what way, we may ask, can the light frame of such lathy, leggy animals make in a heavy country, where at

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BLOOD HUNTER.

every stroke their contracted hoofs sink into the adhesive mire beyond the fetlocks? If such a horse has been trained in racing stables, his action in that case is the reverse of what is required of the hunter; for the very purport of such training is to teach him to bear on the hand, and to steal *along* the ground rather than *over it.* Instead, also, of carrying his rider with a gallant bearing as he should do as a hunter, he is himself carried by such rider, and seeking support from his hand, he requires to be lifted over every inequality. It is, however, probable, that, in a series of years, horses of full blood may be bred of the required bone and substance, but it must be a work of time to make it general; and it is further unlikely to happen, so long as racing remains at once a trade, a lottery, and a gambling speculation; and certainly not while the early years, nay, even the colt-hood, of our best breeds is employed in contending for the greatest prizes. We cannot deny that the training which the thorough-bred horse can bear, insures such wind and such condition as would almost defy the hardest burst to blow, or the longest run to knock up; but these valuable desiderata must usually be confined to riders of nine or ten stone only, leaving all the welter weights far in the rear. Now, as these are many of them men as weighty in purse and influence as in flesh, fox hunting would receive a fatal check were we to ride entirely away from them. Again, speed and duration also, could the latter be insured to the thorough-bred horse, would do little without *fencing;* and how ill the rearing and training of thorough-bred colts agrees with an early habit of leaping, the breeders well know. Reared in paddocks, too well secured to offer any practice of this kind, unless the training boys should try the powers of the colts over a two-foot wide ditch, or two-foot high fence, they might each reach the winning-post in many a race without even being practically aware that such motive power as that of saltation existed in them.

1610. *When a young thorough-bred horse has been found not fast enough for racing*, it is then that he is usually brought to the covert, but it is under disadvantageous circumstances. The horses' habits are fixed, and the paces also; trotting is far from being familiar to race-horses in their training exercises; on the contrary, it would incur a forfeit from the training groom to indulge one of them in it for half a mile; and good fencing we well know is difficult to force on horses at these advanced periods. The bleak north-easter at a check, the black thorn hedge when creeped through, and the swollen brook when forded, make sad havoc with the fine coats. Blood, we repeat, is most desirable; but it cannot be denied that excellent hunters are occasionally found even among the half-breds, and many more among the three-parts-bred. Were it a fact that none but very well-bred horses ever proved good hunters, we should not argue thus. But every season's experience shows us extraordinary instances of cross-made and cross-bred horses performing wonders in the field. Mr. Johnson, in his *Sporting Dictionary*, cites some extraordinary instances of small and cross-bred horses proving trumps in the field. Height is less essential to a hunter than substance, although, when height and substance can be obtained without grossness, it is most desirable, particularly to either the heavy or the tall rider.

1611. *Mares are rejected by many as hunters*, but we cannot omit this opportunity to allude to it as an unjust prejudice. Mr. Apperley has added his more powerful weight of argument to the same subject, and instances the extraordinary feats on the road performed by mares. This prejudice greatly injures the horse breeding concern, and while it increases the price of good hunters, to a demonstration it reduces the chance of obtaining them by one half. Some mares in the spring, it is true, are irritable, and somewhat weakened by their *heats;* but many others are little affected by this state. It is also to be recollected, that so long as geldings are principally used for the saddle, however excellent your hunter may prove, you have no means of perpetuating his excellences in his progeny; whereas, so long as the adage, "that like begets like," holds, they may be multiplied and even perpetuated by means of the mare. We may also observe, that it may yet become fashionable to ride stallions in the hunting field as well as mares; nor do we see less reason for adopting this French custom, than the rational one of abandoning the bearing-rein among carriage-horses.

1612. *The height of a hunter*, like his breed and figure, varies in the opinions of different persons; few, however, would choose one much higher than sixteen hands, nor would many select one by choice under fifteen hands two inches. Our best authorities acknowledge these limits, but they also with judgment recommend that you buy when you can (without a slavish adherence to any fixed measurement) one that has a well-placed head, a good bridle neck, withers high, shoulders deep and oblique, arms muscular, broad and low placed knee, deep girthing place, loins and fillets good, haunch blood-like, thighs wide and muscular, hocks broad, and, like the knee, low placed in the limb. We believe it was Lord Barrymore, who, at Newmarket, among a vast crowd of the sporting world, mounted himself on a chair, and having made a signal for silence, said aloud, "Who wants a horse that can gallop twenty miles an hour, trot seventeen, and walk six?" Of course, vociferations of "I do, I do," were not wanting; to which the facetious nobleman replied, "Well, gentlemen, when I meet with such an one I will let you know." And now, gentle reader, without any propensity to quizzing, we recommend you, when you meet a horse or mare having the properties and proportions we have laid down, or even the majority of them, to buy him, let him be little or big.

1613. *In the selection of a hunter*, the nature of the country he is to be hunted over should somewhat influence the choice. Where a heavy deep soil predominates, presenting also a large portion of ploughed ground, intersected by wide and strong fences, like those of Essex and some of the midland counties; such localities will require a horse of sufficient height with much substance; while one of lighter build, and in height not exceeding fifteen hands and a half, is best adapted to a hilly country, as the Surrey Hills, the Sussex and Wiltshire Downs, the Cheviots, &c. &c.

1614. *The sportsman who rides a welter weight should always be "over-horsed."* It is imperative on him that he be mounted on one presenting a combination of power, activity, and durability. These are essential requisites to him, and when such a form is united with high breeding, the rider, spite of his weight, may hope to be in the *right place.* Some Irish horses are well adapted for the purpose of carrying heavy weights; and if they do not always go at a racing pace, their admirable fencing will tend to make up the deficiency. Neither are the Irish hunters of the present time defective in their breeding, as their local races and steeple chases will testify.

1615. *The methods of procuring hunters are of course various.* Many are passed from one gentleman to another in the different hunts, while more are purchased from the London and country horsedealers. The inexperienced hand will most readily suit himself at once by purchasing from among those horses he may see performing in any celebrated hunt. There is a pleasure in horse dealing, that makes almost every horse comeatable; and it is better for a novice to give a good price at once for a known good horse, than to be taken in two or three times with cheaper but indifferent ones. The enormous prices now given for hunters of character would almost call the grandfathers of some of the buyers out of the grave to stop the bargain. 500 guineas have been frequently paid, and in some instances even a larger sum has been given for a hunter; 200 and 300 guineas are common and every day prices. How vast the *hiatus* between both the value and the properties of the Melton courser, racing over the ground and flying over the fences which bound it, and the costermonger's barebones, half dragged and half kicked into a walk; while a brother of the same kidney exclaims, "Jem, vat do you keep sich a hanimal as that for? vy don't you do as I does, go to Smithfield, give 15*s.* and buy a right good-un at vonce, hay!"

1616. *The London as also the country horsedealers of respectability*, of course, furnish their stables with the best articles in their trade that they can get, and, in a general way, a beginner is much safer in dealing with one of them than with the more specious tribe of what are called "gentlemen dealers;" the difference in duelling times between them being said to have been, that a dealer at the worst only cheated his customer, whereas the gentleman dealer cheated him and shot him after if he mentioned it. Sam Slick's advice, never to buy a crack horse, for he will have done too much, is very treasureable.

1617. *Colonel Cook is favourable to purchasing at Tattersall's*, and says, "If you wish to give a large price for what is called a well known made hunter, from one cause or other, there are, every spring, some such valuable horses to be purchased at Tattersall's, which has been the rendezvous of sportsmen from time immemorial. It is a lounge three times a week, where you are sure to meet your friends, and can listen with pleasure to their reports of the achievements of the different packs of hounds the season past, and the arrangements for the future. Suppose you purchase half a dozen young horses, at a 100 guineas each, to carry fourteen stone; if two out of the six turn out well, you ought to be satisfied, as there is every probability of your selling the remaining four for 50 each, barring accidents." We ourselves are acquainted with several sporting characters, some of them owners of hounds, who make a point, towards the autumn, of buying such blood-like nags as are likely to suit their purpose from among those parted with by the Londoners and others, to avoid the expense and trouble of keeping through the winter. These are taken to the country, and, having been tried, the buyers select perhaps three out of five that will suit either themselves or others. The remainder they sell, probably by the same hammer, at 5*l.* or 10*l.* loss, still leaving the others decided bargains; and, if so inclined, it often happens that "obliging a friend" with one of the remaining three, at a "good figure," serves to pay for the whole lot.

1618. *Masters of hounds*, who have sufficient and extensive range both of paddock and stable, have many better opportunities of obtaining horses than by breeding them. Horse breeding, except on fancy occasions, or when it is done from some particular strain, where all the progeny turn up trumps, is a losing speculation to most gentlemen. If such an one should be a thorough judge of colts, a judgment by the bye that requires half a life and close attention into the bargain to gain, we repeat, if he be possessed of this judgment, he can use it to great advantage in selecting from the colts of the neighbouring breeders such as promise well. These being picked up as occasion offers, at three or four years old, having been already early handled, bitted, and backed, but not worked, are now to be trained and gradually conditioned and worked in turn, by the under attendants in the field, which soon enables the keen eye of the master to judge what will suit and what will not. The 40 or 50 guinea colt grows into a 200 guinea horse; and another, though rejected from the hunting stock, fetches 80, 90, or 100 guineas for a Brougham or chariot.

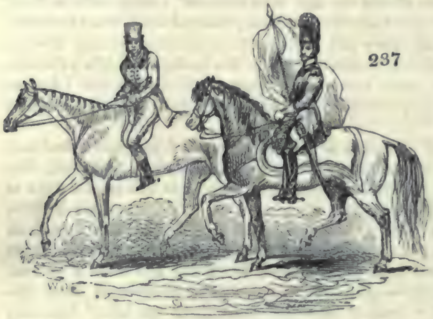
1619. *Country horsedealers can often supply promising young hunters*, particularly such dealers as live in the great breeding countries. Those also who reside in the immediate vicinity of great hunting establishments are often able to furnish their customers with well-bred hunters of known hunting qualifications. The great country collectors of horses in the northern districts, by whose means the London dealers are furnished, are however often shy of selling their most promising horses to private individuals, at even heavy prices. The London dealers feel hurt when this is done, and resent it also, as it injures them in two ways, first, by robbing them of their profit, and next, of their *swell* nags, as their customers would call them. The country dealers we allude to are also men of much note in their way; they are extensively connected, and are therefore well acquainted with the establishments of all the great breeders, from whence they get their most promising young horses, and which they buy principally for the London market. Some few horses of high promise, they however often know where to place near home at a higher price than the London dealers usually give; although they also, on particular occasions, will give from 100 to 150 guineas, or even more.

1620. *The hiring of hunters by the month or season is a common method*, and not a bad one where a party is either restricted to time, or has every thing to rent and buy at home. We do not allude to the collegiate hiring of hunters by the day, which is as old as the days or Hobson, whose steady determination that his horses should work in rotation, we believe gave rise to the phrase, "Hobson's choice," but to the letting of hunters by the month or season, as adopted by Messrs. Tilbury, Tollitt, and others. — Here the hirer takes them and keeps them in addition to the hire, and can, if he likes, be fitted out with a groom, warranted to be clean, clever, and obliging, — qualities much easier described than obtained. It was thus that the celebrated "Soapey Sponge" went forth on his "Sporting Tour," and his groom, Mr. Leather, is by no means a bad prototype of the class. With regard to the horses, it will not be unfair to say, that the season-hirer who goes early, will have the best chance of being well mounted, though good horses may undoubtedly be picked up in the course of the season that have finished their jobs. Still, to the lover or the animal there is nothing like riding his own horses; in addition to which, if a proficient in the saddle, or expert with the tongue, he may chance to sell them to advantage when done. A hack hunter is generally distinguishable by his rueful countenance, and the unmerciful way they get bucketed about, as if the riders were determined to have their change out of them. To foreigners who come to this country for a few months, and to mercantile and professional men, who can only spare a few weeks for hunting during a season, this mode of furnishing themselves with hunters is most convenient, and we believe it proves economical also. It possesses this great advantage, that no disappointment is likely to ensue, for some of these hunter-lending establishments are very large, and we have known all the servants' horses of hunting establishments jobbed by them.

Subsect. 2. *Riding to Hounds.*

1621. *Judgment, determination, and horsemanship*, are essentials in riding to hounds. Judgment is required in choosing the best track for the horse, and in keeping the points of a country in view for even two or three fields a head; and those who know a country well are able to seize probable advantages which it would be imprudent for others to attempt. This knowledge enables a rider to diverge from the line of the hounds in favour of better ground and a shorter course, particularly when, from experience, he is tolerably assured of the covert the fox is making for. In the counties around the metropolis, so divided and subdivided as the ground has been under feudal tenure, this knowledge is particularly desirable. How could Mr. Conyers, without this, make his way, as he has done for so long a period, over his Roothing and Dunmow countries, inclosed and fenced as they are by strong hedges and wide ditches, many of the latter being double also; for unless he knew almost every field, he must be pounded every time he went out. On the contrary, by knowing, to speak figuratively, every inch of ground he rides over, he is never entirely set; every palpable opening is familiar to him; and he seems *to smell a gap by instinct.* His knowledge of country is truly wonderful; every bye-lane, by which he can save a few acres of fallow, or avoid a stiff leap, is mapped in his recollection, and though commonly at hand at the finale, he has been met during a chase trotting along a private road out of sight and hearing also of his hounds, so good is his knowledge of the country, and of the habits of the Essex foxes.

1622. *Determination is essential to good riding*, and the really nervous man should never attempt fox hunting. If he do not find that the first challenge of a hound dissipates every timid emotion, and every thought of consequences, *ante tubam trepidat*, he may be assured that he is out of place, and had better return home at once. The slow southern harrier will best suit his cool temperament; or should he screw himself up to the sticking point in a canter, with a lapdog beagle, even in the face of the risk of his hunter being lost in a ditch and the hound drowned in a cart-rut, yet he may sport the brave and exclaim, *Audaces fortuna juvat, timidosque repellit.* On the other hand, a foolish recklessness of danger can only be excused in the man who knows his life is of little worth to himself, and perhaps of none to those he leaves behind him. Of this fool hardiness, an instance offers itself in the conduct of the whipper-in noticed by Nimrod, who was seen going along at a *slapping pace*, over ground studded with large ant hills, with his horse's head loose, his hands being busily employed in putting a lash to his whip, and his mouth in holding a large open clasp-knife ! !



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MILITARY AND FIELD RIDING.

1623. *A good hunting seat* is also of the utmost importance to the safety as well as the pleasure of hunting, and much of the chance of being well up with the hounds depends on the seat and the hand of the rider. The hunting seat on horseback, and the manège or military seat, differ considerably. The body held erect and stiff, the lower extremities descending almost in a right line (*fig.* 237.), though essentials in military equitation, are wholly at variance with that adhesiveness which insures safety in the field, and that, like the ancient centaur, makes the horse and his rider one and almost indivisible, although both horse and rider appear equally at their ease. As in a hunter, certain proportions are desirable, so are they also in the rider, and these proportions should agree likewise. A very tall man fatigues his horse, particularly if he rides loose; a very short one, on the contrary, is in danger of falling from his horse at every unusual exertion, except he is on a very flat sided one, though such an one would certainly be very objectionable for all other riders. A short punchy man may derive some assistance, although accompanied with some risks, by riding on a saddle having both its pummel and cantle high. It is, therefore, the man of middle size that rides with most safety to himself and least fatigue to his horse. A very round thigh and thick calf afford very indifferent points of contact with the saddle, nor can the rider of this form set home in his fork so well as another; but he may bend his legs backward, which will somewhat remedy the defect (see *fig.* 237.). We having ourselves had a fair share of experience of both military and hunting seats on horseback, dare venture an assertion, that much as they differ in some points, yet that he who has been well grounded in military riding, has some advantage over the mere field rider, however good. A knowledge of each system of riding is beneficial to the practice of both, for circumstances will occur where each may borrow from the other with advantage. We must not, however, lead any one into so palpable an error as to suppose, that the military seat, or even the military *handling* of the mouth, can, under any but particular and momentary occasions, be substituted for the hunting seat and hand. It is, on the contrary, universally confessed that the loose balance seat, which is preserved by mere equipoise, with the heel dropped and the toe elevated to barely rest itself in the stirrup (*fig.* 237.), cannot with any propriety be used in riding across a country after hounds. The attempt only has proved fatal in several instances; and had Lord Arthur Paget ridden with a hunting seat, short stirrup leathers, with feet home in his stirrups, it is more than probable that the fatal accident he met with in Yorkshire would not have happened. It is a very general remark, that the mere military horseman and the *aufait* manège rider, never exhibit with advantage in the field, until they have by practice adopted the hunting seat, as we would call it, of perfect adaptation and of *close adherence to the saddle*, by means of the legs and thighs, which act to most advantage when the foot, pushed home into the stirrup, offers them a *point d'appui.* The above figures, intended to contrast the military and the hunting seats, we hope will further illustrate the subject.

1624. " *When hounds find and go away*," says Mr. Apperley, " place yourself well down in your saddle on your fork, or twist, and don't be standing up in your stirrups (as formerly was the fashion, and the cause of many a dislocated neck), sticking out your rump as if it did not belong to you. Let your knee be not very far from straight with your foot well out in front of it, and feeling in the stirrup as if it formed a sufficient fulcrum for your bodily strength to act upon, in the assistance your horse may require from you. Be assured that the military seat, with very long stirrup leathers, will not do here, however graceful it may appear on a parade. There must be a kind of *obstando* power in the rider, to act against the preponderance of his horse, particularly at what are called drop-leaps, in very deep ground, or in case of his making a blunder, or getting into false ground in his gallop. Having got well away with the pack, keep your head up, with your reins in the left hand, and your whip in your right, held perpendicularly upwards, with the thong falling loosely through your hand, when it will be ready for all purposes." (*Encyclopædia Britannica,* vol. xi. p. 614.)

1625. *A good bridle hand is a very great help to field riding,* and it is one of the first important acquirements towards becoming a horseman, that he should learn to use it lightly and yet firmly. Indeed, we consider a delicate and yet effective use of the snaffle bridle to be the *ne plus ultra* of field riding; but it is, nevertheless, that which many riders of good reputation never attain. This fault is particularly conspicuous among grooms, huntsmen, and whippers-in, who indulge in a constant dead pull at their horses. The numerous varieties, not only of the curb, but also of the snaffle bridle now in hunting use, are not more intended to suit the mouths of different horses, than to suit the different hands of riders. We are constrained to own that, although in our seat Englishmen are more varied and equally good with foreigners, yet few among us unite delicacy with firmness of hand as they do. Nevertheless, a naturally delicate mouth, and one further benefited by tuition, is as essential to the hunter as to the hackney; and on such a mouth, moderate pressure only is to be applied on all common occasions with a give and take play of the hand, which, instead of benumbing, keeps it alive, and prevents its becoming hard and insensible at such times as render a more firm bearing necessary for the supporting of the cool horse, and the restraining of the impetuous one.

1626. *The double bridle,* now so much used in hunting, requires great delicacy of touch in the rider; it must be allowed that, in a truly fine and practised hand, it becomes a great assistant in the field to some horses, particularly to the vicious and impetuous; it also greatly assists a horse by its offering the means of changing his centre, and the practised rider knows how much he can benefit the tired horse thereby. Likewise, by occasionally throwing him on his haunches by means of the curb, much is gained; for it relieves such muscles as have been principally engaged in operating the extended stroke. It likewise supports the willing but tired hunter in heavy grounds, as we can assert from experience; and it is particularly useful to him who may have to ride some miles to cover, with a chance of having to ride many more home again after the run is over, under which circumstance the curb bridle proves a great support, as well as relief to his horse. On one occasion we ourselves left Sir William Rowley's hounds, after a sharp run and a death in the Rothings, to make our way home to Tollesbury, which must have been, at least, fifteen or sixteen miles distant; we therefore write feelingly and advisedly on the advantages of a double bridle. It must however be observed, that the curb bridle, with these advantages in the fine hand of a master, is a most dangerous hunting appendage in any other. In leaping it is particularly so, if not used with great judgment.

1627. *The hunting saddle* should be strong but light, and well fitted; the pommel is usually low, and the cantle also, although we have seen cases where more elevation in these parts would have prevented accidents: on the whole, however, the dangers are counterbalanced by the advantages. Spring bars and spring stirrups are good likewise, as well to prevent the consequences of the stirrup catching the latches of gates, &c., as that it should not entangle the feet of the rider in case of a tumble. The stirrup itself we would recommend to be massive, whether it be of the spring or common kind; for when it is very light, it flies from the foot by the slightest touch, and is often difficult to regain, particularly when a horse is either fidgetty or is going rapidly along: indeed, we are convinced that the heavy stirrup has prevented many a fall.

1628. *Of the martingal* we observe, that when too long and hanging loosely about, it has occasioned serious accidents; but when buckled to the proper length, and its rings allowed to play loosely on the bridoon-rein, it is at the rider's will how far it acts on *the bit itself;* thus adjusted it can neither catch the feet, nor do other injury. Young raw horses are much benefited by the martingal; and the ill-placed head, the weak, long neck, and the star-gazer, are all instances where it may be used with advantage. But of all the appendages applied to the head of a horse, the nose martingal is in the hunting field the most dangerous. The breast-plate is sometimes required; a light-carcassed horse is not safe without it, for he may be very likely to slip through his saddle girths in leaping, creeping through a hedge, or mounting a hill. The running rein or martingal is sometimes useful to very hard pulling, star-gazing, or young horses; the ends of this are sometimes attached to the saddle, at others to the girths, as occasion may require: in using this care must be taken that the reins are not allowed to hang loose enough for a horse to put his foot over them: the rider, whose horse is so accoutred, must be always on his guard. Spurs are a very proper appendage to the personal appointments of a fox hunter, if used with judgment and humanity, and are at times useful in leaping either a tired or a sluggish horse.

1629. *In riding to hounds the alleged purpose by many is lost sight of,* and it might as well, on their parts, be called riding a steeple chase as a fox chase; in fact, the riding is the major, and the hunting the fox game a minor part only; and whether these gentry ride after the hounds, or before them, is of little consequence, so they get on *fast enough.* Such is their hurry, and such their utter indifference to all but rapid locomotion, that, were it not that no horse can live in chase with a high-bred pack of foxhounds, on a *holding* *scent*, the pack would suffer decimation every time it went out. For want of judgment, also, the zealous but inexperienced rider gets wrongly placed by endeavouring to mend his situation; whereas, by taking a different course, he would *in the end* be nearer his object, by being a little farther from it *in the outset*. How just is the following advice: — "You must neither take liberties with the hounds, nor with your horse; ride wide of, that is, on the left, or on the right, of the former, turning as you see them turn, and never finding yourself exactly behind them, or on their line; and no matter how perfect may be the latter, never trust him (the horse) to himself, or upset him by going too fast for him; or, in other words, *over-marking him* for that pace. However good his mouth, never ride him in chase with quite a slack rein; for, independently of your own safety, it is not giving him a fair chance." (*Encyclopædia Britannica*, p. 614.) In riding to hounds, Mr. Smith, in his *Diary of a Huntsman*, says, "One of the first things to acquire is an eye to the dogs, that is, in chase for the rider always to keep his eye on the leading hound, which he will easily distinguish from the pack by observing, that the moment the leading hound (or hounds, but generally only one) catches the scent, he drops his stern as straight as a tobacco-pipe, and the stern of the other hound which had it the moment before will rise. It often happens that several get it when the scent is pretty good, and, if so, it will be easier to see it; by observing this, he turns his horse's head as he sees the hounds turn, and gains a great advantage over those men who only look at the body of the pack, and who go beyond where it is necessary for their horses to go. A man with a good eye to hounds will beat others who have not, although much better mounted than himself, and at times save his horse much distance and deep ground. If men would pay attention to the cry of hounds when running in cover, instead of riding in to the end of the ride without listening, merely because when they started the hounds were going in that direction, they would save their horses much work, for on listening they would find that the hounds had turned in another direction. Nothing shows ignorance in the field so much as not getting out of the way when the huntsman is coming past with the hounds, particularly at a check in the road. Men appear to forget that they cannot hunt without the pack; but if it is in a road or in a cover, it is most necessary, or the hounds must break out of the road into the cover, and possibly cross the line of another fox, and bring back the rest of the pack, which the huntsman is getting on." (P. 87—90.) The following, from the same source, is worthy of booking: — "Men who are not acquainted with the grass countries, in particular where the fences consist of live quicks and thorns, will do well to notice when a hedge is cut which way it is laid down to the top, and put his horse at it obliquely, with his head from the root of the thorn, and the top of the thorn being weak will give way to the horse's legs: but if he goes straight against it, he stands a good chance of a fall; and if he goes obliquely, on the contrary plan, he reduces his fall to a certainty, should the horse not clear any strong plasher which rises when the horse's knees are under it — but not so the other way." (P. 91.) Mr. Smith is very severe on the wanton reckless rider who takes no notice when hounds throw up at a check, but, on the contrary, by his riding forces the dogs beyond the scent, or probably brings a host of others, as wild as himself, over the very spot where the hounds first threw up, thus destroying almost all chance of recovering the scent. Another very excellent hint he offers on riding in cover, which proves so dangerous to many horses, as we have very frequently witnessed, entirely from want of tact in the rider. The wooded covers in Essex are some of them very close, but we seldom avoided them, for, as Mr. Smith observes, provided a man has nerve enough to allow his horse to have his nose down to his knees, and to let him pick out his own way, he will seldom get stubbed. The young rider to hounds cannot be too strongly impressed with the advantage of riding on the inside, and not on the outside of the dogs; which Nimrod has very amusingly illustrated by the practice of hackney coachmen, who, if not scientifically, are at least practically, aware of the difference between the proportions of the diameter to the circumference of a circle, so as to purposely wend their devious tracks in such directions as to lose as little ground as possible. Avoid the untutored habit of pressing on hounds, for should a check occur, you may mar your own sport by riding headlong over the fleeting scent, if not over the hounds.

1630. *A quick horse as well as an expert rider is also necessary* to following hounds as they ought to be followed. It is not the fast horse nor the hurrying rider that sees most of the hounds; on the contrary, many such never see the death. The quick horse loses no time; he does not take half a minute to recover himself after his leap, nor does he require to be hauled half across a field before he can be pulled up; on the contrary, he fences quickly, and recovers his stroke immediately, when under the fine hand of a good rider, who in his fielding, as well as his fencing, alternately handles and gathers him up, letting him abroad again when a favourable opportunity occurs for exercising his powers to advantage. Thus, while profiting by his exertions, a judicious rider at the same time so husbands the resources of his horse as to spin them out to the termination of the longest chase. This desirable ending of a run will be still further insured, if, to the care of the horse, there be added a ready perception of the direction the hounds are taking, as well as of the best ground to go over, and the most practicable fences to cross. Avoid going directly crosswise over land that is highly ridged, where of course the furrows are deep in proportion; to do so would take too much out of your horse, and many a gallant beast has been brought to a direct stand-still by it, when taking a headland, a few hundred yards further distant, would have saved the mortification of waiting for *second wind*, which often comes too late when "heads up" and "sterns down" mark the career of the rapid and tongueless pack; your horse in such case will have much to do to live longer with them at this run.

1631. *Never over-mark your horse*, *i. e.* never seriously distress him; for although your hunting motto, like the battle motto of Buonaparte, should be Forward! Forward! it must be nevertheless remembered that the best horse may have done too much to obey the cry. No man can be called a good rider, or be possessed of horse knowledge, who cannot at once feel when this is the case; and no man deserves the name of a good *horse master*, who does not instantly shorten his stroke, or even pull up entirely if necessary. When the wind only has been expended, a single minute allowed is often sufficient to renew the respiring powers; one full inhalation gained by the respite aërates the blood anew, and the gallant beast, in sporting language, having got "second wind," again starts forward. Should the whole animal powers flag, a longer respite must be given, and the rider must then patiently wait, in hopes of a fault or a lucky check to bring him in; even should this not happen, he has saved his horse and his own character for humanity, and may very well bear a little rallying about lost shoes, &c. &c. The treatment of the overdone horse is fully described elsewhere. "It is the pace that kills," is in every one's mouth; but it is not sufficiently in every one's recollection, that the best horses even are over matched when running with high-bred foxhounds, goaded on to the top of their speed by a *streaming scent.* What is to be done? Ardour says, go along; Prudence says, take it more cooly. Oh, for another horse!

1632. *A second horse is certainly a great advantage to the sportsman*, more particularly so to the welter weight; but it requires a very trusty, as well as judicious servant, so to follow with the spare horse as not to take too much out of him. But as it is not every one that has either the means or convenience to allow of this luxury, so the more care is required to make the powers of one horse last out the run. It is only surprising that so many horses and so many riders are in at the death as are seen there, and even after severe runs too. Hard riding is now all the fashion, and where is the man that can now *set* a field of Meltonians. This itch for *keep moving* not only ruins many horses, but without doubt is subversive also of the true pleasures of the chase; or, at least, what ought to be considered so. The hounds being hurried onward, perhaps ridden over, none of their workings can be observed, which ought to be considered as the main object of the run. In this racing chase, the half-bred horse has but little chance; and even if well-bred, but out of condition, the only chance is, not to press him at first; on the contrary, it should be left to him to find his own rate of speed for ten or fifteen minutes, and so doing, he will gradually lengthen and quicken his stroke.

1633. *Hilly countries try the wind and durability of horses more than any others;* indeed here nothing but high breeding and condition in the horse, as well as good management on the part of the rider, can bring both in at the "who-whoop." The Sussex Downs and the Cheviots are, without a pun, *prominent* examples of trying countries. Fifty years ago the steep descent called the Devil's Dyke in Sussex, it was said, had been ridden down by a very few persons; the *on dit* was (but which we doubt) by three only, the writer being one of the number. Since this time the dyke has been ridden down every year, both with hounds and for the frolic's sake: nor is it either so difficult or appalling as was supposed, particularly with a horse used to the downs. The down hunters instinctively contract their four legs into a very small compass, and slip them, two at a time, in such a shuffling manner, and somewhat sidelong direction, as to beggar all description. When descending these or other precipitous hills, the rider, ere he arrives at the bottom, should gather up his horse immediately as he approaches the level, and give him a sidelong direction: if this be not done, it is not unusual for him to fall. His vision in going down has become so dim, that not perceiving he has reached the level, his feet catch the ground too soon, and throw him over. In general cases, a zig-zag direction is the safest that can be taken in ascending hills; but it is otherwise in the descent, where, except the inclination be equal to the side of a house, the straighter you go the better. Chalk hills are usually encumbered with flints; these the sportsman should look out for, and if possible avoid, as many a valuable horse has been ruined by a single cut from one. Riders on the sides of the downs are apt to use the tracks of sheep as riding paths; but these not being sufficiently wide, their horses slip off them, and either tumble or get bad strains.

1634. *A hunter fast and free in his trot is desirable*, especially in crossing ploughed lands or heavy fallows. We once possessed a well-bred bony hunter, fast and enduring in his gallop; but whenever he felt himself a little blown, and more particularly when he was under the necessity of shortening his stroke in his gallop, from the weight of ploughed land or the depth of poach ground, he invariably struck out into a rapid trot; and the moment he had passed this ground, he immediately resumed his gallop, evidently refreshed by the change of pace, making good the "old saw," that "change of work is play."

1635. *Be guarded against bogs* is a very necessary caution. In Ireland, in the New Forest, as well as in many other parts of England, there are bogs of a tremendous depth. When hunting in a wild country with which you are not well acquainted, choose a sheep path as a tract safe from bog. Wherever wheels have been is safe riding likewise; but do not let the freshness of verdure deceive you; and should a snipe be flushed, beware! Follow the lead of some good rider, but more especially pursue the track of him to whom others seem to pay attention. Should you unluckily find yourself entered on a boggy piece of ground, clap spurs to your horse, and get through as quick as you can, unless you have reason to think the plot will thicken the farther you get into it: in such case, do your best to retrace your steps. "When you get into a bog," says Nim North, "wait till the horse has done plunging (which he will do violently at first) before you jump off, as by throwing yourself off while he is plunging, you will most likely get trod upon and hurt. You need not be afraid of a place, however boggish it may look, provided there are green rushes or stones in it; but if it is covered with a sort of green fog, and lumpish at the top, you may be certain that it will not carry." (*Sporting Magazine*, vol. xiii. p. 261.)

Subsect 3. *Leaping or Fencing, its several varieties described.*

1636. *Fencing*, as leaping is more generally called by the Meltonians, is a very important part of field riding, and no sportsman can be said to deserve the name of a fox hunter, that cannot sit his horse at a leap both gracefully and with ease, as well to the horse as to himself. If you wish to ride like the fox hunter of the present day, and particularly if your probable track is over an inclosed and stiffly fenced country, your horse should show jumping points, and must have been taught how to use them. The points required in the horse are well formed oblique shoulders, strong loins, muscular thighs, hocks wide and well let down, which serve to raise and propel the body forward. The fore legs should be strong and well placed and the feet sound, to receive and sustain the force and weight of both horse and rider. We have already described the theory of leaping, under the head *Paces of the Horse*, p. 288.: we here proceed to give some account of the practice in all its varieties. We need hardly premise that fencing requires nerve tempered with discretion. However good the nag may be as a fencer, every jump takes out a certain quantity of his strength, and likewise a certain measure of the duration of his powers generally. Fence boldly when necessary, and your own courage will inspire your horse; but be not ashamed to *save* him when you can, or you may *lose* your horse and your credit also as a judicious rider.

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FENCING.

1637. *The standing leap* is now less required for a hunter than formerly; slow movements on all hunting occasions, except in a check, being out of fashion. Nevertheless, it must be allowed that there are times even now, when those who are not *dead slow* may practise it in the field. All riders are not Meltonians, and age and infirmity, although they do not extinguish the relish for the sports of the field, yet frequently introduce caution in the enjoyment of them. In a standing leap the horse (*fig.* 239.) steadily raises himself on his hind-feet more or less perpendicularly, according to the height and extent of the object to be passed over. Having balanced himself a moment, he commences his spring by very forcibly extending the previously contracted angles of his hind limbs, which action propels the body both upwards and forwards. The fore-legs which had been gathered under him to assist in lessening the resistance to elevation, are now thrown forward to assist in raising and drawing the body also upward and forward, but more particularly to receive it in its descent; during which change of position the hinder limbs, which had been gathered up to keep them from interfering with the matter passed over, are now let down to receive the hind quarters. From this it will become apparent, that it is not very easy, without initiatory practice, to retain the seat when a very high standing leap is passed over; the requisite adhesion must be united with great pliancy on the part of the rider to preserve equilibrium, and prevent his being dislodged from the seat. It would seem that some horses, also, do not relish the standing jump any more than some riders. Mr. Apperley tells us of a magnificent horse, the property of Mr. Robert Canning, a fox hunting rider of celebrity, bought of the Earl of Stamford, and which horse had given sufficient proof of being a good flying leaper, although it turned out, that after he was purchased he would never leap otherwise than standing, except when a brook was in the way, over which he would carry his master of seventeen stone weight safely in the best style if its width allowed it to be at all practicable.

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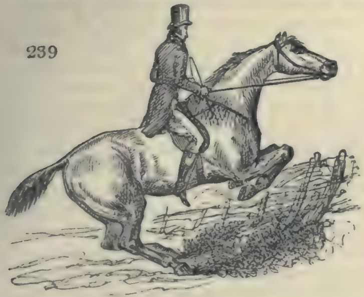

STANDING LEAP.

1638. *The flying leap* (*fig.* 240.) is performed with the limbs more or less extended, and its whole line of head, neck, and body, more or less horizontally directed, according to the extent of space to be passed over. For as every departure which a body in motion makes from a right line, detracts from its velocity of motion in proportion to the degree of such flexure or flexures, so it is as necessary in the flying leap, as in the racing gallop (which is but a succession of leaps), that the head, neck, body, and legs, during the propulsatory effort, should present a figure as rectilinear as the parts will admit of; such figure offering the least possible resistance and the greatest possible extension. In racing speed, for instance, we see head, neck, body, and legs, all brought down to the ground as it were, at least the whole at one moment forms a figure only very slightly curvilinear. In the flying as in the standing leap, the hinder parts are principally concerned in impelling the mass forward, which is generally acknowledged; but it is not so generally understood that the fore-legs likewise certainly take a considerable share also in the operation. From the last contraction of the angles of the fore limbs, ere they leave the ground, a considerable impetus is gained by a propulsatory effort of the angles made by the fore limbs, the foot hold being the assistant point of contact, all which is particularly apparent and very distinctly felt in the buck leap. The object being surmounted in a flying leap, the head is lowered, and the fore-legs are thrown forwards to receive the body, while the hinder limbs, which had been caught up more or less close to the belly, are again extended to take their share in its support when it reaches the ground.

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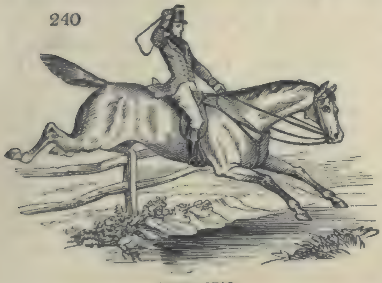

FLYING LEAP.

1639. *Doubling a leap is an action very common with Irish horses*, and not uncommon with many of our own active and well practised hunters. In this effort the hind limbs gain an accession of impetus by the horse purposely striking the top of the hedge, fence, or wall, with his hind-feet. We of course allude to the stroke from the hind-feet only, as that often given by the knees arises from slovenliness, and want either of jumping faculty in the horse, or proper caution and assistance from the rider. In wall leaping, so common in Ireland, it is almost expected, as a matter of course, that some few of the uppermost loose stones will become displaced by every jump over such as are built merely of uncemented stones, after the fashion so usual there. This touching of the object passed over with the hind-feet is so common, that, provided it does not amount to an actual blunder, but is done by the usual reaction of the feet against the opposed body, the leap is considered a fair one, and all bets on it are paid accordingly. Our own experienced hunters, when facing a *rasping leap*, or when, after bounding over a ditch, and having reached the centre of a quick hedge, they get sight of a second ditch on the other side, will often be observed thus to double their leap, by applying the hind-feet to the top of the hedge, and with such additional impetus, slight as it may appear, they carry themselves and riders over the whole. It must not, however, be supposed by this statement, that we consider the hedge itself to offer a fulcrum equal to the required propulsion. No; we consider that the horse himself makes a second extensile effort by the stimulus within, but instinctively put into action by this *point d'appui*. This doubling of the hind-legs is almost always seen in the greyhound when covering, not only a timber leap of the most trifling height, but also that of a low hedge in coursing, &c. &c. which we consider as bearing us out in our principle. It was by observation first made on greyhounds in our younger days, that we became apprised of this secondary effort in leaping, which led us, by attentive observation of every case of the kind that occurred, to detect the same in horses. Having also had much opportunity when in Ireland, of remarking the readiness with which the common horses of the country, under Pat's *cram and shout*, cleared the stone walls so numerous there (we beg pardon, we ought not to have said *cleared them*, for it was by always going over, and so seldom clearing the wall, but, on the contrary, invariably displacing a ridge stone or two,) that we were led to a more minute inquiry into the matter both practical and theoretical. The result of this inquiry satisfied us, that this doubling of a leap is instinctively implanted in all quadrupeds, whose form and arrangement of organs fits them for extensive saltation. Having often, in the company of sportsmen, when we have noticed this capability, been met with doubt, and not unfrequently with a direct contradiction of the possibility of it, we cannot but be gratified when we meet with such an authority as Mr. Apperley bearing us out in our statement of this secondary effort to extend the leap:—"Yet after all," says this talented writer, "the most extraordinary fact relating to the act of leaping in horses, is the power they have of extending themselves by a second spring as it were, when, on being suspended in the air, they perceive something on the further side of a fence, for which they were not prepared. That they occasionally do this under good horsemen, all good horsemen of experience can vouch for; but whence the fulcrum is derived, it would be difficult to determine." (*Encyclopædia Britannica*, vol. xi. p. 627.)

1640. *The buck leap*, so called from its similarity in action to the jumps or bounds of the deer tribe, is seldom made by a horse from the top of his speed. We have seen it made from the trot, and on one or two occasions from the walk also; but this latter mode is rare and seldom seen but under sudden alarm. The buck leap appears to be the consequence of a simultaneous extension of all the joints of both the fore and hind limbs, preceded by a previous flexion of them (*fig.* 241.); but which flexion is so instantaneous as almost to defy the nicest vision. The force and quickness of the united action of all the limbs, elevate the body from the ground; while the greater length and strength, and more angular inclination of the hinder limbs, unite to force the body onward. The limbs, thus quickly caught up, are so retained also until the horse descends, when they are as nearly perpendicularly and simultaneously put down again. In this descent of all the limbs at one instant, a great shock must necessarily be felt by the whole body, and some injury likewise may follow to both horse and rider, particularly where the horse is fatigued, or at all stale on his limbs. The horse in such case not being able to bear the jar of a secondary effort of the joints to relieve himself, the attempt often brings him down, and thus it is that buck leapers are very seldom safe ones. We would caution the nervous rider against the dangerous custom, which some have at every downward leap, of grasping the cantle of the saddle with the whip hand; for it not only displaces the body, and consequently unsteadies the seat, but it has likewise dislocated the shoulder. We have seen others elevate the whip hand at every flying leap; and the action appears to have become so natural to them, as not at all to discompose their seat. In Ireland this is very common, and among the regular Pats it is accompanied with a vociferous *hough!* the rise of the hand and voice being synchronous; neither is it improbable that from custom, both the action and sound are inspiriting to the rider — perhaps to the horse also.

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BUCK LEAP.

1641. *The seat of the horseman in every variety of the leap* is a point of much importance. The body should be well fixed in the middle of the saddle, by which the rider will be placed as near as possible in the centre of motion of the horse when he leaps; the situation which, according to the laws of mechanics, is least likely forcibly to disturb it. The body of the rider should for a moment, as the horse rises, remain erect; but as the hinder legs

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" A HORSE INCLINED TO BALK HIS LEAPS," &c. &c

become elevated to force the horse onward, the body of the rider should incline backward. When, on the contrary, a rider leans forward, or even remains erect in his seat, and still more certainly if he raises himself, as we have seen done, in his stirrups, he has bespoken a fall, and most likely will not be disappointed. On the contrary, by inclining backwards, the equilibrium of the body is preserved; and moreover, as the horse descends, should he misplace his fore-feet, there is a great chance that the rider may light on his own feet, and may thus disengage himself before any mischief occurs, which has happened to ourselves more than once. It has been justly observed, however, that young riders can scarcely be persuaded to lean the body backward enough when the horse has taken his spring, and thus, being already inclined forward as the horse descends, they are of necessity forced on the neck and shoulders, and sometimes are completely unhorsed. A firm seat and a stiff one, we beg to observe, are not synonymous; on the contrary, it is with much truth observed, that a stiff seat cannot be a secure one, because it offers such resistance to the powerful motions of the horse as cannot be sustained. We may add to this the following exemplification: — As the lesser body must give way to the action of the larger or more ponderous one, and the weaker to the force of the stronger, so a good rider will best preserve his seat, or, in other words, his equilibrium, by following every motion of the horse.

1642. *The feet in leaping should be fixed home in the stirrups,* to insure a firm hold of them, and the legs should be slightly inclined backwards, which will afford *more points of contact with the horse* than by dropping them perpendicularly down; it is more favourable likewise to the hold gained by the knees. This position is often said to be more particularly necessary when the leap at all approaches to what, from its severity, is called a *rasper:* but may it not be asked whether, when a leap is very high as well as wide, it might not be prudent that the feet on the descent be carried forward, to gain a resisting point? we have ourselves found it so.

1643. *The bridle in leaping should be held moderately tight only,* so as to offer no check to the horse. How is it possible for a hunter to extend himself if his rider stands upright in his stirrups, and holds himself in that position by means of the bridle, pulled at probably by both hands? At strong timber leaps it is well to have rather a firmer hold on the horse, but in no case let the bridle be so tightened as to interfere with his exertions: neither at any time hold it so slack as that it cannot be instantly caught up as a supporting aid if necessary; and particularly so for the moment when the horse lights on the ground. When riding a horse at a leap that is inclined to swerve, it is prudent to keep him firmly in hand until the moment of his spring, when do not fail immediately to loosen the intensity of the hold.

1644. *A horse inclined to balk his leaps* requires also that you assume such an air of resolution as shall convince him that jump he must; and be assured that, without either whip or spur, the horse can be readily made to understand your intention. Grasping the bridle with both hands during a leap, we have already noticed as a proof of bad riding; nor is it little less so to drop the whip hand down the side rather behind the hip; for this so pulls the body out of the square as greatly to disturb both its equilibrium and adhesion, particularly if either the horse or the rider bears much on the bridle. The horse that naturally carries his head low, should be ridden in a running snaffle at his leaps.

1645. *Lifting at leaps.* Some few horses require to be lifted at their jumps, and there are some few riders who can so lift them to the advantage of both horse and rider. It is, however, a very delicate operation; for as it is evident that, in preparing for a leap, a horse first constrains himself, and then at once relaxes his whole frame, that it may pass unobstructed through space, it is equally so that the bridle, when held lightly, must obstruct this freedom, which is so essential to the action. Nevertheless, some horses may be advantageously lifted, but it must be done most delicately; and it should, like the action of the jump itself, consist of alternate restriction and relaxation. Thus, we will suppose a rider to be approaching a leap which he is apprehensive, from former experience, that although his horse will, in all likelihood, take it and get over it too, yet he will probably do it in a slovenly manner, by striking it, or perhaps by breaking the top bar of a flight of rails (for it is well known that some horses, and good ones too, are such niggards of their powers, that, let the jump be little or big, they will touch the matter they leap over): now, in such case, what is to be done? We reply, all the circumstances considered, this peculiarity must be put up with, for otherwise it might balk and baffle such a horse to "cram" him as you would serve one decidedly slack mettled. As a general rule, however, all horses who come "short home," "grind their timber," or incline to spare themselves, even though they have plenty left in them: such may very properly be lifted by a light momentary check of the bridle, which having raised the horse, the rein should immediately be relaxed, and the spurs applied, that the forced elevation may not shorten the extensile effort of the leap, and make him come still more short from home. Nor in the hand of a good horseman will this momentary relaxation of his bridle hold prevent his readiness in assuming the necessary check, sometimes required to direct and assist the grounding of the horse. We must however confess, that none but an experienced hand is likely to be quite at home here.

1646. *Mr. Apperley* decidedly objects to lifting, as dangerous in timber fencing, because a horse lifted at his timber is led to expect it; and if he did not get it at the critical moment, it may mislead him. We cannot however think this is a sufficient reason that we should not lift some backward horses; and indeed to us it appears that the reason urged in his argument against it, shows that he rather objects on the score of uncertainty on the part of the rider, than on that of the practice itself. He says, "a horse becomes a good leaper from confidence; and if he finds he is to wait, as it were, for your pleasure for him to rise at a gate or a stile, he will be very apt to make mistakes." But we would observe on this, that if you are awake, you will not let him wait, or leave him any time to consider: we may further observe, that there is one critical moment, and one only, when those accustomed to lift a horse, do it, as it were, by instinct. When we resided at Tollesbury in Essex, we had two blood-like horses which ran in a curricle, and with which we used frequently to hunt with the neighbouring hounds. Both were moderately good hunters; one, on whose peculiarities we have already had occasion to remark, was very good: indeed, all that a horse short of being full-bred could do, he would do. He consequently required no lifting, and had none; but the other with more length, height, and figure, had not the action, nor the spirit of his (to appearance) inferior companion; he required lifting at all his fences, and at none more than at timber: in fact, without lifting, he never would clear any thing that deserved the name of a good leap; lift him, and no horse need leap higher or cleaner. Lifting therefore must be sometimes practised, and some horses, like the one we have just alluded to, always expect it.

1647. *A direct forcing of the leap on some horses is necessary*, for they will not take their fences without a smart application of both whip and spur: indeed, we have seen some that required it to be done with much severity, to insure their covering only a tolerable one with safety. From such a brute deliver us, or, at least, give us judgment enough to get rid of him, when satisfied he is actually among the incurables, which no one, however, should be pronounced without some trial. With a young horse, otherwise of great promise, that balked most of his leaps, but more particularly his sunken ones, we had a deep trench dug in a level piece of greensward, and thirty yards beyond this two hurdles were placed. To prevent any possibility of swerving, we hurdle fenced the passage on each side leading to the trench and to the boundary hurdles. This effected, we mounted our steed, and *gathering him up*, we forced him along the alley, increasing the speed as he went onwards, applying both whip and spur the moment he showed any symptoms of shortening his stroke for a swerve; so doing, we forced him over both trench and hurdle. By this method we cured him, in a few days, of his propensity both to balk his leaps and to take them in a slovenly manner. Indeed, he became a first rate fencer; but had he remained one season only in the hands we took him from, he would have become irreclaimable. His former owner was apt to ride moderately quick up to a leap, which, if he fancied, he pressed his horse over after a fashion: if he did not like it himself, the nearer he drew towards it, there was something in his hand, or seat, or both; but so it was, that at these symptoms being displayed, the cunning brute settled the matter for his master, and balked his leap: when we had him, he always bore a little cramming; but he always came home. For screwing and creeping, however, he beat every horse we ever rode; and these qualities, particularly the latter, the Essex followers of hounds know to be requisites in their strongly hedged and ditched country.

1648. *Of the wonderful saltatory powers of the horse*, we have innumerable instances. Some years ago, a wager of 100 guineas was made between Lord Alvanley and Mr. Maher, that each did not leap over a brook of six yards width, without disturbing the water. Both riders leaped the brook handsomely; but unfortunately for Lord Alvanley, his horse threw back a bit of dirt into the water after he had landed, which made him the loser. We ourselves, many years ago, witnessed a leap over the river Roding in Essex, made by the huntsman to the late Sir William Rowley's pack. This leap, when measured, was found to be twenty-four feet clear, which, although we have on record some that were wider, was, it must be allowed, no small jump. We have already hinted at the wall leapers of Ireland; indeed, every horse there is a good jumper, for almost every field is fenced by means of stone walls uncemented. Now Pat disliking trouble, and wholly unmindful of danger, will, as we have often seen him do, force his horse (perhaps with a hayband around his nose, in lieu of a halter or bridle) over all the intermediate walls which lie between his neighbours' fields and his own. We have frequently seen this done merely to save a furlong or two distance, or to avoid the trouble of opening a gate, wholly unmindful of the risks he runs, or the trespasses he commits. But *de gustibus, &c.*

1649. "*The trial leaps*," as they are called, of the Irish horses, are however much more extraordinary. They are made over stone walls six feet high, and built firm throughout by coping and dashing: however, it is not expected that any other than a first rate horse can top such a fence; but several instances have occurred where this has been done, and that even by the common horses of the country. In the county of Limerick, one of these walls is shown which was ridden over by Colonel O'Grady; and we ourselves, when campaigning there during the rebellion, saw many such, but they were most of them without the coping. Over these walls, we were assured, it was a very common occurrence for their crack fieldsmen to ride; but it was owned that some of the stones were usually displaced in the leap. Indeed, it was this very circumstance that deprived the enterprise of half its danger. A good horse there, when hunting, seldom balks such a leap; for he is aware that either his knees or his breast will displace the first tier of loose stone; the next rider who follows does the same; and then each one who succeeds is in more and more peril from the loose stones, which very frequently give horse and rider an awful somersault.

1650. *That high fencing horses are almost, as it were, indigenous to Ireland*, we might conclude from the circumstance, that, at one of the great norse fairs held at Ballinasloe, the parish pound, which is six feet in height, forms the *trial leap* for the high priced horses bought there, each of which, we are told, is expected to leap it ere the bargain is concluded. It is also recorded of a descendant of Old Pot 8, o's from an Irish half-bred mare, that she leaped a wall of seven feet high, built for the purpose, in Phœnix Park, Dublin.

1651. *The feat of leaping over the wall of Hyde Park is well known.* It was to have been performed by an Irish mare, the property of Mr. Bingham, but the trial was frustrated by her having passed into other hands: merely for the honour of Ireland, the leap was nevertheless attempted and achieved, on February 24. 1792, by a bay horse in his possession, whose performance of it, it is said, was done merely to show the possibility of the thing. This was a standing leap; the height of the wall was six feet and a half on the inside and eight on the outside, where a bed of long dung was laid to receive the horse in his descent. The willing animal, it must also be remarked, did it twice, merely displacing a few bricks at the last jump.

Subsect. 4. *General Hints on Field Fencing.*

1652. *To offer instructions on fencing to most of the fox hunters of the present day*, would appear presumptuous. To a few only, as those but lately entered, and to the younger aspirants after venatorial fame, the following practical hints, some of them derived from our own experience, and many others from more accredited sources, may not be altogether unwelcome. Mr. Apperley has written so fully and so well on the subject, as to leave us little to add that is new; and perhaps it is well for our reputation that we have such a *fence* against any attack on us on the score of incapacity.

1653. *Timber leaping*, as one of the most enterprising varieties of the leap, will first occupy our attention. Never ride at a gate that by probability is unfastened; to do so when it is actually on the swing would be madness; for as many good leapers measure heights and distances so accurately as almost always to brush the former, and exactly span the latter, so a gate on the swing, or even unfastened, would in all probability fly open, and the horse, instead of topping it, would first find himself swinging on it, and next rolling rider and all headlong from off it. In such case it would be not unlikely also that the legs of the horse might, at the same time, become entangled in the gate rails; should this happen, first hold the head of the horse firmly down, and then let some one unhinge the gate, which is best done by putting the back against it. In these and other such like cases, wherein timber is concerned, we may remind the steady rider (and it must be remembered we write for all) of the advantages which attended the heavy hunting whip of former times, with its hook and hammer mountings, as well as the old sporting knife, with its cutting and sawing blades. "This favours of the slow." True, good critic, it does so; and we crave your pardon; but being ourselves arrived at that time of life when we also think discretion the best part of valour, we have a fellow feeling for those who may be at once anxious to get on, and yet to do it safely. Strange it is, but not more strange than true, that as life's span contracts, and its enjoyments would appear to lessen, we cling more closely to it. But "hark! forward!" Some good horsemen always ride briskly at a gate, which they say it is prudent to do, first, because your horse will at once distinguish between your purpose of merely going up to open it, and your intention of going over it; next they observe, that by rushing at it, if the horse does not clear it, there is the greater chance of his breaking it by the impetus of the rush. The rider of a tired or blown horse, however, would do well to avoid timber altogether when in his power, for such falls are usually serious ones to both parties; but when circumstances strongly urge the leap, let him push his horse briskly at it with energy, lifting him by hand, and pressing him with the heel at the moment of the spring.

1654. *Falls in timber-leaping certainly do occur often*, from the want of catches to the outer heel of both the fore and hind shoes. Without this check the feet of the horse are apt to slide together under his fore parts, which balks his spring. We however doubt whether the catches would be sufficient to stop the slide in very slushy soft ground; and these catches producing unequal bearing in the tread become objectionable. By experience we are, however, convinced of their utility in some cases, such as riding on the sides of downs, on mornings sufficiently frosty to make the banks, &c., slippery, yet not sufficiently so to prevent the hounds from going out. (See *Shoeing of the Hunter*, p. 355.) At timber leaps circumstances, however, must direct the practice; some horses have a method of their own, and some riders also, and it is in vain to attempt to force either from certain fixed habits and certain settled opinions. There are, however, a few rules which will apply to most cases, and such as we think all must allow; of these we venture to offer the following as an example: — When you know your horse to be a safe fencer, be his fashion of performing his leaps what it may, do not attempt to alter it; and, whatever you do, by no means hurry such a horse, however prudent you may find it to do so with others. Some horses, although sufficiently eager to get on, will always pull somewhat up at a timber leap, particularly if it requires any extraordinary exertion. In such a case, if you know your horse will clear his leap fairly and safely, let him take it his own way; hurrying such a horse would probably be a very unsafe measure. Never, however, attempt such a leap merely to show off either yourself or your horse during the run, for several others of a similar kind may be *forced* on you, and be assured that every such leap tells and takes much out of your horse, as must be evident when we consider how much exertion he has to make to raise you and himself in every such leap to the required height, and also how much to recover from by the shock given to his frame in his descent. Avoid following too closely when another is taking a timber leap, for should he fall, you may either kill him or yourself; and, at all events, you will lose your own credit. Do not force your horse at timber of any considerable height when he is at all distressed, for should he come down, he will come down with great force from his previous fatigue, and will most probably injure both himself and you. We would again caution the young aspirant after fame in field riding, against forming a fixed resolution to take all his leaps, be they what they may, on the gallop; on the contrary, it is actually good riding to pull up at some leaps, of which we have pointed out instances, and to take them either standing or from a walk, or at most from a gentle canter. Few horses, except at high leaps, can jump with ease to themselves from the trot; thus, even when they have been previously trotting before they reach the leap, they break into a canter. Some of our best riders also will not ride hard at timber, be the leap what it may. We are told, indeed, that Mr. Asheton Smith, a notorious good judge of field riding, with the exception of brooks, never rode hard at any kind of fence whatever. We are aware that in these rules there are seeming inconsistencies, arising from the diversities in the manners of horses, the methods of riding, and the peculiarities in circumstances which occur in the field.

1655. *A stile is often an awkward fence to get over*, particularly when it happens that a foot bridge is on the one side or the other of it; if on the near side, the horse may be probably forced over the bridge, ditch and stile: should this be impracticable, and there is reason to suppose that the boards which form the bridge will bear the weight of both horse and rider, take it standing; or turn him over, if any good-natured friend is present to catch him for you. But, if you are one who ride for display, take care what county it is that you do this in; and, if any one should be present, it is to be hoped that he also will be a *particeps criminis*, or it will prove a blot in your escutcheon among a certain clique.

1656. *Hedge fencing many horses are averse to*, which generally arises from having been forced over one at full speed that presented a yawning ditch on the other side, and having received a severe fall into it, he never loses the remembrance of it: such horses will usually jump better from the ditch side than from the bank side, for a horse then sees all before him. Some strongly fenced countries have what are called root ditches, which are nothing more than very deep trenches, cut to prevent the strong roots which grow from the hedge from trespassing on the headlands. Take these cooly, unless your horse is a very wide-stretching leaper; otherwise be cautious, for these are sad *squire traps*.

1657. *Creeping, as a species of fencing*, is often forced on the boldest riders by the insurmountable nature of some hedges, with the width of some ditches which bound them. If it be the ditch that balks you more than the fence, attempt it by creeping; that is, let your horse go leisurely up to it and into it, when, having planted his hind-feet in the bank, he will gather himself up and spring over.

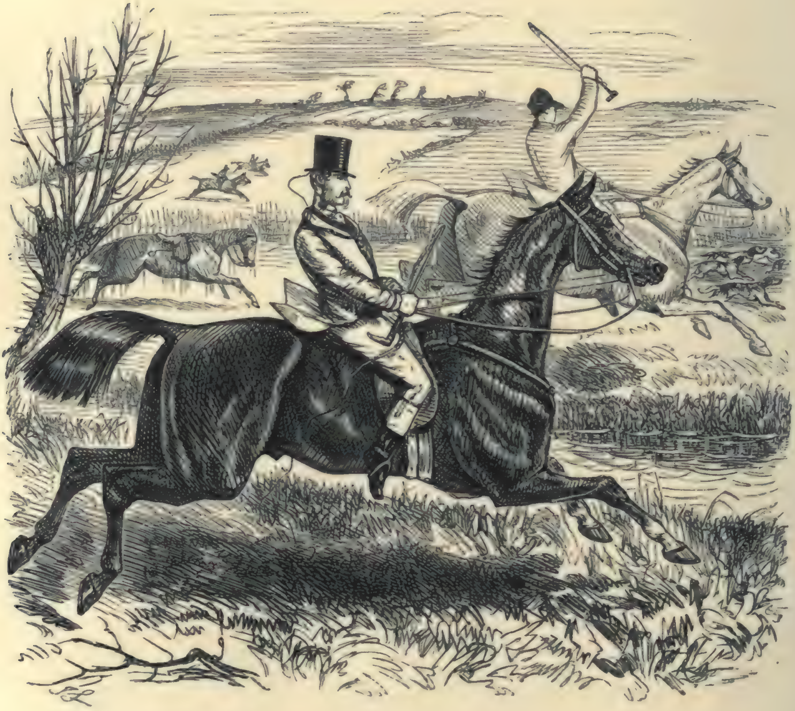
1658. *Screwing*, as it is called, is a method of getting through the thick hedges that cannot be got over. In the great grazing counties, where the strong thick hedges are allowed to attain their full growth without plashing, it almost amounts to an impossibility to overtop them. Some desperate riders will, however, force their horses to leap into the very middle of such a hedge, and then take their chance of getting through as they can. We are told of a rider of notoriety who, attempting this, got completely planted; another coming up complained that the fixture stopped the way; the former replied that, being fixed, if the other wished to move him he must ride at him: strange to relate, the complainer did so charge him, and after this fashion both got into the next field. Others however screw through, that is, they actually push themselves through these hedges: but screwing does not suit the delicate skin of the thorough-breds; and indeed many other horses can hardly be forced to take such a fence after this fashion.

1659. *Brook jumping requires a practised rider*, and not only a very active determined horse, but one also in some measure used to this sort of saltation, by previous drilling at small rivulets, which he should be forced over at three-quarters speed; for few horses are

To face p. 470.

ON AND OFF.

To face p. 471.

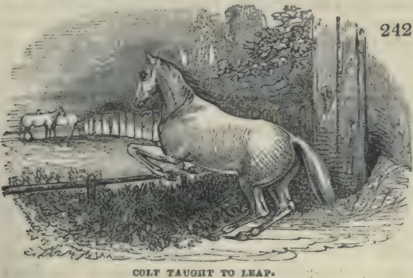


HOW TO GO AT A BROOK.

fond of water jumping without early instruction and practice: at best, it is but dangerous work, on account of the rottenness of the banks and the evils which attend a fall backwards, when either the water or the fall is deep. Strains and overreaching are not uncommon consequences in brook jumping; and if the brook be wide, the exertion greatly expends the powers of the horse: the old hands therefore will often run their chance, and make a détour, particularly if the banks are overflown. When, however, a brook is to be faced, the horse should be well gathered up, and then rushed forcibly at it, giving him the persuaders as a stimulus.

Subsect. 5. *Training Young Horses to Leap, and other Field Duties.*

1660. *Teaching young horses to leap* which are intended for hunters, is not only advisable but actually requisite, although it is little attended to even by breeders of the best stock for the horse market. Their young horses, it is true, are lunged in the cavesson to supple their limbs, and probably they are trotted over ploughed ground to teach them to elevate their feet in action; but it is very seldom that these persons attempt to practise them at all at fencing, and unless young master is allowed now and then to look at the hounds, a whole string of likely four and five-year-olds are sent off to Horncastle or other great fairs, not one of which ever crossed a ditch or jumped a stile. It has often surprised us that these otherwise sharp gentry are not more awake to their own interests, by bringing forward their most promising stock, already made handy at fielding and fencing: on the contrary, we have heard it argued, not only by these breeders but also by persons from whom we should not have expected opinions of such slight weight to escape them, that teaching horses to leap is entirely unnecessary, giving as a reason that they all take to it naturally. In a complete state of nature, it is true that leaping is taught the young colts by the habit of following their parents, or the general herds when flying before enemies, as a cry of wolves, or the stealthy prowlings of the lion, tiger, &c. But horses have so long been domesticated as to lose these instincts, as we know by the wretched attempts at clearing a leap of only moderate height or breadth, which the unbroke colt usually makes; and, without practice, those of five and six years do little better. It is therefore a mere argument of necessity, to assert that horses instinctively leap to avoid danger or to seek food: danger does not often fall in their way; and our fences which divide pasturage, seldom offer any temptation to the unpractised colt, or even matured horse, to attempt to cross them without some great spur. The subject of early training of horses to saltation or leaping, is therefore well worthy the attention of the breeders for the horse market, particularly of such as breed blood stock; indeed, we feel assured, that to show their two, three, and four-year-old colts as finished fencers, is to insure their future sale at a high price. Such being the inevitable result of only a little trouble and tact on their parts, we repeat that we cannot but be surprised that *training to leap* is not a regular part of the education of every horse of any breeding. But if this interests the general breeder for the horse market, how much more does it concern the owners of extensive fox hunting establishments, who breed their own hunters, that they should make leaping an essential part of the breaking and training of all the young horses of the hunting stud; it is true many do it, and it is only surprising that any omit it. Mr. Smith, we observe, has not been unmindful of this matter in his instructions on fox hunting, and of the necessity that the initiatory lessons in fencing should commence early, not only to make the practice familiar, but also to habituate the limbs to saltation: if we understand him aright, his initiatory lessons commence with the weaning of the colt. He first raises a slight fence knee high, between the shed in which the colt shelters himself and receives his corn, and the paddock he grazes in; this fence, which he first steps over, by degrees being elevated, then forces him to raise himself to cross it, when, having taught himself thus much, his hinder legs soon follow. The next step taken by the directions is to surmount the brush hedge by a rail, which then forces him to make a standing leap both to and from the shed in which he gets his corn. A ditch is next dug, and a mound of earth is also raised to take the place of the rail, or if the rail be left, it should now be placed higher, that he may not prefer crossing to going over the ditch (*fig.* 242.). "He will then," in Mr. Smith's own words, "first walk into the ditch; but in the course of a day or two will quietly jump on the bank. After being perfect in this, have another ditch on the other side of the bank, and he will jump on and off in a few days as well as any hunter." This ingenious sportsman further states, that he has at this time a thorough-bred colt, of nine months old only, which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COLT TAUGHT TO LEAP.

is as perfect at all sorts of fences as the best hunter. We, however, must now return to such horses as have had no early lessons in fencing.

1661. *Leaping is usually forced on the raw horse by first practising him at a bar.* Both the standing leap and the flying leap are thus taught; though there is nothing like the cry of the hounds for making an effective leaper. A good leaping bar should be made to revolve on two axles, and suspended between two posts: to prevent injury from the usual immovable state of the bar, in this instance it should be made movable by being poised by a weight, so that, should the horse rush against it bodily, or strike it with his knees, &c. the bar necessarily gives way, and thus secures both horse and rider from danger. Mr. Templar's method of teaching leaping, as noticed by Nimrod in strong terms of commendation in his *Hunting Tours*, p. 160. deserves notice: — "Within a railed area a double and a single leaping bar are seen, which area is surrounded by another, in which a double fence presents itself of two rails and two ditches. Another excavation likewise presents a brook. In the middle of the whole, a groom stands elevated, having his horse in a lunge rope, whom he forces, as he passes round and round, to leap these several fences in succession."

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TEACHING LEAPING.

1662. *Young horses are*, however, to be perfected as fencers in no way so eligibly as in the field. Mr. Apperley says, "If you are determined to make your own horses, be careful, the first season, how you ride them at very cramped places, especially where there is timber, for they cannot be expected to be *au fait* at such things; and many of the worst falls that some of our hard riding sportsmen have experienced, have been from expecting young horses to do what old, or at least experienced, ones only can do. Avoid also taking the lead with hounds on a young horse, especially if they are running hard, for it may cause him to refuse a big fence which he might have followed another horse over, and thus become a refuser ever afterwards. Although horses do not understand languages, they understand the arbitrary signs of their masters or riders; and if a young hunter makes a slovenly mistake with you at a fence, he should be corrected with either spur or whip, and also by the voice. The merely calling out to him, or exclaiming, 'For shame — what are you about, eh!' accompanied by a slight stroke of the whip, has often a very good effect, and will be visible at the next fence, when he will be more careful where he puts his feet, and take a greater spring. But the correction of a young hunter should not be severe. Nothing," continues Mr. A. "would be more likely to make him what is called a 'rushing,' and consequently an unsafe, fencer for the rest of his life, than beating him severely for any trifling faults he may commit in the field." (*Ency. Brit.* art. Horsemanship.) Young horses are injured by too long and too severe training exercises, either in fencing or training gallops. The frame is not knit, and the constitution not hardened at five years old; and therefore training too severely now produces splints, spavins, curbs, and windgalls. It likewise throws the young horse out of condition; and, in bringing him up again to the mark, the young one is apt to fly at the heels, sometimes at the eyes, and occasionally the wind becomes defective, particularly if influenza be prevalent around him. While, therefore, the chase cry of "go it" rings in one ear, let *festina lente* whisper in the other.

1663. *Swimming is sometimes required in hunting.* All horses will naturally swim sufficiently well to avoid drowning, yet when they first find themselves afloat, their fears cause them to flounder about too much to make their backs at all a safe situation for a rider. Under such circumstances he should drop the bridle immediately, and, stooping forward, clasp the horse round the neck, or hold on by the mane. In all other cases sit firmly, and grasp your horse moderately tight with your legs and thighs. When hunting in Sussex in the neighbourhood of Alfreston, we have been frequently forced, when the tide was up, to swim our horse over the armlets of the sea, which here and there intersect the shore; and so expert was our horse in swimming, that he invariably struck off directly against the stream, sagaciously allowing, by that means, for the force of the current driving him to the opposite landing-place, which he always reached to a nicety. Never interfere with the bridle; if you do both horse and man will run the risk of being drowned. A horse inured to swimming inflates himself almost to bursting to make the body more buoyant, and the fork sensibly and unpleasantly feels the enlargement; but we can assert that, barring the ducking, it neither distresses nor annoys the rider or the ridden.

SUBSECT. 6. *Effects of Immoderate Exertions on Horses.*

1664. *Over-marking, or over-doing the hunter,* is a too frequent occurrence, and often requires very judicious and prompt treatment to save life. It unfortunately also happens, that when death does not immediately ensue, from the congestion which has taken place in the lungs, either broken wind, or founder, follows, and thus the horse is equally ruined for active services. We will however premise, that there appear to be two morbid dangers to be apprehended from inordinate exertion; one from a cessation of the powers of life, either by a loss of nervous energy, or by a direct breaking down of the cohesive texture of the blood, and such a cessation of the usual muscular contractility, as to leave that tenderness met with in the flesh of all such animals as have been hunted to death. The other danger is derived from the tendency which such inordinate excitement has to produce congestion of the lungs, or otherwise active inflammation of some of the vital organs: sometimes spasm of the diaphragm occurs, and rupture of it has taken place; and as the appearances of these distinct states may be mistaken each for the other, by persons unacquainted with equine pathology, so it is prudent in all these cases to apply for veterinary assistance immediately.

1665. *When the vital powers have been brought almost to a stand-still,* the horse with great difficulty reaches home, and often scours, and stales bloody urine on his journey there. He breathes with irregularity and difficulty; he becomes hot and cold by turns, or a clammy sweat breaks out, at first partially, but if he cannot rally, it becomes universal. His skin has a peculiar feel and loses its elasticity; the haw is drawn forward; the nose at first fiery, now becomes pale; the breathing is hurried, and the pulse is found to be tremulous, and almost invariably intermitting. Some cases are marked with a settled determination in the horse not to lie down; while others not only lie down, but are with difficulty made to rise again. A horse so circumstanced sometimes appears simply uneasy, and without any symptoms of severe pain. In others (for hardly any two cases are exactly alike) we have seen great uneasiness, and even groans have escaped the suffering animal; and when this occurs, there is little hope of any treatment proving availing, the diaphragm or midriff has been found ruptured in some such case. Bleeding as a remedy is commonly resorted to; but we think if no active symptoms of inflammation are present, it is injudicious to do so, particularly in the state we have just noted. Place the hand on the chest; does the heart vibrate quick, rather than beat lustily, by no means bleed. Press any one of the larger veins, and, unless it swells up at once, let bleeding alone, at least until the medical adviser arrives. Should it however happen, that no veterinary surgeon is near, if the breathing becomes hurried, the nostrils dilated, and the horse stretches out his neck as though reaching for more *rein liberty;* if the linings of the nose, although at first pale, now begin to look flushed and red, and the mouth becomes hot, proceed to bleed. If the vein rises well, make a large orifice, so that it may discharge the blood quickly, watching the effects of the flow. If it rushes out, and the horse does not falter, take three quarts, or even more, away. Let his head be turned to the door, and rub and bandage his legs up. As soon as the first symptoms go off, or his legs and ears become cold, briskly hand rub them, clothe the body also, and throw up a gruel clyster; and, unless the weather be very cold, allow a free current of air, but clothe the body and give the following: — Sweet spirit of nitre, half an ounce; mix with a pint and a half of gruel. Should active symptoms of weakness come on, horn down equal parts of gruel and sound ale; and should the debility increase, horn these down every half hour, with occasional full doses of opium also, to allay irritability in the system, and to arrest the looseness that is usually present.

1666. *When active inflammation follows* the over severe exertions of a hard day, the over-marking does not immediately show itself. The horse probably appears at first only moderately fatigued, but he soon gets a strong shivering fit, accompanied with an oppressed pulse. The lining of the nose becomes highly injected, and the breathing much disturbed. The symptoms which follow vary according to the organ which is the principal object of attack, and the treatment also must vary with that. While proper medical assistance is procuring, the groom, under these symptoms, with propriety may bleed, back-rake, and bandage up the legs if cold; but he should avoid giving any heating, *i. e.* stimulating, drinks, under the name of cordials; indeed, he should not give any thing supposed to be medicinal, until the horse has been seen by a veterinary surgeon. It often happens that, when the topical inflammation of any of the vital organs is in a measure subdued, the evil is translated to the feet, and the horse becomes foundered. In a few cases, blindness follows; and a still more frequent sequel is broken wind.

Sect. III. *Naming, Training, and Entering Young Hounds.*

1667. *Hounds of every variety* require a regular course of discipline and instruction to fit them for their several duties of home and field; it must however be premised, that obedience, perfect and unconditional, is essentially necessary to form a good hound. To insure ready obedience he must have a name, and to this name he must answer as readily as the soldier at the roll call. Mr. Apperley facetiously observes, "The naming of hounds is somewhat under metrical control, for it is not only confined to words of two and three syllables, but their quantity, or rather their time must be consulted. For example, a dactyl, as Lucifer, answers well for the latter, but who could halloo to Aurora? A trochee, or an iambus, is necessary for the former, the spondee dwelling too long on the tongue to be applied smartly to a hound." (*Encyclopædia Britannica*, art. Hound, p. 705.) It has been thought a wonderful proof of recollection, to remember the name of every hound in a large pack; and to a person who had not lent himself to it, and had no interest in the case, it would be difficult to do it. But what is such a power of recollection to that instanced in a Southdown shepherd, belonging to the celebrated Mr. Ellman of Glynd, who proved, before a large company, that he knew every sheep in a flock of seven hundred by the countenance only. Some quick eyed sportsmen, also, having once seen a pack of foxhounds at feed, can long after identify each of them.

Subsect. 1. *Naming of Hounds.*

1668. *Hounds are usually named at the time they are sent out to their walks*, but we cannot help thinking it would be better to do it much earlier. The exact name should be sent with each hound, and also the true pronunciation of the name should be impressed on the ears of those it is sent to, otherwise the poor brute will be returned, alive to every call but the right one. The finding of names for seventy or eighty couple of hounds, which shall be essentially distinct from each other in sound, is somewhat difficult, and the matter is rendered even more so, if the huntsman and other principal attendants have not a clear voice and distinct pronunciation. Of the necessity of making each hound well acquainted with his name we need not insist; for the perfection of both kennel and field discipline depend on it, as well as that each dog should be prompt to attend the moment his name is pronounced. It is certainly a very proper precaution to brand each puppy on the side before he is sent out to his walk, to prevent its being stolen, and likewise to insure its being brought back if it strays.

NAMES OF DOGS.

Able.
Actar.
Adamant.
Adjutant.
Agent.
Aider.
Aikin.
Aimwell.
Alfred.
Ambrose.
Amorous.
Antic.
Anxious.
Arbiter.
Archer.
Ardent.
Ardor.
Argus.
Arrogant.
Arsenic.
Artful.
Artist.
Ashurst.
Atom.
Auditor.
Augur.
Awful.

Bacchanal.
Bachelor.
Banger.
Barbarous.
Barebones.
Basker.
Bellman.
Bender.
Benedict.
Blackguard.
Blaster.
Blaze-away.
Blucher.
Blueman.
Bluster.
Boaster.
Boisterous.
Bonnyface.
Bouncer.
Bowler.
Braveboy.
Bravo.
Brawler.
Brazen.
Brilliant.
Brunswick.
Brusher.
Brutal.
Burster.
Bustler.
Byblow.

Caitiff.
Caliban.
Captain.
Captor.
Careful.
Carol.
Carver.
Castor.
Catcher.
Catchpole.
Caviller.
Censor.
Cerberus.
Challenger.
Champion.
Chancellor.
Chanticleer.
Charon.
Chaser.
Chatterer.
Chaunter.
Chieftain.
Chimer.
Chirper.
Choleric.
Chorister.
Claimant.
Clamorous.
Clangor.
Clasher.
Climbank,
Clinker.
Combat.
Combatant.
Comforter.
Comrade.
Comus.
Conflict.
Conqueror.
Conquest.
Conrad.
Constant.
Contest.
Coroner.
Cottager.
Counsellor.
Countryman.
Courteous.
Courtier.
Coxcomb.
Craftsman.
Crasher.
Critic.
Critical.
Crowner.
Cruiser.
Crusty.
Cryer.
Curfew.
Currier.
Cypher.

Damper.
Danger.
Dangerous.
Dapper.
Dapster.
Darter.
Dasher.
Dashwood.
Daunter.
Dexterous.
Disputant.
Doriment.
Downright.
Dragon.
Dreadnought.
Driver.
Duncan.
Duster.

Eager.
Earnest.
Effort.

NAMES OF DOGS, *continued.*

Elegant.
Eminent.
Envious.
Envoy.
Errant.
Excellent.

Factor.
Factious.
Fatal.
Fatalist.
Fearnought.
Ferryman.
Fervent.
Finder.
Firebrand.
Flagrant.
Flasher.
Fleece'em.
Fleecer.
Flinger.
Flippant.
Flourisher.
Flyer.
Foamer.
Foiler.
Foreman.
Foremost.
Foresight.
Forester.
Forward.
Fluminant.
Furrier.

Gabriel.
Gainer.
Gallant.
Galliard.
Galloper.
Gamboy.
Gamester.
Garrulous.
Gayman.
General.
Genius.
Giant.
Gimcrack.
Glancer.
Glider.
Glorious.
Goblin.
Governor.
Grappler.
Grasper.
Gregory.
Grider.
Griper.
Growler.
Grumbler.
Guardian.
Gulliver.

Hannibal.
Harasser.
Harbinger.
Hardiman.
Hardy.
Harlequin.
Havock.
Hazard.
Headstrong.
Hearty.

Hector.
Heedful.
Hercules
Hermit.
Hero.
Highflyer.
Hopeful.
Hotspur.
Humbler.
Hurtful.

Impetus.

Jailor.
Jasper.
Jerker.
Jimcrack.
Jingler.
Jockey.
Joker.
Jolly.
Jollyboy.
Jostler.
Jovial.
Jubal.
Judgment.
Jumper.
Justice.

Labourer.
Languard.
Larum.
Lasher.
Launcher.
Lazarus.
Leader.
Leveller.
Liberal.
Libertine.
Lictor.
Lifter.
Lightfoot.
Linguist.
Listener.
Looby.
Lounger.
Lucifer.
Lunatic.
Lunger.
Lurker.
Lusty.

Manager.
Manful.
Marcus.
Mareschal.
Mariner.
Marksman.
Marmion.
Marplot.
Martial.
Marvellous.
Match'em.
Maxim.
Maximus.
Meanwell.
Medler.
Menacer.
Mendall.
Mender.
Mentor.
Mercury.

Merlin.
Merryboy.
Merryman.
Messmate.
Methodist.
Mighty.
Militant.
Minikin.
Miscreant.
Mittimus.
Monarch.
Monitor.
Monster.
Motley.
Mounter.
Mover.
Mungo.
Musical.
Mutinous.
Mutterer.
Myrmidon.

Nervous.
Nestor.
Nettler.
Newsman.
Nimrod.
Noble.
Nonsuch.
Novel.
Noxious.

Pagan.
Pageant.
Paragon.
Paramount
Partner.
Partyman.
Pealer.
Penitrant.
Perfect.
Perilous.
Pertinent.
Petulant,
Phœbus.
Piercer.
Pilgrim.
Pillager.
Pilot.
Pincher.
Piper.
Pitiful.
Playful.
Plodder.
Plunder.
Politic.
Potboy.
Potekim.
Potent.
Prater.
Prattler.
Premier.
President.
Presto.
Prevalent.
Primate.
Principal.
Prodigal.
Prompter.
Prophet.
Prosper.
Prosperous.

Prowler.
Pryer.

Racer.
Rager.
Rallywood.
Rambler.
Rampant.
Rancour.
Random.
Ranger.
Ransack.
Rantaway.
Ranter.
Rapper.
Rattler.
Ravager.
Ravenous.
Reacher.
Reasoner.
Rector.
Regent.
Render.
Resonant.
Restive.
Reveller.
Rifler.
Rigid.
Rigour.
Ringwood.
Rioter.
Risker.
Rockwood.
Romper.
Rouser.
Router.
Rover.
Rudesby.
Ruffian.
Ruffler.
Ruler.
Rumbler.
Rummager.
Rumour.
Runner.
Rural.
Rusher.
Rustic.

Salient.
Sampler.
Sampson.
Sanction.
Sandboy.
Sapient.
Saucebox.
Saunter.
Scalper.
Scamper.
Scapegrace.
Scarecrow.
Scarlet.
Schemer.
Scourer.
Scramble.
Screamer.
Screecher.
Screwboy.
Scuffler.
Searcher.
Settler.
Sharper.

Shifter.
Signal.
Singer.
Sinwell.
Skirmish.
Smoker.
Sobersides.
Social.
Socratic.
Solomon.
Solon.
Songster.
Sonorous.
Soundwell.
Spanker.
Special.
Specimen.
Spinner.
Splendor.
Splenetic.
Spoiler.
Spokesman.
Sportsman.
Squabbler.
Squeaker.
Statesman.
Steady.
Stickler.
Stinger.
Stranger.
Stripling.
Striver.
Strivewell.
Stroker.
Stroller.
Struggler.
Sturdy.
Subtile.
Succour.
Suppler.
Surly.
Swaggerer.
Sylvan.

Tackler.
Talisman.
Tamer.
Tangent.
Tartar.
Tatler.
Taunter.
Teaser.
Terror.
Thrasher.
Threatner.
Thumper.
Thunderer.
Thwacker.
Thwarter.
Tickler.
Tomboy.
Topmost.
Topper.
Torment.
Torrent.
Torturer.
Tosser.
Touchstone.
Tracer.
Tragic.
Trampler.
Transit.

Transport.
Traveller.
Trimbush.
Trimmer.
Triumph.
Trojan.
Trouncer.
Truant.
Trudger.
Trueboy.
Truefit.
Trueman.
Trusty.
Tryal.
Tryer.
Trywell.
Tuner.
Turbulent.
Twanger.
Twig'em.
Tyrant.

Vagabond.
Vagrant.
Valiant.
Valid.
Valorous.
Valour.
Vanity.
Vaulter.
Vaunter.
Venture.
Venturer.
Venturous.
Vermin.
Vexer.
Victor.
Vigilant.
Vigorous.
Vigour.
Villager.
Viper.
Volant.
Voucher.

Wanderer.
Warbler.
Warhoop.
Warmer.
Warning.
Warrior.
Waspish.
Wayward.
Wellbred.
Whipster.
Whynot.
Wildair.
Wildman.
Wilful.
Wisdom.
Woldsman.
Woodman.
Worker.
Workman.
Worthy.
Wrangler.
Wrestler.

Xerthippe.

Yellowboy.
Yellowly.

NAMES OF BITCHES.

Abig.
Accurate.
Active.
Actress.
Adelaide.
Adeline.
Affable.
Agatha.
Agile.
Airy.
Amazon.
Amity.
Amythyst.
Angry.
Animate.
Anodyne.

Artifice.
Audible.

Baneful.
Baroness.
Bashful.
Bawble.
Beatrice.
Beauteous.
Beauty.
Beldam.
Belinda.
Bellmaid.
Betsy.
Billingsgate.
Blameless.

Blithsome.
Blowzy.
Bluebell.
Bluelass.
Bluemaid.
Bonny.
Bonnybell.
Boundless.
Brevity.
Bridesmaid.
Brimstone.
Busy.
Buxom.

Capable.
Captious.

Careful.
Careless.
Carnage.
Caroline.
Caution.
Cautious.
Celia.
Charmer.
Charming.
Chauntress.
Cheerful.
Cheerlass.
Cheerly.
Cherriper.
Circe.
Clara.

Clarinet.
Clio.
Columbine.
Comely.
Comfort.
Comical.
Courtesy.
Cowslip.
Crafty.
Crazy.
Credible.
Credulous.
Croney.
Cruel.
Curious.
Cyprian.

Dainty.
Dairymaid.
Daphne.
Darling.
Dashaway.
Dauntless.
Delicate.
Demirass.
Desperate.
Destiny.
Dian.
Diligent.
Docile.
Document.
Doubtful.
Doubtless.

NAMES OF BITCHES, *continued*.

Downright.
Dreadful.
Dreadless.
Dreadnought
Dulcet.

Easy.
Echo.
Ecstasy.
Eleanor.
Endless.
Energy.
Enmity.
Essay.

Factious.
Fairplay.
Faithful.
Famous.
Fanciful.
Fashion.
Favorite.
Fearless.
Festive.
Fickle.
Fidget.
Firaway.
Firetail.
Flighty.
Flourish.
Flurry.
Forcible.
Fractious.
Frantic.
Friendly.
Frisky.
Frolic.
Frolicsome.
Funnylass.
Furious.
Fury.

Galley.
Gambia.
Gambol.
Gamesome.
Ganymede.
Ganza.
Gaudy.
Gayety.
Gaylass.
Gayly.
Ghastly.
Giddy.
Gladness.
Gladsome.
Gossamer.
Governess
Graceful.
Graceless.
Gracious.
Grateful.
Gravity.
Guilesome.
Guiltless.
Guilty.

Handsome.
Harlot.
Harmony.
Hasty.
Hazardous.
Heedless.
Helen.
Heroine.
Hideous.
Honesty.
Hostile.

Industry.

Jealousy.
Jollity.
Joyful.
Joyous.

Lacerate.
Laudable.
Lavish.
Lawless.
Lenity.
Leopardess.
Levity.
Liberty.
Lightening.
Lightsome.
Likely.
Lissome.
Litigate.
Lively.
Lofty.
Lovely.
Lucinda.
Luckylass.
Luna.
Lunacy.
Luxury.

Madcap.
Magic.
Malaprop.
Malice.
Margery.
Marygold.
Matchless.
Matchmaker.
Melody.
Merrylass.
Milkmaid.
Milliner.
Mindful.
Minion.
Miriam.
Mischief.
Modesty.
Modish.
Monody.
Music.

Narrative
Neatness.
Negative.
Nicety.
Nimble.
Niobe.
Noisy.
Nora.
Nosegay.
Notable.
Notice.
Notion.
Novelty.
Novice.

Passion.
Pastime.
Patience.
Phœnix.
Phrenetic.
Phrenzy.
Placid.
Playful.
Pleasant.
Pliant.
Positive.
Precious.
Prettylass.
Previous.
Priestess.
Prophetess.
Proserpine.
Prudence.

Rachel.
Racket.
Rally.
Rampish
Rantipole.
Rapid.
Rapine.
Rapture.
Rarity.
Rashness.
Rattle.
Relish.
Reptile.
Resolute.
Restless.
Rhapsody.
Riddance.
Riot.
Rival.
Roguish.
Rosa.
Rosamond.
Ruby.
Ruin.
Rummage.
Ruthless.

Sanguine.
Sappho.
Science.
Scrupulous.
Selina.
Shrewdness.
Skilful.
Sloven.
Songstress.
Specious.
Speedwell.
Speedy.
Spiteful.
Spitfire.
Sportful.
Sportive.
Sportly.
Sprightly.
Stately.
Stoutness.
Strenuous.
Strumpet.
Surety.
Sybil.
Symphony.

Tattle.
Telltale.
Tempest.
Tentative.
Termagant.
Terminate.
Terrible.
Testy.
Thankful.
Thoughtful.
Tidings.
Tilter.
Toilsome.
Tractable.
Tragedy.
Trespass.
Trifle.
Trivial.
Trollop.
Troublesome.
Truelass.
Truemaid.
Tunable.
Tuneful.

Vanity.
Vanquish.
Vehemence.
Vehement.
Vengeance.
Vengeful.
Venomous.
Venturesome.
Venus.
Verify.
Verity.
Vestris.
Vicious.
Victory.
Victrix.
Vigilance.
Violent.
Viperous.
Virulent.
Vitiate.
Vivid.
Vixen.
Vocal.
Volatile.
Voluble.

Waggery.
Waggish.
Wagtail.
Wanton.
Warfare.
Warlike.
Waspish.
Wasteful.
Watchful.
Welcome.
Welldone.
Whimsey.
Whirligig.
Wildfire.
Willing.
Wishful.
Wonderful
Worry.
Wrathful.
Wreakful.

Xanthippe

Yellowlass.

1669. *In most fox hunting establishments* a list is yearly printed of the names, ages, and pedigrees of all the kennelled hounds, with the number of seasons that each has hunted. We once saw such a list, with sundry private marks, in type; and we were given to understand that these cabalistic signs were only understood by the master and huntsman, but which, without doubt, related to the qualities of each.

SUBSECT. 2. *Training of Hounds.*

1670. *Hounds are trained for the purpose of perfecting them in hunting their game*, be it what it may. Collectively they should carry a good head, pack well, and go as fast as their noses will let them, but by no means faster. No one should be kept that does not run true to the line, *i. e.* adhere to the scent and follow the track of the game. Hounds of high character, with a cold scent, should exhibit tact and patience; and without pottering half a minute over each blade of grass, should yet hunt close: and they should be stout runners, as well as true. As opinions widely differ on most of the topics connected with hunting, we shall quote from the reputed authorities; and while we place conflicting opinions before the reader, we shall take the liberty of drawing such conclusions as either our experience or reflection has led us to prefer.

1671. *Hounds gathered from their walks* are either packed at once, or they are kept apart in detachments of a few couples only. The latter method is of use in enabling the kennel attendants to become more intimately acquainted with the constitution, temper, and qualities, of each dog; and, what is of almost equal consequence, it begets a closer attachment both from and to each young dog in this disgregated state, than when congregated into a whole pack. In this way each individual may receive separate notice, may be wooed and won by kindness, which will root every lesson more firmly than the rate or the whip; which latter, however, must be vigorously applied, wherever a quarrelsome disposition is observed. We will now suppose the young hounds to be collected together, and packed or entered.

1672. *In your entry to the pack*, be very observant of that dire foe to the junior hounds,—the *distemper*. Mark every alteration from the usual habits, watch the weak watery eye, listen to every *husk*, find out the husker, and remove him to the infirmary. Do not forget to watch that the biliary affection, called *yellows*, does not make its appearance without being early combated. Observe, likewise, that none become foul in their coats; any of them that are perceived to scratch much, should be dressed lightly over as for mange. These, it may be said, are scrubby subjects to commence with; but let us meet our foe at the first, and save ourselves the greater trouble of turning him out.

1673. *Entering young hounds to riot.* Close training now commences. When the newly-entered hounds are taken out, they should either be coupled together, a dog with a bitch, or otherwise an old and a young one; which latter, at the outset, is the safest practice. At first, it would be well that both the huntsman and whippers-in should be on foot, more command over them being gained by this method; the attendants can thereby more readily mark their dispositions, as well as engage their attention to what is right, and divert them from what is wrong. These walking exercises should be directed along public roads and through villages; in short, the pack should be made familiar with every diversity of object, and each hound should become as handy and as docile as a spaniel. The best packs we ever saw were pet packs, in which each hound expected and received direct personal attention, and proofs of individual regard, as well from the attendants as the master. Gradually uncouple such of the young ones as appear the most steady; but it is recommended as a check, that the couple be still left on the young dog: we need hardly hint, that *coupling* up a dog after being uncoupled, is likewise a mode of punishing not easily forgotten. We will now suppose the huntsman and whipper-in to be mounted after the first exercisings, which will enable them to follow any refractory hound more readily. Here we will offer a hint that the intelligent huntsman will not despise: — the education of each hound should commence by well studying his or her disposition and habits. Is the temper marked by timidity, or is it characterised by sullenness, or by a disposition to open rebellion? On the other hand, is the dog of a warm but generous nature, that will repay kindness, and not be over offended at reproof? A previous knowledge of the temper of each hound will render the training, if conducted according to the disposition, an easy task; that is, provided both rewards and punishment be made to accord with their several dispositions, whether to receive instruction or to rebel against their duties. Whatever is done towards the training of hounds, we repeat, should be done with temper and firmness, but without passion: even the flogging, to make it effective, should be so given that the dog can distinguish between passion and a simple intention to punish a fault.

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ENTERING YOUNG HOUNDS TO RIOT.

1674. *The sensible huntsman will vary both his route and his practices* in taking out his young hounds each day. His dogs will be sometimes on the roads, sometimes in the fields, and at others they will be taken through villages, so as to make them familiar with objects generally, handy to turn, fearless of the horses, but guarded against their feet. If the huntsman and whipper-in ride in their exercisings side by side, cracking alternately their jokes and their whips, as we have seen done, their hounds will soon become wanton, and *fling their tongues*, and play their pranks in worrying all the dogs they meet with, or overturning the poultry, &c.; and, in fact, in doing every thing but what they should do. But with the huntsman at the head, and the whipper-in in the rear (*fig.* 245), or if there be two, a first and second, then the former in the centre and the other in the rear, the dogs clustering alternately around one or the other, all goes on well. Check every young hound that throws his tongue wantonly; nothing is more disgraceful to a pack than to hear a dog open-tonguing on every trifling occasion. But, on the other hand, the joyful outbreak of recognition which the affectionate hound offers to such as he is attached to, should not be rewarded with the whip. *Rating* also is sadly thrown away and misplaced, when it is heard on every minor occasion; for all trifling faults, be it remembered, the name of the dog pronounced with a tone, more or less acute in proportion to the offence, is sufficient: but let the loud rate and the heavy crack of the whip be reserved for graver offences.

TRAINING YOUNG HOUNDS.

1675. *Chastisement, when indispensable.* Use the whip but seldom, but when you do strike, do it effectually, that is, severely. This is true mercy, for it saves much future chastisement; and we would hope that we, who have spent so many years, not only in the attempt to combat the diseases of animals, but also in advocating a more humane treatment of them generally than, we are sorry to say, they experience — we would hope, we repeat, that no one will impugn our humanity when we say, *a due correction of them*, when absolutely necessary, particularly of dogs, is in strict accordance with humanity, inasmuch as it prevents numerous subsequent castigations, which confirmed bad habits otherwise necessarily bring on them. Neither do we hesitate to state it to be our opinion, that some of the public appeals, and most of the criticisms made on the writings of sportsmen by philanthropists, are, to say the least of them, erroneous, many of them entirely affected. Mr. Beckford's *Thoughts on Hunting* are an instance, in which similar instructions are most uncandidly and unmercifully reprehended; and yet we have reason to believe that his treatment of hounds was wholly devoid of cruelty, and that humanity towards his dogs was inherent in him, as we think the following quotation from his work will testify: — "Though all hounds ought to be made obedient, none require it so much as foxhounds, for without it they will be totally uncontrolable; yet not all the chastisement that cruelty can inflict, will render them obedient, unless they be made to understand what is required of them; when that is effected, many hounds will not need any correction at all, if you do not suffer them to be corrupted by bad example. Few packs are more obedient than my own, *yet none, I believe, are chastised less;* for, as those hounds that are *guilty of an offence are never pardoned*, so those that are innocent, being by this means less liable to be corrupted, *are never punished*.

1676. *Castration of unruly hounds*, is sometimes resorted to as a means of checking vicious propensities; it is also done in some cases to strengthen the weak loined dog. Bitches are sometimes also spayed, to quiet their irritability: which operations certainly have this effect, but it often enervates the animals. They may fill up the loins of the dog, and quiet the unruly passions of both dog and bitch, but both are inclined to become heavy and inordinately fat afterwards: it is however but just to say, that this does not always occur. We may again recur to this point.

Subsect. 3. *Entering and Drafting Hounds.*

1677. *The modern time of entering young hounds*, is very different from that of the ancients. Xenophon recommends eight months for the entrance age of bitches, and ten for that of dogs. With us, on the contrary, they must approach their second year, and with some they must have passed it, before they are actually put to work; but of course much must depend on the time when they were pupped. As to the time of year in which the entry is made, it can hardly be too early for the advantage of the dogs; but in corn countries the crops must be got in ere operations can commence. In grass countries it may be earlier; and in woodland districts, the young foxhounds may essay their prowess as soon as cub hunting can in decency begin; for we can hardly suppose that many of our readers would stoop any variety of hound to any other than his own game, except as a matter of necessity: but as their education must be preceded by a due acquaintance with the method of gathering the scent from below, and then carrying it with a gallant bearing on high, so the initiatory stooping is a matter of first rate importance, and must be proceeded with at all events, of which more anon.

1678. *Stoop the young hound to his proper game*, and to that only, is a maxim that ought not to be departed from but under very particular circumstances. The blood which he first tastes of his own killing, is that which he will in all probability ever after prefer, particularly if it be of the true vermin kind. "First impressions," says Mr. Beckford, "are of more consequence than they are in general thought to be; on that account enter young hounds to vermin only, use them as early as possible to the strongest and thickest woods and furzes, and they will seldom be shy of them afterwards: should there be martin cats in the country, take young hounds where they frequent; all hounds will hunt their scent eagerly, and the martin cat being a small animal, by running the closest brakes it can find, teaches hounds to run cover, and is of the greatest use. By being awed from hare and deer, and being taught to hunt only vermin, hounds will stop at a word, because that word will by them be understood, and a smack of the whip will spare the inhuman trouble of cutting hounds in pieces for faults, which (if entered at hare), they have been incited to commit." That hounds should be entered to their destined prey is so just a maxim, that it is well known to injure a pack of harriers to allow them to run fox; it makes them wild, and inevitably makes them skirters, if it be repeated often. Mr. Meynell, of sporting celebrity, nevertheless broke his foxhounds at hare, purposely, as he said, to find out their propensities, which enabled him to draft them accordingly. We question, however, whether the evils did not overbalance the benefits. Mr. Apperley also remarks on this seeming inconsistency, that "Their propensities, by which must be understood their steadiness, or the reverse, must, under such circumstances, have been rather difficult to pronounce an opinion upon, with the exception of their promising to be true to the line, and not given to skirt. The goodness or badness of nose could of course have been discernible when hunting their own game, the fox, to which, in our opinion, all foxhounds should be entered." It is however remarkable, that with this seeming discrepancy in Mr. Meynell's method of entering his foxhounds to hare, he prided himself on their steadiness, which was such that they would hunt through deer, hares, and sheep, most correctly, without any lifting whatever: but without doubt it must have required an extraordinarily severe course of discipline, and constant practice at the right scent to break them from the one, and to steady them so completely to the other. It is not easy, however, even under such high authority, to reconcile one's self to so perverse a method of ratiocination, as to sanction the encouragement of dogs doing that to-day, for which a few days hence they are to be flogged.

1679. *Young hounds now and then are stooped to a trail scent.* Compared, however, with former practices, it is but seldom done: we conceive, also, that little can be gained by this practice, except it be to exhibit their relative speed and action. However, of the two, we would even prefer the trail to entering them to hare; not only because of the latter practice unsteadying the young cry, but because the continual chopping of hares afterwards in cover is a great nuisance; it is inhuman, and is not relished by farmers and landowners. On this it has been remarked, that if the scarcity of foxes obliges you to stoop your hounds to hare, by no means blood them with her. But we prefer Colonel Cook's method, which is, to put some old dogs with the young ones, and, if possible, show them a young cub or two, which will most effectually destroy their relish for hare.

1680. *To prevent the foxhound from stooping to deer,* Mr. Beckford goes on somewhat in the following manner: — "I never trust my young hounds in the forest till they have been well blooded to fox, and seldom put more than a couple into the pack at a time. The others are walked out amongst the deer, when the men exercise their horses, and are severely chastised if they take any notice of them; they also draw covers with them, choosing out such where they can best see their hounds, and most easily command them, and where there is the least chance to find a fox; and on these occasions I had rather they should have to rate their hounds than encourage them. It requires less judgment; and, if improperly done, is less dangerous in its consequences: it is known that one halloo of encouragement to a wrong scent, more than undoes all that you have been doing."

1681. *Where foxes have been scarce,* or other circumstances forbad the disturbing the coverts, a badger has occasionally been turned out before the young dogs. Our last quoted authority tells us he has himself done this; and further, that he has known one to run several miles when judiciously managed; for which purpose he should be turned out in a very open country, and followed by a person who has more sense than to ride on the line of him. If he do not meet with a cover or hedge in his way, he will keep on for several miles; but if he do meet with a place to lay up, you will not be able to get him any farther. Badger hunting, however, as a stooping practice for young hounds, is not much patronised now: it has, it is true, a few remaining advocates, one of whom, our modern Nimrod, observes, "When Mr. John Walker had hounds, he gave a badger twenty-five minutes' law, and killed him at the end of an hour." Without doubt, however, we again repeat, the best entry of young hounds is that made by cub hunting, adhering to the old and just maxim, "Train up a child," &c.

1682. *When young hounds stoop to a scent, are become handy, know a rate, and stop easily,* we are told that it is then advisable to put them into the pack, a few only at a time; but it must be certainly hazardous to do this, unless the pack has been out a few times together, and the hounds gotten well into blood. We should also advise that they be taken at first where they are most sure to find, otherwise they may do that, *en gaietié de cœur,* which they would not think of at any other time.

1683. *Dog language is a very important part of the education of young hounds*, and the subject is particularly applicable where we are treating on initiatory processes. We know the dog to be gifted with such intellect as not only to understand the direct meaning of certain words, but also of many short sentences. Nor is this all; the same word or phrase, pronounced with more or less emphasis, produces a very different effect on his ear. We might go farther, and observe how accurately the dog marks what is passing in the mind of those around, by a steady observation of the countenance; which intelligence in him being now fully established as fact, it cannot be out of place again to introduce the subject of the necessity there is that the huntsman should not only have a strong and clear voice, but that both himself and whippers-in should intonate all the expressive words and phrases of common and daily occurrence as nearly alike as possible; and, above all, that their field language, whether the euphonious cheer, the loud halloo, or the harsh rate, should each have its distinct sound, and each its appropriate method of delivery. Mr. Apperley very justly observes, "There is something very cheering to the field in the full toned halloo of a huntsman;" and we would add that it is to the full as cheering to the hounds also! The votaries of the chase, both human and quadrupedal, have also, by long prescription, been accustomed to the tones of a brass instrument as an accompaniment to their sport. Mr. Beckford recommends the adoption of the straight horn (*fig.* 246.) instead of the curved French horn of ancient date, noted for variety of expression, and which calls to mind the slow-going periwiged hunting heroes of the age of Louis Quatorze. For our own part, we entertain the idea that foxhounds need not be gratified by instrumental music, since the fast packs both give us little time to listen to it, and treat us with but little music of their own. We should therefore say that the horn which is the most readily sounded and is heard the farthest is the best.

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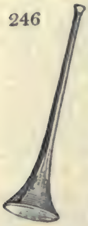

STRAIGHT HORN.

1684. *Drafting hounds in the formation of an effective pack.* When the young hounds of the late entry have been sufficiently tried, they are then drafted; or, in other words, only such are selected or retained as have given proofs of steadiness, scenting powers, packing well, &c. The remainder are the drafts made from those intended either to form a new effective pack, or, as is more common, to be used as recruits, and to be mixed with the older hounds. Of course, as some are drafted because they do not match in size, others are rejected because they prove too slow or too fast, too noisy or too mute, quarrelsome, skirters, &c. A superabundance of one sex may also increase the draft, and many other reasons besides actual defects may do the same. Consequently, it is not always safe for other owners of hounds, or those forming entire packs, to reject the drafts from established kennels; but it is always prudent to be doubly cautious in the purchase of such. When from any vicious adherence to any fault, or otherwise from not having determination enough, you feel inclined to draft a likely young dog, avoid doing it in haste: a little more discipline, judiciously applied, may remove the former; the latter may be occasioned by worms, or probably the distemper is hanging about the dispirited young one. Dogs thus drafted in a hurry have become the pride of another pack; and we must take leave to say, that exactly in the proportion of the excellence of any such does your want of judgment appear, and parting with the dog tell against you. Never let your huntsmen make your drafts; make them for yourself, or your very best hounds may be lost to you. Many huntsmen are more proud of their hounds than their money; but a great many more prefer money to hounds, and every other thing belonging to them.

1685. *Drafting for the chase is a very different operation to the foregoing*, and only means the selection made for the next day's run. First determine the number of couple to be taken out, which ought to depend on the strength of the pack, the nature of the country, and the number of days to be hunted in the week. In drafting for the day, much judgment is required: take such only as collectively will *carry a head*, and run *true to the line*, and whatever other error is committed, take out no unsteady hound. Mr. Warde's method of drafting for the field, as given by Nimrod, appears deserving of notice. His kennel book is brought to him every night, and as all accidents which have occurred to any of the dogs are noted in it, he makes his drafts or selection for the next day's hunt, with a due knowledge of the number and character of those he means to take out.

Subsect. 4. *The entire Formation of a Pack of Hounds.*

1686. *It is evident that to collect a really effective pack of hounds for the hunting of either fox, hare, or stag*, is not an easy matter. Nevertheless, as some one method may be presumed to be more eligible to pursue than all the others, the question is, What is that method? The forming a pack of hounds of drafts from other packs is a common mode; and where good specimens can be insured, it is not altogether ineligible to do so. But it is evident it must be an uncertain one, and also a tedious one, for the most promising young hounds are commonly retained by the breeders themselves; particularly it is so with such as have been entered: therefore, whenever necessity compels you to form either a foxhound, harrier, or staghound pack by drafts from other kennels, let it be done in the spring, from the unentered young dogs of some neighbouring pack of acknowledged goodness. In such case, provided the selection be uniform in height and symmetrical in figure,

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and the numbers taken be sufficient to allow of drafting again, there is some chance of forming a good pack. But even then it is desirable to have in hand a draft of steady hounds, which are to be kennelled and hunted with the young dogs, either before or after they have been stooped, and otherwise properly disciplined. There is, however, still uncertainty left, and it is by no means unlikely that you get such as are either old or vicious: it is true that, if your huntsman be a very able hand, he may drill the raw recruits so as to make them effective soldiers, without the aid of veterans. But in that case the first part of the season must be sacrificed, and the tempers of all concerned tried by ratings and blank runs, &c. Nevertheless, should you succeed, the merit of making an effective pack will be all your own, and it is no small one.

1687. *The purchase of an established pack of foxhounds* is strongly advocated by Colonel Cook as the preferable method of obtaining hounds. "Messrs. Tattersalls," he observes, "frequently have such to dispose of in the spring;" at the same time he very justly remarks, that "hounds have always been much undervalued: we sometimes hear of 800 or even 1,000 guineas as the price of a hunter, and the sum of three or four hundred is often considered a mere trifle; whereas, till very lately, a pack of hounds, *on which every thing depends*, was only considered worth a few hundreds." But surely a well-bred, established pack of foxhounds, including brood bitches and puppies at walk, must be cheap at 1,000*l.* or 1,200*l.* Mr. Corbet received 1,200 guineas of Lord Middleton for his pack, which, by his lordship, was considered rather in the light of a gift than a sale. Forty years ago, Sir Richard Puleston sold his pack for 700 guineas to the Duke of Bedford; and a good pack will seldom fail to find a purchaser at 1,000 guineas. Many have sold for much more. Mr. Warde sold his to Mr. Horlock for 2,000 guineas, in 1826, and in more recent times, Mr. Foljambe's realised in lots, at Tattersall's hammer, the enormous sum of 3,600*l.* One lot of five couple was sold for 390 guineas, and another of four couple and a half, for 480 guineas. This is the highest price ever obtained for a pack of hounds; next to which came the celebrated pack of "Ralph Lambton," for which Lord Suffield bid (unseen) the magnificent sum of 3,000 guineas, to take into Leicestershire, a Northumberland Baronet having previously offered 2,500*l.* in order to retain them in the north. Tastes appear to differ as to the value of foxhounds, for Mr. Beckford mentions a pack which were to be appraised with the mansion and furniture. When these latter had been valued, the appraiser was put in mind of the hounds. "Well, gentlemen, said he, "what shall I appraise them at — A shilling a piece?" "Oh, it is too little," was the reply. "Is it so?" "Why, it is more than I would give for them, I assure you."

1688. *The number of hounds necessary to constitute a foxhound pack* depends much on the nature of the country to be hunted over, and the frequency of the hunting days. "From twenty to thirty couples," Mr. Beckford observes to his friend, "are as many as you should ever take into the field. The propriety of any specified number must depend upon the intended strength of your pack and the country in which you are to hunt: the number necessary to furnish you for a whole season must also depend on the country where you hunt, as some countries lame hounds more than others." Taking out too many hounds, Somerville very properly calls an useless incumbrance. It is, however, not so material what the number is, as that all your hounds should be steady, and as nearly as possible of equal speed.

1689. "*When packs are very large,*" says Mr. Beckford "the hounds are seldom sufficiently hunted to be good. Few people choose to hunt every day; and if they did, it is not likely the weather in winter would give them leave. You would always be obliged, therefore, either to take out a very large pack, or a great number of hounds must be left behind. In the first case, too many hounds in the field would probably spoil your sport; in the second, hounds that remain long without work always get out of wind, and oftentimes become riotous. About forty couple, I think, will best answer your purpose: forty couple of hunting hounds will enable you to hunt three, or even four times in a week; and, I will venture to say, will kill more foxes than a greater number."

1690. *It is a great fault also to keep too many old hounds.* If you choose that your hounds should run well together, you should not continue *any* longer than five or six seasons. Extraordinary exceptions nevertheless, Mr. Beckford allows, may occur to contravene this rule. "It is however," he continues, "always prudent to keep a few couple more than you want for reserve, in case of accidents; since from the time you make your draft to the time of hunting is a long period, and their existence at that age and season very precarious: besides, when they are safe from the distemper, they are not always safe from each other, and a summer, I think, seldom passes without some losses of that kind. At the same time I must tell you, that I should decline the entering of more than are necessary to keep up the pack, since a greater number would only create useless trouble and vexation." Colonel Cook considers fifty couple of hounds equal to furnish an effective pack for hunting four days in a week; on which Mr. Apperley justly remarks, that this number would be amply sufficient, if it were possible to warrant that they should all remain sound, and that no bitches should require to be put by. The colonel considers twenty-one couple sufficient for the field in any country, and if all are good, they certainly are so: in Leicestershire eighteen couple are preferred by many of the crack kennel masters. A reason however why the pack should be very effective in numbers has been thus stated:—To kill foxes when they are strong, hounds must run as well as hunt; and for this reason a foxhound should always be above his work, which cannot easily be accomplished when hunted three or four days following; by this method the speediest hounds may by degrees be rendered slow. All hounds, we admit, go fast enough with a good scent; but it is the particular property and excellence of a foxhound, when rightly managed, to get on faster with an indifferent scent than any other sort of hound; but if this *dash* of the foxhound is to be tired down to the *puzzle* of the beagle, who, with his nose to one spot for an hour together will not leave the scent, and has no spirit to try forward, what can or must be the result? True it is foxes may thus be hunted from morning until night, but they will never be killed by such slack and improper measures; take away the impetuosity and enthusiasm of fox hunting, and it had better be entirely abandoned.

1691. *The expenses attending a pack of hounds of any description at the present day*, when contrasted with that of former times, appears to be very great. The fox hunting establishment of Edward the First, as gained from the comptroller's account for the year 1300, cost 23*l.* 7*s.* 1*d.*: those of Queen Elizabeth A. D. 1600, were, for her staghounds, 38*l.* 1*s.* 5*d.*; for her buckhounds, 121*l.* 11*s.* 8*d.*: her harriers cost 96*l.* 7*s.* 3*d.*; making a grand total of 269*l.* 7*s.* 5*d.* James the First, in the succeeding reign, was less economical in his hunting expenses, as they are stated to have amounted in one year to 843*l.* 15*s.* 5*d.*, which amount, when we compare the great difference in the value of money between that period and the present, was greater than the annual cost of the royal sporting establishments of any of our later kings.

1692. *Colonel Cook's estimate of the expenses of a pack of foxhounds*, as formed for the information of a friend, runs thus:—"At the present rate of taxes, supposing the price of corn, meal, hay, &c. to be what it is now, I should say, for twice a week only, twenty-five couple of effective hounds would be sufficient; and, supposing you hunted your own hounds, and had only one whipper-in, five horses, and a hack for yourself and servant, would be quite enough. You must also have a groom, helper, and a feeder; making in the whole four men, five and twenty couple of hounds, five hunters, and a hack: the expenses of earth stopping will depend upon the country. (*Thoughts on Hunting*, p. 188. 190.) The calculations of the colonel are as follow, but with this notice, that if you do not attend to the kennel department yourself but keep a huntsman, the expenses will be at least 300*l.* a year more: —

The expenses of a foxhound pack for hunting twice a week.

Six horses, including groom and helpers - -	£300
Hounds' food, for twenty-five couple - - -	150
Firing - - - -	30
Taxes - - - -	80
Whipper-in and feeder -	140
Earth stopping - -	50
Sadlery - - - -	40
Farriery, shoeing, medicine, &c. - - - -	50
Young hounds purchased, and expenses at walks - -	60
Casualties - - -	100
	1,000
A second whipper-in and two horses in addition - -	170
	£1,170

Expenses for three times a week.

Twelve horses, groom, helpers, &c. - -	£600
Hounds' food for forty couple	220
Firing . -	40
Taxes - - - -	100
Two whippers-in and feeder	210
Earth stopping - -	65
Sadlery - - - -	80
Farriery, shoeing, medicine, &c. - - - -	80
Young hounds purchased, and expenses at walks - -	80
Casualties - - -	150
	£1,625

Expenses for four times a week.

Fourteen horses, &c. -	£700
Hounds' food for fifty couple	275
Firing - - - -	50
Taxes - - - -	120
Two whippers-in and feeder	210
Earth stopping - -	80
Sadlery - - - -	100
Farriery, shoeing, medicine, &c. - - - -	100
Young hounds purchased, and expenses at walks - -	100
Casualties - - -	200
	£1,935

1693. *The above not to be relied upon now.* Independently of prices having greatly risen since the above was written, as no two domestic establishments are identical in point of expense, so will no two hunting ones be found to approach any nearer. Indeed, the difficulty of framing any reliable scale of expenditure is best evinced by the fact of no one having attempted to do so except Col. Cook, who wrote in 1826, from experience derived at a distance from the great hunting countries. Still the Colonel's estimate is useful, as furnishing the heads under which hunting expenses may be classified, though, after all, the late Lord Petre's observation, "that a master will never have his hand out of his pocket, and must always have a guinea in it," will be found to be correct. Hunting expenses, indeed, have increased of late years in a way that is any thing but beneficial to the sport, deterring all but men of very large fortune from undertaking a country, from which they are too often quickly lured by other attractions. They are then found to have done the thing so magnificently that they are difficult to follow. The lamented Sir Richard

Sutton reckoned that his last year's occupation of Leicestershire cost him 12,000*l.*, while we have seen a ducal establishment kept equally well, under 2,000*l.* To be sure, Sir Richard hunted seven or eight days a week, if we may so express it, having two packs out on certain days, while His Grace is contented with four days; but still there was not the difference of sport to compensate for the great difference of expense.

1694. *Most packs of fox hounds are kept up by subscription*, though a few noblemen and gentlemen still maintain their own establishments. Among them may be mentioned the Dukes of Buccleuch and Cleveland, Lords Stamford, Southampton, Fitzwilliam, and Yarborough, Sir M. Berkeley, and Assheton Smith, who, at 82 years of age, has 100 couple of hounds in his kennel. Mr. Farquharson has kept fox hounds for 50 years at his own expense, though we believe he retires after the present season, 1857–8. Of the byegone school, who have added lustre to the sport, should be mentioned the great Hugo Meynell, the founder of the Leicestershire school of sportsmen; the equally great John Warde, who shone in the adjoining county of Northampton; and the renowned Ralph Lambton, long the pride and glory of the North.

CHAP. VI.

THE PRACTICE OF FOX HUNTING.

1695. *Fox hunting* requires many auxiliaries in the way of horses, dogs, and men. Of the two former we have already treated, and it remains now that we turn our attention to the human agents in a fox chase; among whom, as occupying the first rank in importance, is the master of the hounds, or "M. F. H." as that great sporting luminary, Mr. Jorrocks, calls him; next are the huntsmen and whippers-in. There are minor agents also, as hunting grooms, pad boys, &c., stable men, kennel men, earth stoppers, &c., &c. The M. F. H. will meet with our respectful attention, whenever it is necessary for us to notice him officially.

Sect. I. *The Huntsman, Whippers-in, Grooms, &c. as necessary Agents in Fox Hunting.*

1696. *A huntsman is a very important individual among the dramatis personæ of the hunting establishment.* Mr. Beckford would have every huntsman to be young; but we do humbly think that, provided the pack be furnished with an active first and second whipper-in, the hounds will probably be better hunted by one of maturer age, but nevertheless one neither old nor slow. The ardour with which the sport is pursued defies the hand of time; and though the leaden wings will eventually cramp even fervour, many reach their grand climacteric before any thing slow begins to appear in their practice. We have seldom seen a very young huntsman with sufficient experience, or with that coolness of judgment which helps him to the readiest road out of difficulty. Strength of body, activity of mind, determined courage, and excellent horsemanship, are essential requisites in the composition of a huntsman; and if he be so tempered as to unite civility with firmness, and ardour with patience and discretion, fortunate is the master who obtains him. He should be quick, but not precipitate: if not quick he will soon make his pack slow; but if quick and yet discreet, his pack will be all alive like himself, and on the look-out to do his bidding. It is requisite that he should not only be a good rider, but also that he should have such a knowledge of the powers of horses generally, as will enable him to manage any one in a run according to the display he makes of those powers. Two horses, equally good, yet may require somewhat different management, to insure both being *where* they should be, and *in the state* they should be at the end of a run. "His eyes," as observed by Mr. Beckford, "should be so quick also as to perceive which of his hounds carries the scent when all are running; and he should have so excellent an ear, as always to distinguish the foremost hounds when he does not see them. He should be quiet, patient, and without conceit; and should let his hounds alone when they can hunt, and should have genius to assist them when they cannot." Some huntsmen very erroneously suppose that every young dog that challenges does it as riot only, and therefore proceed to flog him; in which case, should the young hound be right, he is checked by such punishment, and, probably, it will be long before he dares to open on the scent. It would be better, towards a hound of promise, to cheer him on first, and then, having ascertained that he was really in fault, punish him; but when at an uncertainty on this point, draw the old hounds to the challenge, and they will settle the matter at once.

1697. *A huntsman should be an enthusiast in his vocation;* indeed, the pursuit not only requires it, but it is of a nature to beget it also: thus many instances have occurred, where no temptation has been sufficient to abstract these persons from their calling, for with them it becomes the master passion; dangers are laughed at, pain is despised, and that only is deemed a misfortune which interrupts the loved pursuit. The tedium of summer could not be supported by the ardent huntsman, were it not spent in preparations for a glorious opening of the ensuing winter: the raw recruits are drilled and marshalled by him for the purpose, and with ecstasy he marks the tact of one, the patience of a second, and the dash of a third; he is in love with Bluelass for her beauty, and the notes of Tuneful enchant him as she *throws her tongue*.

1698. *Tact is an essential in the composition of this great pack agent.* Mr. Smith, in his interesting *Extracts from the Diary of a Huntsman*, offers something like the following, as an illustration of the tact necessary in this personage: — "Supposing that a pack be in full cry, and that the quick eye of the huntsman should see a known good hound turn his head and *fling* a pace or two to one side, he in all probability will note it, because the hound which did it usually runs true to the line: however, it so happens that in a very little time there is a check, and now is the time when the huntsman's tact becomes apparent; for, remembering the swerve of the favourite whom he knows to be no liar, he first makes his cast, and then draws his dogs to the spot he noted, and they immediately hit off the scent. The good huntsman also will not be content with what he can teach his dogs, but will also study and learn from them many a lesson worthy of his remembrance; for the old hound becomes perceptibly wiser and wiser each season of his hunting, one remarkable proof of which is, that when his powers weaken, although his zeal remains the same, he will then, to answer his own ends, let the younger hounds do much of the early work in the chase, reserving himself for the finale, when he makes a rush to the head, and secures the admiration of the company. A truly good huntsman, however zealous in the sport, will not wantonly destroy foxes; but, on the other hand, he will not willingly disappoint his company, his dogs, nor himself, of a kill or a run to ground: and it may be added, that when foxes are not killed unfairly, it is not the united exertions of the best pack that will thin them: if, also, the farmers are to be conciliated, so as to allow their grounds to be torn up and their fences trodden down, it must be by a satisfactory account of the deaths that occur. Every fox that is killed, the wife thinks is so many fowls saved; for which, and many other reasons, the huntsman is justified in killing whenever he can do it in a fair workmanlike manner. Much of this success, however, will depend on his horsemanship; and, indeed, every huntsman to a crack pack should ride fearlessly: it is, however, only on certain occasions that he is required to ride desperately. In most cases he must ride as fast as his hounds, if it be only to prevent others from over-riding them: nor is it less necessary that he be at the head, is proved by what occurs so frequently when his dogs come to a check, and he be in the rear. While he is at the head, he sees where the dogs throw up, and then his judgment will in all probability direct him what to do. Neither is this forward riding of the huntsman on this account alone, but it is equally so that he may check the injurious impetuosity of those who do so much mischief to the legitimate sport of fox hunting by reckless riding, as though a steeple and the chasing of it were the objects in view. Here the real tact of the judicious huntsman may be shown to advantage, in checking the reckless riding of these gentry without giving offence. Mr. Smith, in his clever instructions to huntsmen, if we remember rightly, advises that if a huntsman feels it actually necessary to speak to any individual or individuals, it should rather be at them than to them, as "Pray, pray black horse, do hold hard!" or to that effect.

1699. *The kennel duties of a huntsman are to breed, rear, and train the young hounds.* It is he that must take the lead in the feeding of them, and it is he that must combat their ailments. He will be expected to bring his dogs into the field in high form and condition, at once elevated with hope, and yet submissive to every look and word of himself and whippers-in. The condition of his hounds will be mainly dependent on his apportioning the quantity and quality of the food to their different constitutions; each should have that which will give strength without encouraging unhealthy fulness. To do this requires quickness of sight, and direct attention to each individual of the pack; but it is, unfortunately, too much the practice of huntsmen to leave all this to the feeder, who, let him be as good as he may, cannot form so correct a judgment of the *working condition* of a hound as he who takes them out and sees them at their work. One hound will take the field by no means full to appearance, and he may go through a very long and severe run, and yet return comparatively but little finer drawn than when he went out; another, on the contrary, will turn out in the morning to all outward appearance bloated, but he returns tucked up and knocked up, and, furthermore, he may require two or three days to bring him round again: he has been wrongly managed; he ought to have been principally flesh fed; but, having been left to the feeder's care, his particular situation was not understood, and hence has not been done justice to, though in nature a good dog but tender. Mr. Beckford, with his usual acumen, notices the intelligence required in feeding hounds, and applies it to the necessity which exists of a perfect huntsman being as good in the kennel as in the field, the field performances being much dependent on the judgment displayed by him in feeding his hounds, with which we cordially agree: — "You are not aware," he says, "that some hounds will hunt best when fed late; others, when fed early: that some should have but little, that others cannot have too much. I shall only advise you, while you endeavour to keep your hounds in good order, not to let them get too fat."

1700. *The huntsman's duties in the field*, being as varied as they are important, induces us to recur once more to the subject. He is looked up to by all; there he marshals his forces, and the greatest general of the age is not more proud of his victorious troops than the huntsman of his sleek sided and gaily diversified hounds, as they cluster about his horse's heels, and become the subject of the scrutiny of those around. A huntsman should have a strong, clear, and sonorous voice, that all his dog language may be *talked* and *cried* with effect. He ought to be equally good on the horn; we do not mean the straight horn of Mr. Beckford, but the true fox hunting bugle, which he ought to be able to use with effect: it must, however, be blown with discretion; when it is continually blasting throughout a chase, the hounds notice it no more than the parish bells. The horn, it must be remembered, is an aid principally wanted where the voice cannot be heard; therefore it is in some cases indispensable, as in very large covers, over which the strongest voice cannot reach. It is well also to observe that there are two parties, the blower and the hearers; and as the horn will afford many intonations, we reiterate that they should be made as pleasing as possible, and so clear and distinct, that the blower and the hearer must perfectly understand each other. Certain notes must convey certain meanings, and none other, which both dogs and attendants should be well acquainted with. The further duties of the huntsman will become apparent as we proceed.

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CURVED HUNTING HORN.

1701 *The situation of a huntsman in many respects is an enviable one.* The popularity, attention, and pecuniary remuneration, which a huntsman of known abilities acquires, are great, and more particularly so if he exhibit the *suaviter in modo, sed fortiter in re.* He must be obliging, if he desire to become popular; and firm withal, if he intend to command respect. It is true his duties are arduous, and his pursuits dangerous; and to this latter point we presume we are to ascribe the humane hints which have been thrown out, of the propriety of establishing a fund for such huntsmen, and, as we suppose, whippers-in also, who by old age, disease, or accident, have become incapacitated for earning their own livelihood, a proposition in our opinion worthy of every encouragement; for, considerable as are the emoluments of some huntsmen, yet the general average of wages is moderate, while the conversion of many private establishments into public ones deprives old servants of that refuge for old age about family houses that the nobility and gentry used to provide. Many subscription establishments, indeed, are conducted in a very economical hand-to-mouth way, enough for the day being the expenses thereof, and in many cases more than sufficient. The stage coachman had a fund of this sort, which indeed we believe is still in existence, and certainly it was not more desirable for them than it is for field servants.

1702. *Capping is now nearly done away with*, though we cannot but admire the spirit of the man who, at the close of a good run, puts something quietly into the hand of the huntsman, especially if the donor be a stranger from whom the Christmas "tip" is not to be expected. As a daily practice it can only be excused in popular neighbourhoods, such as Brighton, Cheltenham, and so on, where each meet draws strangers who may not appear a second time, and parties from whom a contribution is not to be wrung in any other way. With the exception of one at the close of a very good run, we think the Christmas present is more becoming, and as most countries take their "cue" from Melton, we may add, that a *5l.* note among the servants of each of the three hunts, — the Quorn, the Belvoir, and the Cottesmore, is considered sufficient.

1703. *Some gentlemen hunt their own hounds*, but when they do so, they ought either to be fully equal to the task, or the hounds should be literally their own, *i. e.* kept at their own expense, so that they can do what they like with them. Few gentlemen have the requisite patience combined with the temper necessary to keep a modern field in order. Poor Sir Richard Sutton, one of the most amiable of men and liberal of sportsmen, suffered sorely from the pressure and jealousy of Leicestershire crowds, which his too gentle nature was not formed to control. Still no better man or sportsman ever adorned the hunting field than Sir Richard, and his name will ever be cherished with the kindest and fondest recollections. Ralph Lambton was a great sportsman, a great rider, and a great commander in the field, and long hunted his own hounds with only indifferent success; but when, on the occasion of one of his lamentable accidents, he resigned the horn to his first whip, John Winter, who had been his pad groom in Leicestershire in the days of Old Meynell, the pack soon began to nail up their 50 brace of noses, and continued to do so above twenty years, until they were sold to Lord Suffield. The fault of gentlemen huntsmen in general is, that they are too anxious, in too great a hurry, and want to tell the hounds which way the fox has gone, instead of letting the hounds tell them. From this category, however, must be excepted Mr. Smith, formerly master of the Craven hounds, who has a most instinctive knowledge of the run of a fox, and can time one to almost any point.

Mr. Osbaldeston was a good huntsman; so is the Earl of Wemyss, who, as Lord Elcho, graduated under the "Squire" in Leicestershire; and Lord Gifford, Mr. Drake, and others, are not to be surpassed at the present day; still, on the whole, we are inclined to reiterate the words of Dick Bragg, in Sponge's Tour, — "Dim all gen'lmen untsmen, say I!"

SUBSECT. 1. *The Whippers-in, Hunting Groom, Pad Boy, &c*

1704. *The duties of the whippers-in are not greatly inferior to those of the huntsman.* Where two are employed, as is usual in large establishments, the head whipper-in is a personage of no small importance. Mr. Beckford appears almost inclined to prefer an excellent whipper-in to a good huntsman. Two whippers-in are really necessary to every effective pack of foxhounds; for one ought to be always at hand to turn the hounds when at fault, while the other is bringing up the tail hounds. The first whipper-in, we repeat, may be considered in the light of a second huntsman; and his qualifications require, not only that he should be able to assist the huntsman by his skill and judgment, but also that he can efficiently fill up the huntsman's place, both in the kennel and the field, when the huntsman is absent. This capability, it has been observed, serves another useful purpose, which is that of keeping the huntsman in order, who is apt to assume much when he thinks that the pack cannot do without him. It is the duty of the first whipper-in to narrowly watch the dogs, which his situation in the rear enables him to do; it is he that must correct riot in the wilful hound, who has thrown his tongue a second time in cover; but if he rates while he corrects, it must be in words and a tone that cannot be mistaken for a view-halloo. But whatever fault a hound commits, if he cannot correct him or her on the spot, by no means is it good policy to take an opportunity of doing it when the dog has forgotten the deed he is punished for. Suppose the dog is not reached until the first check, when, the pack being busily engaged on a cold scent, that then the whipper-in should lay the whip heavily on the offender, in all probability the hunting dogs would lift their heads, and perhaps not get them down again. On the contrary, let the whipper-in keep tolerably close to this culprit, and the moment he offers any further appearance of riot, then let him lay the whip well into him, when both the delinquent and the rest of the pack will understand the reason. It is the business of the whipper-in to do that which the huntsman's situation prevents his doing himself. A valuable authority on this subject observes, "If a halloo is heard at a distance by the whipper-in, and neither the huntsman nor hounds hear it when at a check, he, the whipper-in, had better get half way between the halloo and the hounds, and then halloo himself till the hounds or huntsman come, but farther he should not go; for if he went all the way to the halloo, there would be the same chance of his not being heard also." Much will depend, in many cases, whether there be one or two whippers-in, and whether the cover entered be large or small. We will suppose it a large one, and that it presents almost a sure find. If only one whipper-in be present, he had better remain with the pack; and more particularly will this be prudent, if he has many newly entered dogs in the pack, for in such case his absence will engage these youngsters in a scene of riot. On the contrary, if there be two whips, which it is always advisable there should be at the early part of the season, one of them taking the wind with him should make the best of his way, that, should a fox have made an early retreat, and as it has been observed, it is usually the craftiest and one likely to show the best sport that takes the earliest alarm, so it is prudent not to lose sight of him. Where two whips are out, both should use their energies for the general good: they should keep the huntsman in their eye, one near enough to do his bidding at once, the other farther a field, and more in the outskirts, as such has been the practice in the best hunts we have ridden with. Whippers-in should be young men but not boys: they should also be of light weight, ride well, and be well mounted; the first particularly should be so mounted, as he will probably be most engaged. Many circumstances may occur in a run where the use of two whippers-in are required. In no one does this necessity become more apparent than when two scents are taken up by the hounds, occupying the extremes of the pack, which is thus divided. Here one of the whips joins the vagrant train, flogs them off, and rejoins the rest. The second whipper-in, except it be to very crack packs, is often little more than a young groom; but with some packs the second huntsman is required to be *aufait* in all field practices, and be equal to take the place of the first whipper-in. He must, however, avoid interfering with the hounds in their work, and stay in the rear as long as one hound remains to be brought forward, particularly from cover: nor should he either rate or cheer the hounds, but on occasions when it is actually necessary, and cannot do hurt. He should, however, have an eye out to check riot, particularly when it occurs in the rear, where it is often of more consequence than more a-head, by distracting the attention of the leading hounds. A conceited second whipper-*in* should, as soon as possible, be whipped *out*.

1705. *The hunting groom is likewise an important personage in a hunting establishment.* Not only will the stable duties in general be under his direction (unless the establishment be so large as to employ a professed superintendent), but he will also have to take his master's hunter to the field, and return with the cover hack. Sometimes he acts the part of what is now called the second horseman; in which case he usually rides his master's first hunter, and leads his second; on which, after the start, he follows, not in the track of the hounds, but, from his knowledge of the country, he makes for certain points, so as to fall in with, and deliver up the fresh horse to, his master when wanted. This very convenient method of being doubly horsed originated, we believe, with Lord Sefton. *Jerry the groom*, before noted, has also something to the purpose to say on the duties of the hunting groom:—"When you have ascertained from your master which of the horses is to hunt the next day, and where the hounds are to meet, take care not to be behind hand, but set out in the morning time enough to arrive at the meeting-place, at the rate of four or five miles an hour: some horses will go six miles an hour without sweating, while others will only go four. When the cover is more than fifteen miles distant, you should, if possible, set off over night; and when you do this, take with you such things as you are likely to want; such as horse-cloths, brush, comb, sponge, leather, cloth, &c. Most of these things may be carried in your pocket, but you can roll up the horse-cloths and tie or buckle them before you, like a coat, or you may put them under the saddle, or sit on them over the saddle, and put the roller round them; take also a head-collar with you, as it may be difficult, perhaps, to procure one on the occasion. If you set off to cover the morning you are to hunt, taking two horses, ride the quietest, and put a cloth on the saddle of the other if it be likely to rain: should you not be provided with a cloth, and an unexpected shower overtake you, the saddle may be kept dry by tying the flaps over it with a piece of string attached to the girth-buckles on each side. If your master wishes to have his great coat taken, roll it up tight, and buckle it on before you; and likewise, if your horse likes to go a slow trot, let him, and that will keep you warm. Should the meeting-place be near the wood which they are about to draw, you will observe that huntsmen will keep as far from it as possible, for fear of disturbing the fox, and you must do the same. Ride in a quiet way, with almost a loose rein, and when arrived at the place of meeting, keep your horses moving, to prevent their chilling; but first dismount, and, if possible, get the horses into a farm-yard, if there be any near, among the straw, where it is most likely they will stale and thus refresh themselves." (*Young Groom's Guide*, p. 66.) The Meltonian groom may smile at all this, but Melton Mowbray is not all the world; and if it were, there is so much pith in these plain directions as, when stored up, will make the stable boy a good groom, and withal a very useful servant generally; and we therefore hope these high minded *élite* of Dian's train, will excuse us and patronise the book, because it tends to good, by affording instruction to a class, useful but opinionated. We know the prejudice against "tea kettle grooms" and "booted valets;" but single men can never be *doubly cursed*, until they have double the number of men or boys lounging about, more than they have work for. If, reader, your philanthropy should lead you to take a parish boy into your service, to grow into either a groom, or valet, or both, present him with this little work, and he will have reason to thank you.

1706. *The pad boy, pad groom or second horseman*, as he is sometimes called, is of the stamp of the former, but perhaps somewhat less efficient and less confidential. He follows his master to the field with a second hunter, and is principally seen in the crack hunting countries, although there can be no possible reason why the ardent sportsman of every other locality, if his means permit, should not do the same; and we know it is done, particularly by welter weights. This stable agent, under whatever denomination he takes rank, should be of light weight, should well know the country he is to go over, and the probable course of the hounds; but particularly he should know the cross-roads, bye-lanes, and commons, so as to be able to skirt and cut across the country, chopping in on his master here and there, to afford him the opportunity of changing his horse if necessary. He must keep the cry of the hounds always in his ear, and make his points accordingly, observing, particularly, if the cry slackens, to push forwards when he has reason to anticipate a check. Having changed horses with his master, he must be attentive to the state of the tired horse, and act accordingly; for instance, if he be very much blown he will not mount, but lead him clothed with the sheeting he has brought with him, until he has somewhat recovered himself. He may then proceed homewards at a gentle pace, not allowing the hot dinner at the third table to allure him into a gallop, nor mine host of the village alehouse to entice him in to drink and a gossip, while the tired hunter is shivering in a cold apology for a stable, or under a cart-shed. This neglect of the horse has been the actual death of many, and of serious injury to thousands of horses. It would be wiser to put up with personal neglect, than to overlook it towards a horse: no truly good servant will do it. When it is done, however, use one remonstrance; but be on your guard: and the next time it is repeated, make it the last, by discharging such servant at once, or more and more mischief will ensue. The servant who is dishonest towards the horses under his charge, will rob you when he can; and we ourselves had rather suffer by the latter than by the former.

1707. *The cover hack, of which we give a sample of the old sort* (*fig.* 248.), *is a most valuable appendage to the hunter's comfort,* as it enables him to ride to the fixture quickly, over ten or a dozen miles of ground, whether that happens to be along a high road or a cross country. In such case it is good policy either to send the hunter on the night before, under the care of a trusty servant, to some good inn near to the place of meeting, or otherwise to let him be walked there in hand. A moderate walk of four or five miles to covert serves to empty the horse, supple him, and bring him into wind; but to take a horse sweating from any cause to the place appointed, with the chance of waiting either the arrival of the pack, or the delay in finding, is imprudent in the extreme. The horse in such case becomes chilled, his limbs stiffen, and if he do not take a serious cold, it is some time before he is able to handle, as we may say, his legs with his accustomed lithesomeness. Our advice, therefore, is to let the servant walk the hunter to the covert side, and the master to trot there on his hackney.

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COVER HACK.

Subsect. 2. *Technical terms used in Fox Hunting.*

1708. *The halloo of fox hunters* (for there are halloos also in every variety of the chase) in a general sense, includes every shout used during a run, whether as a view, a call, a cheer, or a rate. Consequently the halloo is not more extensive in signification than varied in its application, and when considered as the root of all the following shouts, it may be said to be the most important word in the vocabulary of dog language. Halloo, as a simple cry, has however a more limited acceptation, which principally confines it to what are called view halloos or shoutings. The halloo even in this sense is an important measure in the music of fox hunting; and we read of the "thrilling halloo" of some sportsmen, which are received by true sporting hearers with as much *gusto*, as are the notes of a Catalani, or a Braham, by the musical *cognoscenti*.

1709. *To halloo effectively is a great feather in the cap of the fox hunter*, and one more often attempted than performed. We were present some time since at a sporting dinner, when the spirits of the numerous guests, and the bottles of the landlord, were running at three-quarters speed; nevertheless, of the assembled company, there were four only that essayed the hunting calls. But dead must that ear be that would not have been roused into ecstasy by the inspiring sounds given as they were. Even Jerry nibs his pen, rubs his eyes, and snuffing his stable candle thus learnedly discourses on the *halloo*: — "Whenever you do halloo, do not do it like a tailor, but like a sportsman with a good long halloo." The hint is good, but Jerry goes much further, having actually pricked down the shouts in score for our further instruction as follows: — "H-o-u-y, h-o-u-y, h-o-u-y! t-a-ll-y-ho, t-a-ll-y-ho, t-a-ll-y-ho! g-o-n-e-a-w-a-y, g-o-n-e-a-w-a-y, g-o-n-e-a-w-a-y! The first halloo is for the hounds, the last for the gentlemen, for all the field likes to get away with the hounds." (*Groom's Guide*, p. 71.) Surely after this we must differ with the humourous Beckford, who, having occasion to tell us he never could halloo in his life unless after hounds, adds, "The writing a halloo appears to him almost as difficult as to pen a whisper;" and, he might have added, to write a sigh.

1710. *Tally-ho, taa-leo*, or *taa-leo away*, is a joyous shout to the sporting ear, it being given to signify that the fox is viewed, making off from the cover, and all hear the inspiring news with delight. Tally-ho is also repeated whenever the fox is afterwards viewed during the chase. It must however be remembered that this call, injudiciously cried, has lost many a good run. We saw a fox make an effort to break from a gorse cover. At the moment *Mr. Green* tallyhoed him, Toddy re-entered the gorse, and what became of him no one knew, but he was never seen after. When we hear *tally-ho-back*, it signifies this unfortunate turn in the sport. *Hey-elope-elope* is a call for the remaining hounds which are left in the cover.

1711. *Hark, hark*, is one of the shouting exclamations used in fox hunting, and when given with energy, is sure to command attention. *Hark* to Towler, the huntsman cries, and men and dogs obey; for the old boy is not given to tell untruths. Each dog therefore raises his head and listens, and when Towler again gives tongue, a general rush is made towards him. *Yoick* or *yooi yoicks! Have at him there! Push him up!* then cry the attendants as encouraging sounds towards the hounds, who with busy noses sniff here and there, while their sterns feather to the vermin taint. *Edawick* is a cheer which also encourages the hounds to draw. *Hoick* or *yoic* is an important cheer of a mandatory character, and is the same with *hark*. Thus *hoick together, hoick*, to bring the hounds to one point, and *yohole there*, to make them hunt.

1712. *An indiscriminate use of any part of dog language*, is however very injurious to the perfect understanding that should exist between the huntsman and his hounds. When too often repeated, shouts of every kind lose their effect, and a noisy huntsman is worse than a silent one. For instance, when well up with the running pack, a halloo then given cheers the crier and the hearers, be they men, horses, or dogs, one and all catch the enthusiasm. "Halloos," Mr. Beckford observes, "seldom do any hurt when you are running up the wind; for then none but the tail hounds can hear you: when you are running down the wind, you should halloo no more than may be necessary to bring the tail hounds forward, for a hound that knows his business seldom wants encouragement when he is upon a scent." Again, "When a fox is hallooed, those who understand this business, and get forward, may halloo him again; yet let them be told if the hounds go the contrary way, or do not seem to come on upon the line of him, to halloo no more. With regard to its being the hunted fox, the fox which every man halloos is the hunted fox in his own opinion, though he seldom has a better reason for it than because *he* saw him. Such halloos as serve to keep the hounds together, and to get on the tail hounds, are always of use: halloos of encouragement to leading hounds, if injudiciously given, may spoil your sport. I am sorry to say view-halloos frequently do more harm than good; they are pleasing to sportsmen, but prejudicial to hounds. If a strong cover be full of foxes, and they be often hallooed, hounds seldom take much pains in hunting them; hence arises that indifference which sometimes is to be perceived in foxhounds while pursuing their game." We believe there is not one intelligent and observant fox hunter that has not been struck with the bad effect of hallooing too much, and equally of doing it at a wrong time: liberties of this kind ought not to be taken with any hounds, either by tyros or strangers; indeed, it would be well that none did it who had not, as it were, served an apprenticeship to the pursuit. Can we wonder that the masters of packs are sometimes forced into severe reproofs to offenders? It is not every temper that can reprove thus mildly. "A gentleman," Mr. Beckford tells us, "perceiving his hounds to be much confused by the frequent halloos of a stranger, rode up to him, and thanked him with great civility for the trouble he was taking; but at the same time acquainted him that the two men he saw in green coats were paid so much by the year *on purpose to halloo*, it would be needless for him, therefore, to give himself any *further* trouble."

Subsect. 3. *Cub Hunting.*

1713. *The fox hunting season is usually ushered in by cub hunting*, which commences with some ardent spirits as early as August, but is not general until September. Even then, however, the hedges are full of leaf, and consequently the fencing is often to be taken over blind places; the weather likewise is frequently very hot, and if any other than the young hounds of the last entry are employed, the match against the young cubs cannot be called a fair one. But when cub hunting is pursued as an initiatory practice for the young pack, it is then admissible, as it settles them better to the game they are in future to pursue, than either badger, hare, or drag scents. Mr. Beckford, who, as far as we remember, does not even mention cub hunting as a regular sport, often notices the expediency of *turning out* (not drawing for) a young fox in August or September to stoop his young hounds to the right scent, and to blood them to the right game. Colonel Cook, on the contrary, strongly advocates the practice of cub hunting, and observes, a thorough knowledge of the pack is gained by it; and on this account he recommends that no master of foxhounds should be absent at this season. Cub hunting must however distress any other than a very extensive country, by destroying too many foxes; indeed, we believe it is not common to cub hunt in the country intended for the winter practice. It is however different with some pack masters. Cub hunting, says Mr. Smith, late master of the Craven hounds, should not be put off until late in the autumn; and although it may seem contradictory, this authority presses its being undertaken early, if it is intended to preserve the breed of foxes; to which end, he observes, it is of the utmost importance, and more particularly so in the game countries. Nothing, he thinks, tends so much to the safety of the foxes from the poachers as to move them early by cub hunting: they then do not hang to the spot of their nativity, and thus escape the snares of keepers and poachers: he also prefers the evening to morning cub hunting, for the longer you run the cooler it gets, and the cubs are lighter and run better than in the morning. The only disadvantage is, there is apt to be a greater number of attendants in the evening chase than in that of the morning, who are not unlikely to ride over the young hounds of the new entry, particularly in the woods and cover rides.

1714. *When the young entry become settled to their game*, the older dogs are gradually introduced among them. In this way cub hunting, we should think, is admissible by all, and is less unfair, as the young foxes are become strong. Cub hunting, after the olden method, is most practised by sunrise, for in September the weather is often so intensely hot, that it would be dangerous both to horses and dogs to be running after nine o'clock. Colonel Cook lost three valuable dogs by convulsions, brought on by the heat of a September cub hunt.

Sect. II. *The Fox Chase.*

1715. ***Written instructions on fox hunting ought to embrace generals only***, the minutiæ must spring from the judgment and experience of the sportsman, who being well grounded in principles, is seldom at a loss for resources, or likely to err widely. Some learn by practice, which, though the slowest, is the surest method; others gain their earliest information by precept, and secure its benefits by practice and example. Theoreticians might shine to great advantage would they enter the field merely as learners; but unfortunately they are apt to consider themselves to be already fieldsmen, and expose themselves accordingly. But when experience and practice have followed well grounded theory, there is great chance of becoming an excellent sportsman. Fortunately for learners, we are not now in want of written instructions upon hunting, which exhibit excellently well the theory of the sport we advocate. Mr. Meynell's practice of fox hunting, and his opinions on the subject fortunately did not die with him, but have been exhibited to the public through the medium of Mr. Hawkes, an intimate friend, in a pamphlet entitled, *The Meynellian Science of Fox Hunting upon System.* Somerville also will live so long as hunting and poetry have powers to charm. Beckford is too well known to need our eulogium, his writings still forming the text book of the disciples of the school of venation Col. Cook's *Observations on Fox Hunting* must not be forgotten, nor Nimrod the renowned, who, in addition to the interesting details offered of his own field practices and those of the best fox hunting stars of the day, presents us also with an instructive context, or weaving together, of valuable matter derived from the various methods and different opinions entertained by those eminent sportsmen to whom he has been introduced, or with whom he has come in contact. We have yet another star in our horizon in the valuable, or rather invaluable, practical remarks of Mr. T. Smith, the late celebrated master of the Craven hounds, in his *Diary of a Huntsman.* Many other valuable contributions to the subject shine in the pages of the *Old* and *New Sporting Magazines.* From these sources, and from some others fortunately open to us, we also have endeavoured to lay before our readers an amusing, interesting, and, as we would hope, not altogether an uninstructive treatise on fox hunting and its collateral subjects. We claim no further merit in what appears than that of some judgment in the selection of our matter, and some capability of illustration derived from considerable practical experience gained in the field in our younger days, in various parts of the kingdom, but particularly in the counties of Essex, Hertford, and Sussex. The subject is a stirring one, and not one but many "schoolmasters are abroad" with high pretensions; we therefore request indulgence and candour at the hands of our readers, should our claims fall short of their expectations. This boast at least we can make, and we challenge to the proof that we have not offered one imaginary scene, or told as a fact one fictitious occurrence. Had we allowed ourselves to do this, our pages might have shone more conspicuously.

Subsect. 1. *The Fixture, or Meet.*

1716. *The fixture,* i. e. *the place of meeting* (*fig.* 249.) we will consider to be in Leicestershire, that beau ideal of a fox hunting locality, where nature seems to have been in league with the hunters of the pad, to offer them a country which presents large inclosures for hounds, horses, and men to extend themselves upon, and a soil most favourably retentive of the scent. It is here that the fox hunter of high bearing fixes his domicile for the hunting season, for here more particularly his daring can show itself; and if a real love of the sport

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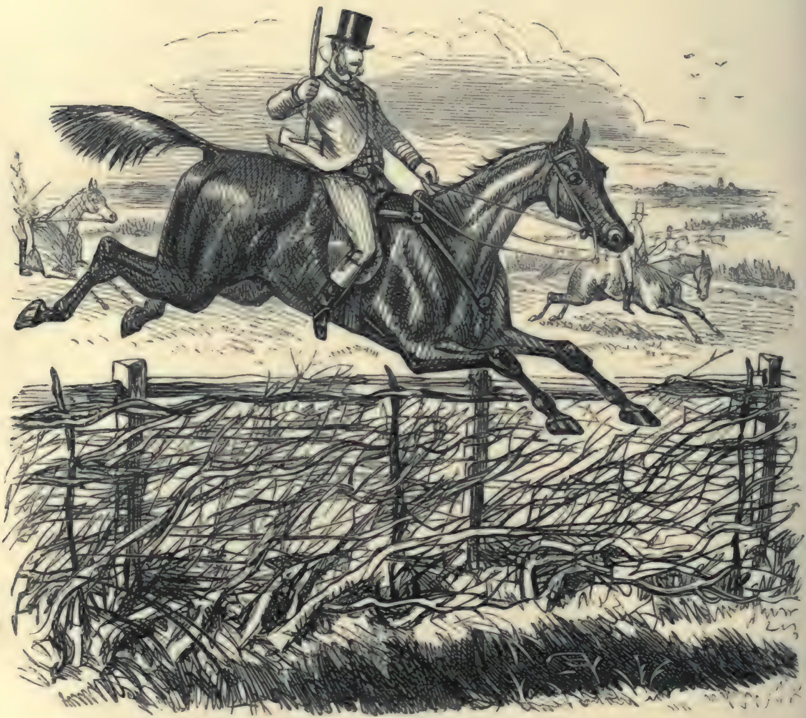
PLACE OF MEETING.

To face p. 491.



AN OX FENCE.—A LEICESTERSHIRE JUMP.

influences him, we know of no locality which can so well suit his purpose. Here he meets choice spirits like himself; and here, if his means will bear him out, he may revel in the sport to his heart's content; for, in general cases, the natural coverts are neither numerous nor extensive, the value of the land as a grazing county having prevented many such to remain, consequently there are few temptations for a fox to tease the impatient spirits by hanging to cover. But that he might have no necessity to quit the country altogether, artificial gorse covers are planted at convenient distances, which usually afford a sure find and a glorious burst, the moment dearest to the fox hunter's taste. Here also there is less fear than in most other fox hunting localities, that the feelings of the high-bred sportsman should be annoyed by the interruption of farmers, the brusquerie of the vulgar, or that the ignorance of the would-be-thought sportsman should mar the pleasures of the run. The aristocratic bearing of the whole of the hunts of Leicestershire is such as immediately to put down any thing of the kind, where one and all are gentlemen as well as fox hunters good, and consequently nothing unbecoming the character of such is allowed. It was in this locality that the well known Mr. Smith, who had the management of the celebrated Quorn hounds, figured so much to the satisfaction of Dian's train, and so much to his own credit. (See *Nimrod's Hunting Tour;* locality — Leicestershire.) Melton Mowbray appears to be to fox hunting what Newmarket is to racing; they are two grand metropolitan stations for these sports. We have hinted elsewhere at the mean dirty state of Newmarket town, ere kings, princes, and nobles, as well as plebeian gamblers, made it their chosen resort; and we may now advert to the vast change in Melton from what it was seventy, or indeed fifty years ago, when it was known only as an insignificant little town. It is now greatly enlarged, and boasts of many excellent houses erected by the inhabitants to accommodate its sporting visitors. Like many events of consequence, the importance to which this place has reached depended much on chance, or a happy combination of fortuitous circumstances. The establishment of a hunting club appears to have had much to do with its prosperity, which Mr. Apperley informs us owed its birth to the following incidents: — "Those distinguished sportsmen, the late Lord Forrester and Lord Delamere (then Messrs. Forrester and Cholmondeley), had been living for some years at Loughborough, for the purpose of hunting with Mr. Meynell, and removed thence into Melton, where they took a house, and were joined by the late Mr. Smythe Owen, of Condover Hall, Shropshire. As this house, now known as the Old Club House, only contains four best bed-rooms, its members are restricted to that number. But the following sportsmen have at different periods belonged to the club: — The Hon. George Germaine, Lords Alvanley and Brudenell, the Hon. Joshua Varneck, now Lord Huntingfield; the Hon. Berkeley Craven; the late Sir Robert Leighton; the late Mr. Meyler; Messrs. Brummell, Vansittart, Thomas Assheton Smith, Lindow, Langston, Maxse, Maher, Moore, Sir James Musgrave, and the present Lord Forester — the four last mentioned gentlemen forming the present club." Two junior clubs also started up in this fox hunting metropolis; and few can read without astonishment Mr. Apperley's enumeration of the persons of rank, property, and influence, who have resided there some portion of every year; and well might he, though himself a zealous fox hunter, remark, that "no foreigner visiting this country can fail to be greatly surprised at the magnificence of our hunting establishments, *whose sole object is the fox.*" Railways, however, have completely destroyed the exclusiveness of Leicestershire, and "snobs" by the dozen may now be seen at every railway meet. The once retired Quorndon itself has its station close by. Melton has benefited by the change, having thrown off much of its former bachelor character, and become more a family place, where an elegant hospitality is freely dispensed by the Earl of Wilton at Egerton Lodge at one end of the town, by the Honourable Henry Coventry at Coventry House at the other, and by the popular "Frank Grant" at the Lodge on the hill. We may also add that the "George" is still one of the best conducted hotels in the kingdom, where the wants of the foxhunter are duly appreciated and attended to. As a memorial of the past, we will retain what Nimrod said of Melton in 1833:—"The town of Melton," wrote he, "furnishes an interesting scene on each hunting morning. At rather an early hour are to be seen groups of hunters, the finest in the world, setting out in different directions to meet different packs of hounds. Each sportsman usually sends forward two. On one is mounted a very light, but extremely well dressed lad, who returns home on his master's cover hack, or in the dickey of his carriage, if he has happened to be carried to cover in the more luxurious fashion. About an hour and a half after the servants are gone forward with the hunters, a change of scene is to be observed at Melton. Carriages and four appear at some doors; at others very clever, and most commonly thorough-bred hacks, led gently in hand, ready for their owners to mount." This town is said, during the sporting season, to be able to show from two to three hundred hunters. Mr. Apperley allots ten to each sportsman who resides there: many have more than this number; and when we consider the numerous celebrated packs which are within reach of Melton, ten are barely sufficient, particularly where two hunters are taken to the field, as is now very frequently practised by sportsmen of fortune; indeed, many such have twenty hunters, and some even more. We must now run to the meet, where, if the skies be propitious, we shall find a glorious assemblage of rank, fashion, and beauty.

1717. *The fixture, or place of meeting,* is usually made known either by public advertisement in the London and county papers, or by cards distributed, and, in a few instances, by messages sent. Peremptorily settling on the covert several days in advance, is by many considered to be an hindrance to fox hunting. The exact spot for the meet, it is thought, should not be determined on until it is seen what the weather is likely to be; the most probable means to insure good chases being, to choose the country according to the wind. It is true, that when the scent lies badly, and the wind is so boisterous that hounds cannot hear one another, nothing inclines them so much to riot; and it is well known that persevering, when it is seen there is no possibility for hounds to run, or any probability of killing a fox, is spoiling hounds, and disturbing covers to no purpose whatever. On the other hand, it may be alleged that no subscription pack of foxhounds would maintain its popularity without this practice; neither would a good field be often collected. Both plans have been tried, but the popular voice is now so generally in favour of advertising the time and place of meeting, that the custom is not likely to be disturbed.

1718. *The time of meeting being made public,* it is a great dereliction of duty on the part of the huntsman not to be strictly in time. Neither is it courteous on the part of the master of the hounds to keep the assembled company waiting; and to the honour of packmasters, this seldom happens. The usual hour of meeting in the great hunts of the present day varies from half-past ten to eleven: in Leicestershire, however, it is often rather after than before eleven; consequently sufficient time is allowed for the morning toilet, the luxurious *déjeuner,* for the frost to disappear before the sun's rays, and for the distant members of the hunt to assemble. The fixture, it may be supposed, is necessarily near or more distant from the cover to be first drawn, according to circumstances; indeed, the greater the distance, in reason, the better for a bustling pack, and a set of noisy young men impatiently waiting, some smoking, many joking, and others indulging in loud vociferation, are apt to disturb Reynard's repose, and he may steal off, provided it be too near; therefore the places of meeting and drawing are better sufficiently apart. Our next scene will lie at the cover, to which we have drawn our friends of the meet, and from whence we hope soon to dislodge our game. Be patient, ye impatient horsemen, and endeavour to keep your steeds so likewise; be assured that you will, both horses and riders, soon have work enough cut out for you, and that then a pause would be most opportune to both. How exciting the scene! how delightful the anticipations of a glorious run!— Hounds, be quiet! Do you already sniff the tainted gale, and in anticipation have already overtaken the midnight depredator?

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THE PACK-MASTER.

SUBSECT. 2. *Drawing for a Fox.*

1719. *Entering the cover.* We left our hunting party at the fixture, but gently drawing towards the cover. However, before the entry a survey is made, to ascertain that the principal members are arrived, between whom the usual friendly recognitions take place, while others are employed in criticising the horses and the hounds, which are looking up in expectant anxiety to the huntsman and whippers-in. A signal from the master at last is made, which the huntsman answers by "Eu in! eu in there! good dogs!" (*fig.* 251.), his cap waving to the word, and the willing hounds obeying with such alacrity, that each is soon lost in the covert. In some, perhaps in most cases, the huntsman and at least one whipper-in enter with the hounds. Mr. Beckford is, however, not favourable to this, and our modern Nimrod does not appear to laud it either. The former says, "Many huntsmen are fond of having hounds at their horses' heels, and it is a modern fashion for the huntsman and whippers-in to ride into the cover, and by their noise, in some measure, to find the fox for their hounds: but this proceeding is apt to render hounds bad drawers, independent of the great chance of stubbing the horses, which in a strong cover too often occurs, without needlessly courting the danger; it is liable also, where there are but few finders, to have a fox found by them which goes down the wind, and they are heard of no more that day; besides, hounds never get so well or so soon together, as when they spread the cover." Nimrod is of opinion that if hounds will draw without (*i. e.* without the huntsman), that it is cruel to force horses where gorse may fill their legs with thorns, or where wood stubs may injure both legs and feet. Other pack masters make their huntsman *on foot* lead in the hounds, with a whipper-in wide on each side of him; but which of course can only be done when the cover is of moderate size. We however think these dangers unnecessarily magnified, and that, if the horse is allowed his head, he will very seldom stub himself; and how necessary the presence of the huntsman is in a large cover, let the experience of every pack master testify! but of this more anon.

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DRAWING FOR A FOX.

1720. *In most cases it is considered proper to draw up wind*, for reynard does not so readily hear the advances of his enemies, and, what is of some consequence, it allows the dogs to be heard. But by drawing down wind, many foxes start off before the hounds and escape: on the other hand, it may be alleged that, by drawing up wind, many are also chopped in their kennel, or never reach to break view. Foxes, however, by no means consult the wind in every instance in their escape, but act under other impulses; a very leading one of which is, to gain a favourite shelter, be it earth or cover. When the covers drawn are very small, and such as a fox cannot break away from unseen, noise is not likely to do the harm that it does when they are large enough for the fox to escape from without notice, which influences the conduct of the huntsman. It is the same when the day is far spent, and there is no drag, for in such case, by well disturbing the cover, if there be a fox he will be found, and quickly too. "In the nutting season hazle coppices," as Mr. Beckford truly observes, "are little likely to produce a fox; indeed, few wary pack masters will enter them then: but furze covers, or two or three-year-old coppices, are then the most likely haunts. Do not disturb all your covers in one day; nor even hunt your small covers until you have first drawn the larger ones, is a maxim with many good fox hunters."

1721. *What a motley assemblage the meet brings together!* and were we to inquire the object in view, we should be told they came to enjoy the fox chase. We crave pardon for differing here in opinion with this conclusion; and beg those who form it to suspend their final view of the matter, until they have looked a little further into it. Even in the practice of fox hunting in Leicestershire, drawbacks on its delights will creep in, as they do into all other amusements, and among these drawbacks we know not a more unpleasant one to fox hunters, stanch and true, than to be intruded on in their sport by persons who, whatever their rank, fortune, and pretensions may be, yet join the hunt, certainly not from the love of *hunting*, but from their passion for *riding*, and making a display of their horses and themselves, and to show their recklessness of consequences by the pace they go, the dangers they encounter, and, apparently, by the mischief they occasion. The mind unfurnished with better materials seeks excitement, and, strange to say, it is both sought and obtained by their going at the pace of madmen, and by the astonishment produced in the lookers-on. Persons of this kind are to be found in every celebrated fox hunting locality, and if any proof were wanting that notoriety is all they seek, it may be found in the fact that, not in the proportion of the sport shown by any pack, but in the numbers of the company it commands, is their certainty of attendance insured. In proof of this the anecdote may be stated, of a party who were discussing, not the merits of the run, although one of the best of the season, but the speed of the horses and who had the best of it, *i. e.* rode the fastest, and probably did the most mischief. "The question being asked, Who had the best of it? some man's name was given, and also the name of the second best; on which one of them, who had been attentively listening, and who had been with the hounds on the day in question, immediately exclaimed, 'Then, by G—d, I'll sell my horses, and give it up; for I'll swear that I had the best of it throughout that run!' &c. And he actually did send his twelve hunters to Tattersal's shortly afterwards, and they were sold." (P. 71.) Such gentry, we think, should confine themselves to steeple chasing, and not unite to spoil the sport of others by riding over the scent, and, what is worse, often over the dogs also. These gentlemen are sufficiently loquacious at the meet, about the condition of the dogs, and the chances whether the scent will lie well or ill, and are, further, but too apt to teaze both huntsmen and whippers-in with foolish inquiries or impertinent remarks. Every moment after the throw off, the huntsman ought to be employed in close observation; and thus, when to these intruders he seems most at leisure, he is most deeply engaged in weighing probable consequences. He hears a whimper, or he sees a hound busily flourishing, and just as he is endeavouring to learn whether it proceeds from a hound of the late entry not quite cured of riot, he is asked whether he is not going to the next cover, that the inquirer and a few more may have a scurry there. Such conduct is reprehensible in the extreme, because it may do much mischief: it cannot do any good; and, come what will, no redress can be obtained: and were these gentry either more considerate or better informed on the subject, these questions need not be asked.

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HUNTSMAN WEIGHING CONSEQUENCES.

1722. *When a prudent huntsman is drawing a large cover*, he will seldom get out of hearing of his dogs; and if it be actually necessary that he should leave the cover, he will take care to go down wind, not directly with the dogs, but opposite to them, leaving the whipper-in on the contrary line. As regards those negative sportsmen we have been noticing, suppose the fox to break cover before them, it is ten to one that they will, by yelling and screeching, head the fox back. If he or they would condescend to ask what should be done, we say, either be still, or, if you make any cry at all, let it be tallyho away! and should this halloo be ill timed by being given too soon, and the fox heads back, it is ten to one if they would, as they ought to do, distinctly halloo tallyho back! If they merely halloo tallyho! the general scamper which follows will certainly head the fox back, and it is very likely he will be killed before he has actually seen daylight. When we hunted in the Rodings of Essex, we were always a little suspicious of a gentleman, however well mounted, and however hard he rode, if he had not the good heavy thonged whip; and we

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'THERE YOU GO!'

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THE FIND.

liked him the better if his whip had the hook and hammer head to it also; but these gentlemen eschew these good old sporting insignia, although not less useful than good. If these hard riding and non-hunting gentry are determined to get on, at least let them clear the way before them by whipping the gallant dogs out of it with the long thong, instead of trampling them under their horse's feet. We remember to have seen one of these rough riders actually kill one hound outright, and maim another, and bring his horse and himself to the ground; his horse's knees were frightfully cut, and, as he deserved, he got more negative blessings from most of the party than pity.

1723. "*Supposing the hounds to be busy in cover,*" Mr. Beckford observes, "the huntsman should always listen to his hounds whilst they are running in cover; he should be particularly attentive to the head hounds, and he should be constantly on his guard against a skirter, for if there are two scents, he must be wrong. Generally speaking, the best scent is least likely to be that of the hunted fox; and as a fox seldom suffers hounds to run up to him as long as he is able to prevent it, so, nine times out of ten, when foxes are hallooed early in the day, they are all fresh foxes. The hounds most likely to be right are the hard running, line hunting hounds, or such as the huntsman knows had the lead before there arose any doubt of changing. With regard to the fox, if he breaks over an open country, it is no sign that he is hard run, for they seldom at any time will do that unless they are a great way before the hounds. Also, if he runs up the wind, they seldom or never do that when they have been long hunted, and grow weak; and when they run their foil, that also may direct him."

1724. *The find* is a subject on which such a master of his language, and such a zealot in his sport, may be supposed to delight to dwell, and thus we find him drawing the following spirited picture of it: — "How well they spread the cover! the huntsman, you see, is quite deserted, and his horse, which so lately had a crowd at his heels, has now not one attendant left: how steadily they draw! you hear not a single hound; yet none are idle. Is not this better than to be subject to continual disappointments from the eternal babbling of unsteady hounds?

> 'See! how they range
> Dispers'd, how busily this way and that
> They cross, examining with curious nose
> Each likely haunt. Hark! on the drag I hear
> Their doubtful notes, precluding to a cry,
> More nobly full, and swell'd with every mouth.' *Somerville.*

1725. "*How musical their tongues!* — And as they get nearer to him, how the chorus fills! Hark! he is found. — Now, where are all your sorrows and your cares, ye gloomy souls! Or where your pains and aches, ye complaining ones! one halloo has dispelled them all.— What a crash they make; and echo seemingly takes pleasure to repeat the sound. The astonished traveller forsakes his road, lured by its melody; the listening ploughman now stops his plough; and every distant shepherd neglects his flock, and runs to see him break. What joy! what eagerness in every face! Mark how he runs the cover's utmost limits, yet dares not venture forth; the hounds are still too near! — That check is lucky! now, if our friends head him not, he will soon be off — hark! they halloo — he is gone!" Now it is that the good fox hunter settles himself and his horse to the work in hand, but it is done with judgment. He first drops himself, not too stiffly, but securely, down in his seat; and, gathering up his reins, he gives the willing beast his whole head, or only so much as will secure him from being blown at the first burst, according as he is a temperate or a hot horse. Now if he, the rider, know the country well, he will be seen inclining rather to the right or left, to save the turn he apprehends Reynard will take, but without doing it to a degree that will endanger his being altogether thrown out. It is, however, surprising what a *détour* some old sportsmen will make, keeping the cry in their ears, so as to bring them in at the death. An admirable instance used to be seen in Mr. Conyers, who was seldom present during the run, but even less seldom absent at the finale. We once met with rather an old hand at the sport, who maintained that there was very little variety in fox hunting. The company present contrived to cheat him into relating the three last runs he witnessed, which proved totally different.

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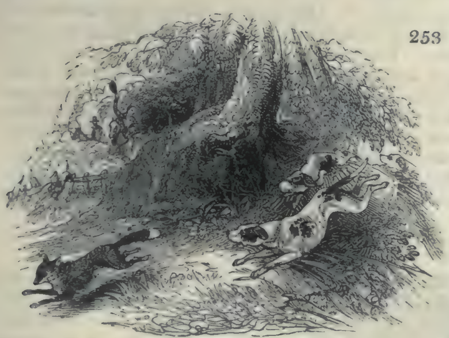

FIND OF THE FOX.

1726. *At this critical moment no delay should be made by the huntsman.* He must get on with the leading hounds, leaving the first whipper-in to bring on the rest; while the second whip should be actively employed in pushing on the hindmost hounds, looking well to i that no lingerers are left pottering behind, as is sometimes attempted by the young dog which have been too long kept to their walk, and by this contract a habit of self-hunting a fault that cannot be too early, nor too severely checked.

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HUNTSMAN LEADING THE HOUNDS

1727. "*A fox well found is half killed*" is a very common old sporting maxim; but such a find is very apt to be interfered with by the persons attending the hunt, who are too noisy and too fond of encouraging the hounds, which, it is truly remarked, seldom do their business so well as when little is said to them. Mr. Beckford might well dilate on the pleasure that attends the hearing a fox well found. He may be chopped, or mobbed up, or ridden up, but to be well found his kennel must be reached with a good drag, the music of the hounds increasing as they advance. The hounds want no cheering now, but, on the contrary, require rather to be restrained until they draw together and settle well to the scent. The most delightful time in the chase, in our opinion, is when the dogs have, one and all, stooped themselves quietly to the scent, packing well, running almost mute, and, with heads up and sterns down, vigorously, but steadily, pursue their game. If the scent in such case lies well, the perfect huntsman, without distressing himself, horses, or dogs, will moderately press them onwards, that he may take advantage of all before him; but he will be equally mindful to avoid overrunning the scent, and losing all the credit he has gained—*in medio tutissimus ibis.*

SUBSECT. 3. *The Run.*

1728. *The run!—glorious theme!* Would that we could describe it as it deserves to be described, or express but half what we have felt when we have witnessed the scene. Mr. Beckford contents himself with remarking, that " When the cover is broken, the huntsman should set off with the leading hounds, and keep as close to them afterwards as he conveniently can; nor can any harm arise from it unless he has not common sense. No hounds can then slip down the wind and get out of his hearing: he will also see how far they carry the scent,—a necessary knowledge, for without it he can never make a cast with any degree of certainty: he should likewise be active in pressing the hounds forward when the scent is good, as well as prudent in not hurrying them beyond it when it is bad. A huntsman should of course be a good horseman; if he is not, he cannot possibly be of much use, since one of his leading qualifications should be to ride well up to his head hounds. It is his business to be ready at all times to lend them that assistance they so frequently stand in need of, and

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GONE AWAY! GONE AWAY!

which, when they are first at a fault, is then most critical." Those huntsmen who do not get forward enough to take advantage of the early eagerness and impetuosity, and direct it properly, seldom know enough of hunting to be of much use to them afterwards. The first whipper-in should be in advance with the huntsman, while the second should remain behind so long as a single hound is left in cover; for, by keeping the hounds together, they do their work steadier, but when left to themselves, they take any blood they can get: they also thereby become self-hunters, learn to tie on a scent, and other mischievous propensities.

1729. *The style in which the dogs conduct the run is of great importance to the enthusiastic fox hunter.* The master says, "I hate to see a string of them, nor can I bear to see them creep where they can leap: it is the dash of the foxhound which distinguishes him as truly as the motto of William of Wickham distinguishes us. A pack of harriers, if they have time, may kill a fox, but I defy them to kill him in the style in which a fox ought to be killed; they must hunt him down. If you intend to tire him out, you must expect to be tired also yourself; I never wish a chase to be less than one hour, or to exceed two; it is sufficiently long, if properly followed; it will seldom be longer, unless there be a fault somewhere, either in the day, in the huntsman, or in the hounds. What Lord Chatham once said of a battle, is particularly applicable to a fox chase; it should be 'short, sharp, and decisive.'"

1730. *The speed of foxhounds.* On this subject, the same authority tells us, "That pack may be said to go the fastest, that can run ten miles the soonest, notwithstanding the hounds separately may not run so fast as many others. A pack of hounds, considered in a collective body, go fast in proportion to the excellence of their noses, and the head they carry, as that traveller gets soonest to his journey's end who stops least upon the road. Some hounds that I have hunted with would creep all through the same hole, though they might have leaped the hedge, and would follow one another in a string as true as a team of horses. I had rather see them, like the horses of the sun, all abreast."

1731. *On the full cry* (*fig.* 255.), or those exhilarating moments when the hounds *are running at full speed*, it may be observed, that if the scent be good, they can hardly be pressed on too much; at the same time, be it remembered, that it is the huntsman only should do this: it cannot, one time in a hundred, be required to be done by any of the gentlemen who follow the hounds. It may not be out of place here also to remark, that if hounds can run well up to their fox at the commencement, or in the early part of the chase, there is every reason to anticipate a satisfactory conclusion; but when, by any bad management, the fox is suffered to get far a-head, he will take advantage of these defective operations, and will in all likelihood beat the hounds. A fox should, if possible, be blown at first, when his death is almost sure to follow; for without doubt a fox, like the hounds, after some time gets second wind, when his pace becomes well regulated and steady; if, at this period, he be far before the hounds, the business will be much protracted, and will most likely end in his escape. It must however be evident, that if it is proper to press your hounds when the scent is good, they should not be hurried when it is bad: we have however seen this rule sadly contravened by impatient persons, and sometimes by the huntsman himself, in which case we were apt to conclude he wanted to get home to dinner. Another great fault committed by the majority of horsemen in the field, is that of riding all together: were they to spread more, they might sometimes greatly assist the chase, particularly those who, from a knowledge of the sport, keep down the wind; to them it would be difficult for either hounds or fox to escape observation. Those who remember Sir William Rowley when with his hounds, must have heard him calling, "For Heaven's sake, gentlemen, spread a little more, and do us all the good you can." Those who recollect the one, will also call to mind the style of Lady Rowley's

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FULL CRY.

riding in a fox chase. To our shame we relate it, that towards the close of a severe run, when four of us were endeavouring to wrench open a gate, our horses being blown and our take-off very bad, this excellent horsewoman came galloping up, exclaiming, "For Heaven's sake, gentlemen, get out of the way." She suited the action to the word, and cleared the timber in the most gallant manner; for us, we had but one alternative left, which was that of following her example in spite of the dread of a purl, being now goaded on by shame at being beaten by a lady. Thus it is, whether on the field of war, of hunting, or of love, woman is the leading star of all man's better actions. With the exception of Miss St. Clair and Miss Pigot, Lady Rowley was the best and most fearless horsewoman we ever remember to have met with. Let us hope the scions of the ancient family of the Rowleys will keep up its prerogative on the field of being "first in the throng."

1732. *Changing from the hunted fox to a fresh one.* This is always considered as a most untoward accident in *fox hunting*, but as one which it is sometimes impossible to avoid. Not infrequently, however, it happens from carelessness on the part of the huntsman or whippers-in, who either do too little, or do too much, or do it injudiciously. "It would be well for this sport," as Mr. Beckford observes, "if a foxhound distinguish a hunted fox, as the deerhound does the deer that is blown, then this untoward accident might not happen; but, as it is otherwise, we must content ourselves with knowing that certain cautions will lessen the frequency of its recurrence. Every huntsman ought attentively to listen to his hounds, whilst they are running in cover; more especially he should pay particular attention to the headmost hounds, and be constantly on his guard against a skirter; for if there be two scents, he must be wrong." We are told that, generally speaking, "the best scent is least likely to be that of the hunted fox; and as a fox seldom suffers hounds to run up to him as long as he is able to prevent it, so, nine times out of ten, when foxes are halloed early in the day, they are all fresh foxes. The hounds most likely to be right are the hard running, line hunting hounds, or such as the huntsman knows had the lead before there arose any doubt of changing. With regard to the fox, if he break over an open country, it is no sign that he is hard run; for foxes seldom at any time will do that, unless they be a great way before the hounds. Also, if they run up the wind, they seldom, if ever, do that when they have been long hunted and grow weak; and when they run their foil, that also may direct him. We need not hint that all this requires a good ear and nice observation; and that in these qualifications consist the chief excellence of a huntsman.

1733. *When hounds divide into two parts*, it is not thought proper for the whipper-in at once to check either part: on the contrary, he should attend to the huntsman, and wait for his halloo, before he attempts to stop either. For want of proper management at this particular juncture, Mr. Beckford tells us, he has known the hounds stopped at both places, and both foxes lost by it. "If they have many scents," he also observes, "and it is quite uncertain which is the hunted fox, let him stop those that are farthest down the wind, as they can hear the others, and will reach them soonest;" and he is right, for in such case there will be little use in stopping those that are up the wind.

1734. *Connected with such division of the pack is the following:* — "It is wrong to suffer hounds to hunt after others that are gone on with the scent, particularly in cover; for how are they to get up to them with a worse scent; besides, it makes them tie on the scent, teaches them to run dog, and destroys that laudable ambition of getting forward, which is so important in a foxhound. A good huntsman will seldom suffer his head hounds to run away from him; if it should so happen, and they be still within his hearing, he will sink the wind with the rest of the pack, and get to them as fast as he can." "Though I suffer not," says Mr. Beckford, "a pack of foxhounds to hunt after such as may be a long way before the rest, for reasons which I have already given, yet, when a single hound is gone on with the scent, I send a whipper-in to stop him. Were the hounds to be taken off the scent to get to him, and he should no longer have any scent when they find him, the fox might be lost by it; and this is a reason why, in large covers, and particularly such as have many roads in them, skirting hounds should be left at home on windy days." When, however, in chase over an open country, and the scent is indifferent, and you have reason to consider reynard far a-head, and making for well known earths or strong covers, our recommendation would be, take the dogs off at the first check, particularly if you have already had a severe burst, or are going directly from home instead of nearing it. For under the circumstances stated, in all probability you will outrun the dying scent, or otherwise the first cover you meet with may present you with a fresh fox, when neither dogs, horses, or riders are in a state to follow him. Huntsmen are apt to persevere too much, at least many of them are so; others we have met with, who, having craving stomachs, condor like, can smell the savoury dinner miles off, at least fancy, and an empty stomach operates to such a feeling. These frame any excuse to direct their steps homewards. The former, on the contrary, particularly if any fox hunter of known reputation be accidentally present, are too jealous of their own reputation, and that of their pack, to act thus prudently; the consequence of which is, night steals on, and at length the remnant of the field, themselves tired, the dogs lame, and horses knocked up, reach home by starlight. We write feelingly, for we have been constrained to put up on such an occasion for the night at a village inn.

Subsect. 4. *A Check and Casting.*

1735. *A check! a check!* (*fig.* 256.) I hate the very name of a check. says the young and lately entered foxhunter. Hold hard, there! says a veteran, on a stately steed, with his parlour bellows a little at fault; let no man abuse a check. When you, sir, have ridden your horse to a stand still (and, by the bye, how your horse's tail shakes), as many times as I have done, you will have reason to bless a check, which often serves to save both your credit and your horse's life. How often, when the brave pack, with heads up and sterns down, have rather raced than run after the streaming scent, not even venturing to throw a tongue — how often then has even the most ardent fox hunter silently wished for a check; him it delays but a few minutes, but to the distressed horse the advantages are incalculable: it has indeed saved the life of hundreds, and it further serves to bring up the second horse of those who are thus prepared. Now, huntsman, remember, more foxes, particularly old ones, are lost at a check than almost in any other manner; their cunning often devises the check, and then they further profit by it. When a check occurs in cover, it is ten to one but the fox has made a short turn, so wily is he; and it is also ten to one, that had the huntsman been up, or even near enough to have observed the bearing of the leading hound, by drawing the pack that way, the scent would have been regained. The fox, though almost dead beat, has sense enough either to push another up, or otherwise he reaches the outside of the cover, and lurks at the bottom of the ditch that bounds it. The dogs draw as far as this, then bound over the ditch, and spread abroad in the open, while the wily animal steals back again, crosses the cover, and then sometimes escapes altogether, as we have known to have happened: consequently there then follows a check. Be very careful, however, how you attend to halloos when at check; the first thing is to endeavour to learn whence it comes, and next from whom it came. Dispatch a whipper-in to inquire, but do not let the dogs catch the intelligence; as should this be a false halloo, the true scent is dying away: if it turns out that the halloo offered any hope, attend to it; if not, proceed.

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THE CHECK.

1736. *As prevention is better than cure*, it is well to consider the means of preventing a check. In cover the huntsman should very seldom quit his hounds, particularly he should never lose the cry of them. When he waits on the outside of the cover, he almost invariably repents it: as, for instance, a fresh fox is probably found, in which case the pack may divide, and he probably will leave the beaten fox behind, and go away with the fresh one: now, had he acted judiciously, he would have kept closely to the cry of the leading hound; and as we know that they seldom quit the hunted fox, by so doing all would have been well. The manœuvres of a beaten fox are many; one of which has been thus described: — Suppose the hounds to be near him in cover; well, he breaks cover, but it is not always to go away; on the contrary, he is often known to steal along the ditch that bounds the wood, the dogs wind him, dash headlong over ditch and all, and make a détour in the field beyond. Puggy clambers up the ditch, and into the cover, when he sees his enemies thus employed, when, recrossing the wood, and the intermediate ground being rank with the former stains, he breaks cover on the opposite side, and probably reaches an earth before the scent is regained. Again, a check often occurs on an indifferent scenting day thus: — The fox having taken the pack, perhaps, several miles, and being himself pretty well blown, will *head back* to the cover he came from: Should he be followed quickly, or not at all, is the question? Some of our best fox hunters say, leave him alone, and try for a fresh one, particularly if your pack is fresh; but, by all means, if this is your determination, do your best to kill the next fox, or your dogs will be out of heart, and the reputation of dogs, horses, and men will suffer.

1737. *When Mr. Meynell's hounds came to check*, it was his practice to give them every encouragement to recover the scent, without their being forcibly driven about by the huntsman and whippers-in. On the contrary, they were hallooed back to the places to which they brought the vermin taint, and encouraged to try round in their own way to regain it. By so doing, that time was saved which was apt to be spent in casting them by the huntsman: and when also the hounds were cast, it was usually done in twos or threes, headed by Mr. Meynell, his huntsman and whipper-in; by which means the dogs were spread abroad, and encouraged to regain the scent. When hounds are at fault, consider well the probable reason of it. Mr. John Lockley (who is the subject of an admirable memoir by Mr. Apperley), is of opinion, that "A real good huntsman can, twice out of three times, discover the object in the line of hounds that caused it, and as soon as he suspects it, pull up his horse: for instance, a church, a village, a farmhouse, team at plough, men at work, sheep, and above all cattle, are the things most likely to impede the scent. (Be it remembered, that the breath of one cow will distract hounds more than a hundred sheep.) When any of these objects present themselves in the face of hounds, you may then anticipate a stop, and by pulling up your horse, and observing which way the pack inclined before the check, you will be able (without casting) to hold them to the right or left accordingly." (See *Hunting Tours*, p. 588.)

1738. *Colonel Cook on this head observes*, that, "Although it is the general opinion that when hounds check, the fox is forward, and that the first cast the huntsman makes should be a forward one. I cannot think so; on the contrary, if there are sheep, deer, cattle, &c. to foil the ground, and the fox has not been coursed by a cur dog, why should they check if he is gone on? The greatest probability is, that he has headed, or made a short turn, to the right or left; therefore, if you cast at all, a forward one is the least likely to succeed. There is one rule, however, from which you should never deviate — let your hounds try first, before you attempt to make a cast yourself; hounds that are not accustomed to be 'lifted,' will make a superior one to any human being." (*Observations on Fox Hunting*, p. 103.)

1739. *Lifting of hounds through sheep, cattle, or stains, or balks*, Mr. Meynell, in general cases, was not fond of. Mr. Beckford seems to allude to this when he says, "I have heard of a sportsman who never suffers his hounds to be lifted; he lets them pick along the coldest scent, through flocks of sheep: this is a particular style of fox hunting, which, perhaps, may suit the country in which that gentleman hunts. I confess to you, I do not think it would succeed in a bad scenting country, or, indeed, in any country where foxes are wild; whilst hounds can get on with the scent, it cannot be right to take them off from it; but when they are stopped for want of it, it cannot then be wrong to give them every advantage in your power."

1740. *A cast is the spreading of the dogs abroad in search of the lost scent*, as represented in *fig.* 256. p. 499. Mr. Lockley says, "When casting is necessary, you should be directed by the pace, or degree of scent, which you brought to the spot where the hounds threw up: if you came quick, and your hounds are not blown (be sure to attend to that), you make a quick cast in the direction which the hounds were inclining to, by forming a small circle first, and a larger circle afterwards if you are not successful; but if the hounds are blown, you should invariably cast them very quietly, and hold them back; for when hounds have run a long way hard, they lose their noses from want of wind, and run beyond the scent (than which nothing is more true—Editor), especially if there is water in their view." (See *Hunting Tours*, p. 588.)

1741. *Avoid noise and bustle at a check.* Mr. Beckford directs that every one be silent and stand still. "Whippers-in," he observes, "are frequently at this time coming on with the tail hounds; they should never halloo to them when the hounds are at fault; the least thing does hurt at such a time, but a halloo more than any other. The huntsman, at a check, had better let his hounds alone, or content himself with holding them forward, without taking them off their noses. Hounds that are not used to be cast, *à tout bout de champ*, will of themselves acquire a better cast than it is in the power of any huntsman to give them; will spread more, and try better for the scent; and if in health and spirits, will want no encouragement. Should they be at fault, after having made their own cast (which the huntsman should always first encourage them to do), it is then his business to assist them further; but except in some particular instances, I never approve of their being cast as long as they are inclined to hunt. The first cast I bid my huntsman make is generally a regular one, not choosing to rely entirely on his judgment; if that should not succeed, he is then at liberty to follow his own opinion, and proceed as observation and genius may direct. When such cast is made, I like to see some mark of good sense and meaning in it; whether down the wind, or towards some likely cover, or strong earth: however, as it is at best uncertain, and as the huntsman and the fox may be of different opinions, I always wish to see a regular cast before I see a knowing one; which, as a last resource, should not be called forth till it be wanted. The letting hounds alone is but a negative goodness in a huntsman; whereas, it is true, this last shows real genius; and to be perfect it must be born with him. There is a fault, however, which a *knowing* huntsman is too apt to commit; he will find a fresh fox, and then claim the merit of having recovered the hunted one. It is always dangerous to throw hounds into a cover to retrieve a lost scent; and, unless they hit him in, is not to be depended on." Mr. Smith, late master of the Craven, describes a favourite cast of his, which, as he justly observes, is at the first view startling to the generality of fox hunters, inasmuch as the essence of it is to hold the hounds the very way he does not suppose the fox to have taken. In other words, the pack having checked, he holds them round to the right or left *up wind* instead of down, which would to all appearance have been the most unlikely; for, as he observes, "They probably would not have checked at first had it been right, owing to its being up wind." If this unusual course does happen to be right, they hit it off directly; if not, little time is lost to hold them round back behind the spot they received the first check. He now turns and makes a wider cast back, "round in front all the way *to the left* the same distance, till he reaches, or nearly so, the line he came behind the check at first." (P. 48.) Being now well assured his fox is neither gone back nor made a détour to the right or left, he makes a wide cast, commencing from the left behind, choosing his track according to the nature of the ground: this he does until he again meets the line behind, when he makes a cast either way, according to circumstances. Mr. Smith tells us he has been in the habit of making this cast for many years, and found it in most instances successful; consequently, it is well worthy the pack master's attention, and we would recommend to all such a reference to his *Diary of a Huntsman*, where it is further explained, and very ingeniously illustrated by a diagram executed by the ingenious author himself.

1742. *The hit off.* The probable consequence of a judicious *cast* is a *hit off* by a leading or tender nosed hound among the cry, which, having been cast after the manner of Mr. Smith, has retrieved the credit of the gallant pack as well as that of the huntsman also, who often from impatience will, directly a check occurs, make an extensive cast, when a little patience would, in all probability, have enabled the dogs to hit off the scent for themselves. In all such cases the hounds should be first allowed to make their own cast by spreading abroad, as we see them doing in our last illustration (p. 499.): and even when it may be thought proper to cast them, it would be well to remember Mr. Beckford's directions, that "When hounds are at fault, and the huntsman halloos them off the line of scent, the whippers-in smacking their whips and rating them after him, if he should trot away with them, may they not think that the business of the day is over? Hounds never, in my opinion (unless in particular cases, or when you go to a halloo), should be taken entirely off their noses; but when lifted, should be constantly made to try as they go. Some huntsmen have a dull stupid way of speaking to their hounds; at these times little should be said, and that should have both meaning and expression in it." We pause for a moment, to state our regret that our confined limits prevent us from adding more on this interesting subject, perhaps the most important of any in the practice of fox hunting, for it embraces the arts of one of the most wily animals in the universe to escape from the combined efforts of speed in a number of dogs, who rather race than run, and whose noses, familiarised to the vermin taint, snuff with ardour every odorous particle, cheered on by an assemblage of human agents, whose practice has long accustomed them in the arts of circumvention, and whose steeds, having caught the enthusiasm, do all in their power to assist the intention of the pursuers, leaving to all appearance little chance of escape for the culprit thief of the hen-roost. Nevertheless, although these his enemies are most formidable, he often escapes from them all. The causes of the check, therefore, with the best means of avoiding such consequences as lead to the escape of the fox thereby, cannot be too fully inquired into. We therefore, sensible of our want of room as well as inferiority to handle the subject, urge on such of our readers as wish to enter more deeply into the matter to have recourse to the various sources of information we have noticed. On the check, its probable results, and the means of avoiding such as lead to the loss of the fox, we would particularly refer to Mr. Beckford's *Thoughts on Hunting*, in which work is embodied almost every situation in which a pack may be placed in the *check*, its causes, consequences, and the best means of recovering the scent by a fortunate *hit off*. We have endeavoured to present to the view of the reader this inspiring moment (*fig.* 257.), where it is seen that one, either more fortunate

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THE HIT OFF.

or keener scented than the rest, has reclaimed the vermin taint, and is merrily pursuing it onward, while the delighted huntsman is capping the body of the pack forward, and the huntsmen are calling in the stragglers of the wide cast, while the accompanying horsemen, spread far and near, make for the head. That we must not halloo before we are out of the wood is a common saw, and it may cut here, if we do not take care to circumvent it by prudence, and by the chance that, if our huntsman knows his business well, our fox need not be lost. Having, however, been once checked, we would have the huntsman to stick well to his hounds, so that, should they again seem to want it, he may help by a little lifting if necessary; particularly he should keep them forward, and not let them tie on a cold scent, which may lead to the error of hunting the old scent back again. If it be really probable that the fox has headed back, the cast forward should be short and quick, particularly if it be a bad scenting day, and the more so as there is the greater danger and likelihood that the scent is behind than before.

Subsect. 5. *Blooding the Hounds, or Death of the Fox.*

1743. *Blooding of hounds.* It is well known that the ostensible reasons for fox hunting are to destroy these depredators. But as there is a sufficient number of vulpecides without the aid of hounds, and as it is the inspiring scene altogether, which animates fox hunters, and the destruction of the animal abstractedly considered is of little import, it becomes a question, whether a death is actually necessary to keep alive the energies of the dogs, leaving the riders to their own feelings on the connection between a death and sport. Mr. Apperley says, " On the subject of blood, that is, killing and eating foxes, we entirely assent to the following remarks. Blood was a thing Mr. Meynell was more indifferent about than most masters of hounds. The wildest packs of hounds were known to kill the most foxes in cover, but very seldom showed good runs over a country." We would on our parts further remark, that hounds chopping foxes in cover is more a vice, than a proof of their being good cover hounds, and also that murdering foxes is a wanton and useless prodigality: nor have we heard it attempted to be denied, that seasoned foxes are as necessary to sport as experienced hounds. " Our own opinion of the value of blood to hounds," says Mr. Apperley, " perfectly accords with that which it appears was entertained by Mr. Meynell, namely, that it is far from a *sine qua non* to the well doing of foxhounds, or any other hounds, as is apparent at once from the modern system of hunting the stag. If it be possible, the pack are not permitted to break his skin, much more to devour him; still, despite of the rating and flogging they get to prevent their injuring the object they are pursuing, they do pursue it to the last with all their might and main. But let it not be supposed that we set no value on what may be termed well carried blood. On the contrary, we think the flesh and blood of a fox well found, and handsomely killed, by hounds in the moments of high excitement, must be very beneficial to them. But when chopped in a cover (generally the effect of accident, and not, as Mr. Hawkes supposed, of vicious propensity in any individual hound), we consider a round of beef would be a more acceptable present to them; nor is the case much altered when a fox is digged out of an earth, after perhaps an hour's delay. We remember to have heard Mr. Osbaldeston assert, that the best week's sport he ever had in Leicestershire when he hunted it, was after his hounds had been out nine days in succession without tasting a fox." (*Ency. Brit.* vol. xi. p.744.) We have also numerous proofs that the pursuit of one animal by another is a sufficient stimulus to its repeated chasing, although the capture never occurs: many old unbroke spaniels chase small birds all their lives, yet were never known to catch one. That either lapping the blood, or devouring the flesh of the captive animal, is essential to keep alive the ardour of pursuit, is disproved by sufficient evidence; the terrier does not eat the rats he kills, nor the pointer the birds that he hunts with avidity to the end of his days. Lord Derby's staghounds, and it is also the case with other staghounds, were strangers to blood, yet celebrated for ardour in pursuit. Harriers also further exemplify the position; but a case more immediately to the point, is that of Mr. Templar's foxhounds, who were never blooded when by possibility it could be avoided. (See *Bag Foxes*, p. 505., where this extraordinary method of fox hunting is further noticed.)

1744. *The actual necessity of blood for hounds* was nevertheless advocated by Mr. Beckford, who says, " In my judgment, no foxhound can fail of killing more than three or four times following, without being visibly the worse for it. When hounds are out of blood, there is a kind of evil genius attending all they do; and though they seem to hunt as well as ever, they do not get forward; whilst a pack of foxhounds, well in blood, like troops flushed with conquest, are not easily withstood. What we call ill luck, day after day, when hounds kill no foxes, may frequently, I think, be traced to another cause, namely, their being *out of blood;* nor can there be any other reason assigned why hounds, which we know to be good, should remain so long as they sometimes do without killing a fox. When hounds are in want of blood, give them every advantage: go out early; choose a good quiet morning; and throw off your hounds where they are likely to find, and are least likely to change; if it be a small cover, or furze brake, and you can keep the fox in, it is right to do it; for the sooner that you kill him, when you are in want of blood, the better for the hounds." Mr. Beckford, however, himself reprobates the wanton destruction of foxes, particularly of cubs, under the futile pretence of the hounds wanting blood.

1745. *The death of the fox* results from the scent being regained, and is thus animatedly described by a veteran: — "There, there," says he, " Trueman is on the scent—he feathers, yet still he is doubtful—'tis right! 'tis right! see how readily they join him! and see! see! those wide casting hounds, how they fly forward to recover the ground they have lost!—Mind Lightning, how she dashes; and Mungo, how he works! Old Frantic, too, now pushes forward! she knows, as well as we, the fox is sinking.—Huntsman! at fault at last?—How far did you bring the scent?—Have the hounds made their own cast?—Now make yours. You see that sheep-dog has coursed the fox; get forward with your hounds, and make a wide cast.—Hark! that halloo is indeed a lucky one.—If we can hold him on, we may yet recover him; for a fox, so much distressed, must stop at last. We shall now see if they will hunt as well as run; for there is but little scent, and the impending cloud still makes that little less. How they enjoy the scent! see how busy they all are, and how each in his turn prevails!—Huntsman! be quiet! whilst the scent was good, you pressed on your hounds; it was well done: when they came to a check, you stood still, and interrupted them not: they were afterwards at fault; you made your cast with judgment, and lost no time. You must now let them hunt; with such a cold scent as this, you can do no good; they must do it all themselves; lift them now, and not a hound will stoop again. Ha! a high road, at such a time as this, when the tenderest nosed hound can hardly own the scent!—Another fault! That man at work, then, has headed back the fox. Huntsman! cast not your hounds now, you see they have overrun the scent; have a little patience, and let them, for once, try back."

1746. *A try back gives the horses wind, and exhibits the tact of good hounds.* " We must now give them time; see where they bend towards yonder furze brake. I wish he may have stopped there! Mind that old hound, how he dashes o'er the furze; I think he winds him. Now for a fresh *entapis!* Hark; they halloo! Aye, there he goes. It is nearly over with him; had the hounds caught view, he must have died. He will hardly reach the cover; see how they gain upon him at every stroke! It is an admirable race; yet the cover saves him. Now be quiet, and he cannot escape us; we have the wind of the hounds, and cannot be better placed: how short he runs! he is now in the very strongest part of the cover. What a crash! every hound is in, and every hound is running for him. That was a quick turn! Again another! he's put to his last shifts Now *Mischief* is at his heels, and death is not far off. Ha! they all stop at once; all silent, and yet no earth is open. Listen! now they are at him again! Did you hear that hound catch him? they overran the scent, and the fox had laid down behind him. Now, reynard, look to yourself? How quick they all give their tongues! Little *Dreadnought*, how he works him! the terriers too, they are now squeaking at him. How close *Vengeance* pursues! how terribly she presses! it is just up with him! Gods! what a crash they make; the whole wood resounds! That turn was very short! There! now! aye, now they have him! Whoo hoop!" Reader, if thou art a fox hunter, thou hast already in thy " log " written down Beckford as the author of this admirable description.

1747. *The dead fox is now less ceremoniously disposed of than formerly;* he nevertheless still has some funereal honours bestowed on him. Being seized by the huntsman, he is disencumbered of his brush, his pads or paws, as well as either his whole head, or his mask, or snout, which are also cut off. The *mode* formerly in use by the huntsman was that of hanging the carcass on the bough of a tree, while the hounds *bayed* the death song around it. This is not now so usual, but more frequently the huntsman seizing the mutilated carcass holds it up by the neck (*fig.* 258.), surrounded by the whole pack, all impatient to break it up,

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DEATH OF THE FOX.

but all kept at bay by their high discipline. After a short interval thus spent, the huntsman screaming out his cheers to the delighted crew, throws it amongst them to be devoured, which does not occupy more than a very few minutes. The ceremonies of the death vary a little with different packs, but are essentially the same, and as we have stated them.

1748. *The brush is not now sought for with the same avidity as formerly;* nor is the gift of it to any of the company ceremoniously enacted as of yore. In too many instances it was somewhat surreptitiously obtained. The whole head also, which was usually saved by the huntsman to bedeck the kennel door, has now, in many hunts, given place to the snout, mask, or front, for nailing in view.

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FOX-HUNTING.

Subsect. 6. *Additional Remarks on Fox Hunting.*

1749. *General rules on the subject of fox hunting are useful,* inasmuch as they form the grammar of the sport. Don't be dispirited, says Mr. Apperley, at a succession of bad sport, for it is not within your control, good hounds and sport not being naturally co-existing circumstances. Be as zealous as you please in the field, but temper your zeal with judgment, and don't weary your hounds by long draws, on days which bid defiance to sport. Hounds without a scent resemble a man running in the dark; neither can make head against such fearful obstructions; and on stormy days, with a very high wind, if you have influence with your master, persuade him to let you go home after the first failure. It is not generally known what mischief even one such day does to some hounds. Don't set too high a value on blood, unless well earned; it is the result of want of reflection alone, that has set any value whatever upon it, when otherwise obtained. Mob a bad fox in a cover if you like, but never dig out a good one unless your hounds have almost viewed him into a spout, and you can bolt him before the excitement subsides. Never *break ground* in a country belonging to another pack of hounds, nor dig for a fox in a *main earth* in your own. Many a bitch fox, heavy with young, has been killed by this means in the spring, instead of the one that was hunted and marked to ground; and be assured that sportsmen in general do not estimate the goodness of a pack of hounds *by the noses nailed against the kennel door.* Lastly, keep your field back from pressing on your hounds in chase, and still more so when in difficulties, as well as you can; but don't suffer your zeal to carry you too far on this point. Remember the apostolic precept, "Be courteous."

1750. *Digging for the earthed fox.* We think nothing but absolute necessity ought to excuse this practice; and we are happy, for the reputation of fox hunters, to know it is greatly on the decline. In most cases, if there be time, and the dogs, horses, and riders are not jaded, it is much better to draw for another. When it is, however, determined to dig, it is first proper to stop any other earths that are near, or otherwise it may happen

To face p. 504.

GOING HOME. (The background is Puttenden Upland.)

that the fox, taking advantage of sleeping dogs, tired horses, and lighted cigars, may bolt off altogether, or from one earth to another. Nor should digging be commenced until by trying well around, there is almost a certainty that the fox is there. Mr. Beckford says, "for want of this precaution, I dug three hours to a terrier that lay all the time at a rabbit." He adds, that "a fox may also run over an earth without going into it, or he may go into it and not stay."

1751. *In digging out the fox which hounds have run to ground*, if the hole be straight and the earth light, follow it; and in following the hole, by keeping below its level, it cannot be lost: but in a strong earth, the best way is to let the terrier fix the fox in an angle of it, and then to sink a pit as near to him as can be. A terrier should always be kept at the fox, who otherwise may move, and in loose ground dig himself further in. If the fox must be drawn by a hound, first introduce a whip, which the fox will seize, and the hound will draw him more readily, besides escaping a bite. A fox may also be drawn by fixing a piece of whipcord at the end of a stick, which, when the fox seizes, may be twisted tight round either his upper or lower jaw."

Subsect. 7. *Bagged Foxes and Drags.*

1752. *In our humble opinion this chase*, if such it ought to be called by legitimate sportsmen, can only be tolerated for the trial of the new entry, and also when it is imperative for future sport to spare the fox cubs. For ourselves we never followed either bagman or drag; but of the two, we would rather gallop across a country in the Irish fashion, after a good drag, than after a fox cowed by fear, and stiffened by confinement. The contest is too unequal to please the taste of fair-dealing sportsmen: and for one bag-fox that does really afford a good run, at least half a dozen disappoint the pursuers; and as though the hounds themselves only half relished the sport, they will seldom eat a bagged fox. Mr. Beckford is not favourable to them, for the reasons we have assigned; but he adds, "if, notwithstanding these objections, you still choose to turn one out, unbag him in a small cover, give him what time you judge necessary, and lay on your hounds as quietly as you can; and, if it be possible, let them think they find him. If you turn out a fox for blood, I should in that case prefer the turning him into a large cover, first drawing it well to prevent a change; the hounds should then find him themselves, and the sooner he is killed the better." As, however, bag-foxes almost always run down the wind, those who choose to turn them out, may also choose the course they shall take, which is at least something in their favour. Colonel Cook, likewise, is very severe on this practice, and decries it on true sporting grounds: — "Whatever you do," he says, "never turn out a bag-man."

1753. *Mr. Templar's method of hunting bag-foxes* was somewhat novel, and will be only cursorily noticed here, but the curious reader will be amply repaid by referring to the detailed account, as given by Mr. Apperley in his *Hunting Tours*, (p. 155.). Mr. Templar's hounds were thorough-bred foxhounds, though only nineteen inches high. They were never allowed to taste blood if it could be avoided, which was mostly done by means of the exertions of his own people, and of two or three of the usual field, who were particularly expert at riding forward as the fox began to sink, and picked him up by the tail. The hounds also being small, and withal trained to stop at a rate, favoured this method so much, that it was seldom they tasted blood. To keep up, however, the appearance of legitimate fox hunting, Mr. Templar occasionally tried the coverts, and when he found fox, we are told that toddy had to look sharp to save his life. If it chanced that no fox was found, one or more bag-men were always ready to turn down. Mr. Apperley's own words are, "The foxes were turned out not twenty yards from them, *i. e.* hounds; but they scarcely stirred until Mr. Templar gave the word of command, or until he 'bade them to the chase,' which was by the last of three signals. In the old pack there was one hound that never looked at the fox, but always kept his eye on Mr. Templar, and when the last signal was given he was off." (*Observations on Hunting*, p. 157.) Mr. Templar, it must be remarked, kept foxes in confinement for his sport; and we are told that he had not less than thirty brace of old and young; one of these vulpine ancients, we learn, had been hunted thirty-six times. On the principle of the Irish woman's skinned eels, "this could not hurt him, because he must be so used to it." His fox stock was kept in two large yards, furnished with kennels; to each kennel a fox was fastened by collar and chain: and one of them, in particular, was so tame as to wag his tail after the manner of a dog, when approached by any one he knew.

1754. *Drags or trailed scents are of very ancient date*, and are noticed by Markham, Mascal, and others of the older sporting writers. Like steeple chasing a drag may be made a humble substitute for hunting; and when a sharp ride is the only object, one may as well gallop after aniseed, rusty bacon, a red herring, or a dead cat, as after a foxy scent. It forms also by no means a bad training entry to either the young horses, young dogs, or young riders. In Ireland it is not unfrequently practised as a "lark," and then it savours so much of the steeple chase, as to make it by no means unlikely that the latter was an offset from the former.

CHAP. VII.

HARE HUNTING.

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HARE HUNTING.

1755. *Hare hunting is often scoffed at by the fox hunter,* who in ridicule styles it thistle whipping. We agree with him that it is inferior in most respects to his more masculine sport; but how many of the keenest fox hunters have sobered down and become hare hunters, when the sinews became relaxed, and the feverish irritability of youth had evaporated. Many localities also are not favourable to fox hunting; and many, whose fortunes are not equal to a fox pack, yet can sport a hare cry. But many sportsmen of no mean note have taken up the hare chase by choice, and have adhered to it, although surrounded by foxes and foxhounds. "The chase," says the *Country Squire,* "after the fox or stag is violent, and little more than riding or running; but the hare displays the very *art* of hunting — she affords a pleasure worthy of the philosopher — a curiosity that may justly raise the admiration of the wisest statesman, physician, or divine. I therefore hope for pardon from my more sprightly brethren, if I give my vote for the innocent hare above all other game."

Sect. I. *The Natural History of the Hare.*

1756. *The common hare* (*fig.* 261.) is now placed by zoologists among the *Rodentia,* or gnawers; it was, however, long thought rather to belong to the ruminants, and was so placed by the Levitical law. To this very day even some naturalists favour the opinion of its cud-chewing powers, among whom Blumenbach stands conspicuous. It is true that the stomach of the hare is marked by a singular contraction, but which stomachic structure is much too slight to divide it into distinct cavities, as seen in all true *Ruminantia.* This opinion of the ruminating powers of the hare, has been further strengthened in common minds, by the incessant working of its upper lip, which being completely cleft through, is rendered extremely mobile. When, however, it is considered that rumination is conducted by a grinding process of the jaws, and that those of the hare always remain stationary, except when in the act of browsing, the cha-

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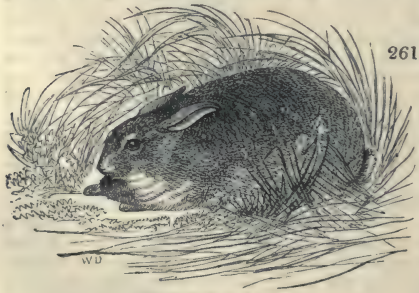

THE HARE IN HER FORM.

racters of the animal as a nonruminant are fully established. The mobility of the separate portions of the nose we consider, from our own dissection, to be subservient to the olfactory powers, which in this animal are delicate in the extreme. The hare has six prismatic grinders in the upper, and five in the lower jaw: the upper jaw has likewise subsidiary incisors.

1757. *The general figure of the hare* is sufficiently known, but the mechanism of its frame is particularly calculated to promote very extraordinary powers of locomotion; which, however, are often overlooked, although they are superior to those of most other animals. The loins of the hare being muscular in the extreme, when operating on hinder limbs of great length and strength, the alternate contraction and extension of the angles formed by which, then make it one of the fleetest animals known. The comparative shortness of its fore-legs greatly assists its saltatory mode of progression, and likewise draws it into some affinity with the true leaping tribes, as the kangaroo, &c. It is this curtailment of the fore-legs in comparison with the hinder that directs the hare instinctively to seek a rising ground, when flying from its pursuers. The fore-feet have five toes, and the hinder four, and the under surfaces of the whole are furnished with soft hair.

1758. *The want of the elastic padding which bounds the soles of the feet of some animals,* as dogs for instance, is unfavourable to the progress of the hare on fallows, and also on all wet and deep soils, which it is well known they constantly avoid when they can. When left to choose their own track, they always take a dry one for treading on; and it is plain that their woolly socks admirably adapt their feet to resist the ill effects of pressure from the rough surfaces they must pass over by this preference. The author of the *Translation of Arrian* observes, in reference to this, "The term δασύπους (hairy footed), is evidently derived from the woolly covering of the hare's feet; originally an adjective expressive of this peculiarity, but subsequently used to designate the hare herself." The average length of a full grown hare is two feet, and the weight varies from five to eight pounds. It is not, however, uncommon to meet with hares considerably heavier; and on what authority we know not, but it is said that in the Isle of Man, hares of twelve pounds' weight are to be met with. A correspondent of Mr. Loudon notices one sent to Mr. Leadbeater, which, though unimpregnated, weighed thirteen pounds, one ounce and a half. (*Magazine of Natural History*, vol. v. p. 276.) The colour of the hare varies with the season and locality: the colder the region, the lighter is the hue; and anomalies occasionally present themselves, for which no reason can be assigned; thus both black and milk-white hares have been met with in England, and if we mistake not, a pied one has been seen. The general tint however is a subferruginous grey, the chin and belly white, the throat and breast of a reddish yellow cast; nor can we fail to remark, how admirably adapted is this mixture of colours to harmonise with the matters which usually surround the form or seat of the hare, as every sportsman can tell, by the trouble it costs him to become an expert finder of them. Apparent as the hare in her form seems to be in *fig.* 261., were she equally exposed in a state of nature, twenty persons might pass without observing her, while the twenty-first would from habit detect her instantly.

1759. *The tail or scut of the hare is short,* and in colour is black above and white beneath; in the jack or male hare the white usually predominates, which enables the sportsman to guess at the sex of his game before he overtakes it. The ears of the hare are long and extremely mobile, so as to lie flat on the back when in a state of rest, and at all other times to be moveable in every direction from which sound is likely to proceed. Thus after the manner of horses, the hunted hare carries one ear forward and the other backwards, which gives her a great advantage when flying from her pursuers. The anatomy of the ear also favours its acceptation of sounds generally, but particularly for receiving such as come from behind. The auditive canal is in part soft, and in part hard or bony; and when the skull of a hare is placed horizontally before a spectator, the long portion is seen to protrude itself nearly half an inch with a backward inclination. (See this specialty in the ear of the hare, both figured and described at p.188.) It would seem, however, that the sportsmen of olden times favoured an opinion that this contrariety in the carriage of the ears was more a mark of courage than of fear. De Langley says, "Wt. right stondyng eeres, is but litel aferd and is strong; and zit, whan she holdeth that oone eere upryght stondyng, and that other y leyde lowe, upon her ryge, she fereth but litel the houndes." (*Mayster of Game*, c. iii. fol. 19.)

1760. *The eyes of the hare* are admirably adapted to its physical wants in general, and to its occasional necessities of avoiding its enemies. They are very prominent, so as to command a large field of view, and to be directed towards any point without alteration in the direction of the head; but as the rays from any object must enter under a determinate angle, so the hare cannot at one and the same time see behind and before her. Thus it has happened, that when the hunted hare has kept her eyes steadily on her pursuers, she has of necessity been blind to what was before her; as was the case on one occasion, when as one dog pursued a hare up a path, she not seeing the one that was also running down the path, met it with such force as to fracture her own skull and seriously hurt the dog. Although the hare is furnished with eyelids, her eyes are always observed unveiled by them; neither has she the accessory organ or nictating membrane, but, like fishes, her eyes are always open for vision, be she sleeping or waking. It has been argued that a hare when pursued trusts most to her ears, and little to her eyes; on which we inquire, Wherefore then was her circle of vision so singularly distended? It is only to try such opinions by the test of anatomical and physiological observations, to be convinced of their fallacy; and it would be well that many other *dicta*, peremptorily asserted by sportsmen and penned by writers, were tried by the same rules. Hares in a state of nature are believed to live from nine to twelve years, which we rather ascertain by remarkable instances than by general observation—such is the warfare kept up on this unfortunate race. One of those domesticated by Cowper the poet died at nine, and another at twelve years old.

1761. *The hare, contrary to vulgar opinion, is prolific in the extreme;* were it otherwise, the race would become extinct from the number of its enemies. Hares like rabbits do not pair, but the males by their exquisite powers of scenting, are able to discover the *seasoning* of the female, whose effluvia they follow until they have reached her, with equal determination and certitude, as the stoat, &c. follows her foot scent. A period of our lives spent in the country was devoted to field sports, in conjunction with a close observation of nature in general. Our domicile was in Essex, and presented marsh land, corn land, with numerous well timbered copses, and large sheets of fresh water, and it abutted on a sea-girt shore. Could a sportsman, and one who was somewhat of a naturalist also, desire more? The sporting over the whole of this tract we had the exclusive right of; which we mention merely, to show that the opportunities of observing the habits of animals in general, and of game in particular, were within our reach. To the economy of hares and rabbits which swarmed around us, we paid much attention, and among other objects which engaged our notice was this, of observing one hare following another by scent alone; and occasionally we have seen two male hares on the same scent. There is this remarkable difference, however, between the hare and rabbit, that the male hare, or jack, does not seek to destroy the young as the buck rabbit does, and thus the tiny leverets are left comparatively exposed. A tuft of grass or heather, but more frequently a slight hollow beaten down by the feet of the mother, marks their birthplace and their dwelling so long as they are helpless. When we ourselves have discovered them in woods, they have been deposited equally without any apparent attempt at concealment; probably there might be the semblance of design, by placing them in an angle made by the divergence of two roots, having surfaces as much above as below the ground. We have found them in fallows also on the bare ground, but very seldom in hedges, for there instinct taught the mother that the stoat would assuredly find them. It is not generally known that hedgehogs also will distroy leverets, but we have long been acquainted with the fact. We were once ourselves called by a shrill squeaking towards the middle of a field, where we found a leveret, apparently about three days old, which we rescued from the very jaws of a hedgehog. We instantly killed the hedgehog, but it was too late to save the leveret, whose skull had been fractured. The hare begins to breed before it is a year old, and will rear a progeny of one, two, three, or even more, in number, and is supposed to breed three or four times in the year. We have accounts, to all appearance authentic, of six and seven being found within a slaughtered hare: the gestating term, like that of the rabbit, is thirty or thirty-one days.

1762. *The superfœtation of the hare, and its hermaphrodital character*, are opinions about on a par in point of veracity: its fecundity has given rise to the former error, and a slight specialty of structure, in the formation of the genitals of both parents, but particularly of the male, has given origin to the latter. The young are not allowed to suck beyond a month, seldom so long. Soon after this, maternity ceases altogether, and we have seen, what we have supposed to be the mother, driving a leveret or two away from her. The fecundity of the hare, as already observed, is almost boundless; their early maturity and repeated annual breedings keep up the stock, notwithstanding the vast destruction which takes place yearly amongst them,— the number in some estates being enormous. A brace of hares (the doe being pregnant when shut up) were inclosed in a large walled garden, and proper plants supplied for their sustenance. At the expiration of twelve months the garden was examined, and the produce was fifty-seven hares: on the manor of Sir Thomas Gooch also there were six thousand hares killed in 1806. The hare retires from her nocturnal prowlings to what is called her *form*, which is variously situated, as under cover of a wood, or within a hedgerow, or otherwise in the open field; and these several situations are preferred, one or other, at particular seasons of the year, or according to the state of the weather. In her form she sits more concealed by the resemblance she bears in colour to every thing around her, than by any studied care in hiding herself. Her carcass conceals her hind-legs, and her head, resting on her fore-legs, equally hides them from observation.

1763. *The hare, like the rabbit, is liable to become tabid or dropsical by too succulent food;* thus in very wet seasons a mortal epidemic sometimes visits them. They are also subject to an inordinate growth of the front teeth, particularly when shut up in hare courts, where they have not trees to bark, or wood to gnaw. Accounts of horned hares are likewise met with, not only in the writings of Gesner and Aldrovandus, but also of many other naturalists. Dr. Grew, in his *Museum Regalis Societatis*, mentions a pair of these horns which were at that time in the collection of the Royal Society; and Mr. Schreber has lately figured a pair in his work on quadrupeds.

1764. *The geographic distribution of the hare is very extensive*, and consequently its varieties are extremely numerous, and the sizes, forms, and habits being adapted to the physical wants of the family, greatly multiplies their diversities. The varying hare is found in the Alpine tracts of Norway, Lapland, Russia, Siberia, and Kamtschatka. It is in general smaller than the common hare of the south, has shorter ears and more slender limbs. It varies in colour, as its name implies, as the seasons change, being of a light grey in summer, and in winter, with the exception of the tips of the ears which remain black, it is a pure white: in North America the varying hare is little larger than a rabbit. We have elsewhere enlarged on the phenomena of change dependent on season and locality.

1765. *The Baikal hare is larger than the British species.* Its flesh, Dr. Shaw informs us, is white, and its habitation is in the holes of rocks and caverns. The Brazilian hare, on the contrary, resembles the British in every other respect except that of having a white ring round the neck; but even this variation is by no means constant. The Cape hare in size resembles a rabbit, in colour it is rather cinereous than ferruginous, and is singularly characterised by a bushy tail. It inhabits the rocky mountains about the Cape of Good Hope.

1766. *The Alpine hare is little larger than the Guinea pig*, and was first described by Pallas as inhabiting the Alpine mountains, and extending also to Baikal and Kamtschatka. It resembles the rabbit in figure; and, like that, burrows under ground, or conceals itself in rocky fissures. The Agotona hare, Pallas informs us, is a small variety found among the Mongolians, which, like the Alpine hare, prepares its winter store of food, and carefully dries it ere it stacks it up for future use. The calling hare is a diminutive variety, weighing, according to Shaw, only three to four ounces, but is clothed with a very long furry coat, and inhabits the north-east parts of Russia, deriving its name from an evening call it makes, not unlike that of the quail.

1767. *The minute hare is little bigger than the meadow mouse.* "Parturiunt montes," &c. It must be fine coursing of these diminutive gentry; and we are told that they are actually very much sought after in Chili as a great delicacy. Molina, who has imperfectly described it, informs us that the Chilians call it *cuy*.

1768. *A hare warren is sometimes appended to the domain of the hare hunter.* Mr. Beckford says it should be paled round; but where the expense is no object, a wall is much the better defence. Paling is always in danger of destruction; and stoats, weasels, polecats, badgers, foxes, and terriers, will gnaw their way through it, and help themselves. Mr. Beckford's warren, to use his own words, "is a wood of nearly thirty acres, and it is cut into many walks: a smaller warren, which would perhaps answer as well, should have only one walk, and that round the outside of it. No dog must ever be allowed to enter it; and traps for stoats and polecats should be constantly set; and parsley sown in it, will induce the hares to keep at home. When, at the end of the season, the hares become shy of the traps from having been often caught, it will be necessary to drive them in with spaniels. The warren hares will be found very thick round the warren, for they will be unwilling to leave it; and, when disturbed by dogs, will immediately go in. The number of hares which a warren will supply, is hardly to be conceived; but this gentleman prefers a warren in the midst of an open country (which might be stopped close on hunting days), to the catching hares in traps, and then turning them down: a warren so situated would supply the whole country with hares, which, after one turn round it, would most probably run straight an end." Mr. Beckford takes these, when wanted for turning down before harriers or greyhounds, by means of traps, not unlike the common rat traps, and made of old wood. It will be some time before the hares will venture into them, but by being always left open at the meuses, and the hares going continually through them, they at length have no mistrust, and are, when wanted, easily taken; other meuses should, however, be left open, lest a distaste should make them forsake the place. The number of traps Mr. Beckford had was twenty; and when hares were wanted, five or six of the traps were set, which rarely failed of catching as many hares. The warren should be paled, and the meuses made of brick. Another authority directs that "The hare warren be planted with acacia, cistus, Spanish broom, and all those shrubs on which the hare delights to browse; and sufficiently stocked with lucerne, parsley, and rutataga, which will not only cause the hares to improve to a great size, but prevent their straying to overrun the neighbourhood. Trapped or boxed hares from a warren generally run straight, making no doubles, from being out of their knowledge, as not having been accustomed to range the country." (*Scott's Field Sports*, p. 368.)

1769. *A superabundance of hares is injurious in hare parks or warrens*, and without some caution, they will multiply to excess. We have already observed that hares do not couple, but that their sexual intercourse is promiscuous; consequently one male hare can impregnate many females, as we find to be the case among tame rabbits, where one buck is kept to serve several does. The female hares therefore, when confined within the limits of a warren, or even a hare park, are liable, when *in season*, to be pursued by all the males of the locality, to the evident injury of the fecundity of the females. It is common, therefore, on many estates where hares are prized, to trap them; when of those caught the males are destroyed, and the females again turned loose. Some gamekeepers boast not a little at their being expert enough to tell the sex as soon as the hare is started, which enables them to act accordingly. Distinct sexual markings certainly do exist nearly in an equal degree in the male hare as in the male rabbit, where the sexes are sufficiently distinct. The male hare is somewhat redder about his ears and fore parts: he is also rounder in the head; and, if we may so express it, has altogether a more bluff appearance than the female; and although the male scut exhibits more white than the female, we think that, contrary to the usual order of nature, the sexual external indications in the hare preponderate most at the other end. Mr. Jesse in his *Gleanings* informs us, that the number of hares in the king's parks is lessened after the following manner: — "When the keepers want to decrease the number of male hares, they look for a hare in its form, and when found, they ride round it in a circle. They continue to do this for some time, and if the hare keeps her seat, two men walk up on each side of her, holding a net spread out between them. At a given signal they drop it, and the hare is caught. If it is a female, it is again turned loose." (P. 188.)

Sect. II. *Ancient Hare Hunting.*

1770. *The hare we know to have been a favourite object of the chase* more than two thousand years ago. Xenophon the renowned, who lived three hundred and fifty years before the Christian era, wrote on hare hunting as a well organised pursuit of long standing even in his time. Among the numerous ancient writers on venation, his treatise on the subject stands pre-eminent; and if this variety of the chase needed an advocate, it certainly found a powerful one in this great warrior and philosopher. Its merits, whether we view it as a practical or theoretical production are such, that we cannot help being struck with the depth of his researches, and the extent of his varied practices; and a few extracts only are required to convince the reader of the truth of our assertions.

1771. *Of scent Xenophon observes,* that "In the winter there is none early in the morning, when there is either a hoar or a hard frost. The hoar frost, by its force, contracts and contains all the warm particles in itself, and the harder frost congeals them; in these cases, dogs with the most delicate noses cannot touch before the sun dispels them, or the day is advanced, when the trail yields a scent as it evaporates. The trail is also spoiled by much dew, and by showers after a long drought, which, by extracting scents from the earth, hurt the scent until the ground is again dry. The south winds are injurious by spreading moisture (it is exactly the reverse in our own climate); the north winds, if not too severe, preserve it. Rains and drizzling mists drown, and the heat of the moon at the full destroys it: the trail is likewise then most irregular, for in the light they play together, and throw themselves very differently than when merely at feed. In the winter, autumn, and summer, the trail is usually straight; in the spring it is more perplexed; for though these animals copulate at all times, they do it chiefly at that season, and their wandering on that account in search of each other occasions it. The scent of the hare going to her seat lasts longer than that of her course when pursued; in going to her form, she proceeds slowly and stops often, but her course, when chased, is performed running, therefore the ground is saturated with the one, and not filled with the other. The scent is stronger in woods, for there she is touched by many things, whether her pace is speedy or slow. "The hare makes her seat," he continues, "under, upon, or within, every thing that covers the surface of the earth: in spring she prefers cultivated places to the mountains, but wherever seated, there she continues whilst the hounds are trailing to her, unless she has been much alarmed in the night, when she will sometimes move." Of the hare itself he says, "The mountain hares are more swift than those bred in a plain country; the marsh hares are the slowest of any; those hares which wander in all places are the most subtle and difficult to pursue; those of a year old will run the first ring swiftly, but not at all afterwards, being very active but weak; those that are found in open situations run the longest, on account of their being used to the light; those in woody places the reverse, being hindered by the darkness. Their eyes project, and the eyelids are not sufficiently long to protect the ball, which circumstance, added to the quantity of sleep that the hare takes, renders the sight indistinct: the swiftness of its pace contributes also to dazzle it, for a hare that is pressed by dogs passes by every object before she discovers what it is, on which account she often runs against many things." (The fact is correctly stated, but the cause incorrectly. According to our opinion, the eye-globe is so directed in flight as only to receive impressions from behind: these the hare can see when running with precision.) The following will create a smile: "Her tail is inconvenient for running, being unable, on account of its shortness, to guide the body, but she does that with either of her ears, and when nearly taken by the dogs, she lays down the ear on the side from whence she apprehends danger, by which means she turns instantly, throwing the dogs that are dashing at her a great way behind."

1772. *On the breeding, training, and entering of hounds for chasing the hare,* Xenophon also observes, "The best time to breed is in winter, when the labours of the chase are over, on account of the quiet of that season and the approach of spring, which is the time of the year agreeing best with the growth of dogs. The bitches are to be shut up with the best dogs, and whilst in whelp should not often be taken out, lest the exertion should injure them. They go sixty days with their young. The puppies should be left with the mother, and not put to another bitch, for the care of others is not so good for their growth; the milk, and even the breath, of the mother is better for them, and her caresses more endearing. When the whelps can run about, they should have nothing but milk for the first year (which is a proper food for them at all seasons), for the filling them with too heavy food will distort their legs, fill their bodies with diseases, and hurt their inside. The bitch puppies should be first taken out to hunt at eight months old, and the dogs at ten." (Allowances for these directions must be made for the warm climate of Greece). "They were not," we are further told, "to be let loose during the trail, but being controlled by long leather slips, were suffered to follow the hounds that were trailing, and were also allowed to go over the scent. When the hare was started, if the puppies promised to have much foot, they were not to be slipped immediately, but after the hare was got so far as to be out of sight; for those that are high mettled and swift of foot, if let go while the hare is in view, will be apt to strain themselves before their limbs have sufficient strength. If slow, nothing hinders their being slipped directly; for having no hopes of catching their game by speed, they will not be so eager, but may be permitted to follow by the foot until the hare is started again, which, if taken, the young hounds should be permitted to tear. When they will not keep to the scent, and run straggling about, they should be called back until they are taught to find the hare, lest being used to hunt without order they become skirters, — a fault which hounds should not be suffered to learn. When they want food, the huntsman himself should give it them, for they will disregard the person who feeds them when not hungry, but will diligently follow him who attends and prepares their food when they are so."

1773. *The practice of the ancient hare chase is thus described by Xenophon:* — "When the hare is started there should be no hallooing, lest the hounds being made too eager, should not stoop to the scent. Hares are most conspicuous when running over ploughed land. If they perceive the dogs, they stop, and sitting on their breech raise themselves up and listen if they hear any opening of the hounds near them, and then turn from the spot where they hear it; but if there is no noise, they will of their own accord return by the same track to where they were first disturbed from. Hounds ought to be hunted every third day if well, and the weather suitable, but should never be taken out to hunt unless they eat their food heartily, their refusal being a sign of ill health: a high wind is likewise unfavourable to them, as it dissipates the scent, and prevents their hearing eath other: neither can the toils or nets stand: they should never be suffered to hunt foxes, as that does them the greatest damage, and they are never so steady to their own game afterwards. The places of hunting should be frequently changed, that the dogs and the hunter himself may attain a thorough knowledge of the country. An early hour is necessary, that the trail may not be gone The huntsman's dress should be light, and he should have a pole in his hand, the man who carries the nets following him, and they should proceed silently, lest the hare should steal away before the nets and toils are placed." We have had other occasions of remarking on the difference between the ancient and modern chase, with reference to the humanity of each; we have here also proof how much more *fair*, in sporting language, are the modern than the olden methods, when toils and nets were placed in aid of the dogs to make destruction doubly sure. The sensitive critic who inveighs against all sporting, must needs allow that we manage the matter more humanely than our forefathers.

1774. *Blome*, a multifarious writer of the latter part of the seventeenth century, in his *Gentleman's Recreation*, which is a work of much merit for the time he lived in, has collated from the sporting authorities which preceded him, a summary of the practice of hare hunting, as it may be presumed to have existed two hundred years ago. Even Blome, whose avocations might be supposed to have made him little alive to the joys of the chase, observes of hare hunting, that it is an art full of subtlety and craft, and possessed of divers delights and varieties, which other chases do not afford. "An expert huntsman," he tells us, "may distinguish hares as to their sex, strength, age, and craftiness, by these and other signs. If when a hare riseth out of her form she sets up her ears, and runs a little slowly at first, with her scut cast over her back, 'tis a sure sign she is an old crafty beaten hare. When you hunt a hare to her form, if you find she hath beaten the hard highways, that she feedeth at a good distance out into the plains, and that her doublings and crossings are wide and large, you may conclude 'tis a jack hare; for the females usually keep close to the side of some grove or coppice, and turn and wind like a coney in the bushes; and when she goeth to relief in the corn fields, doth seldom cross over the furrows, but follow them, feeding on the thick tufts of corn; and when she is hunted, will use many doublings and turnings, but seldom makes out end-ways or fore-right. Some, when hunted, will swim over great pools and rivers; others will put an exchange upon you, by starting up a fresh hare out of her form, and sit in it herself. Sometimes they will double twenty or thirty times, in about forty yards forwards or backwards over a brook; and sometimes they will rest themselves in the midst of the water upon weeds or bulrushes. A huntsman must likewise observe whether it be a buck or a doe, and whether she be acquainted with the place or a stranger; for doubtless a hare that is wonted to a certain place, especially a female, will all the day that she is hunted hold the same ways, cast about the same coasts, and pass by the same meuses until her death, or escape, unless she be hard run, so that she is forced to make out end-ways before the hounds; but at first she will do nothing but turn, cross, and double, passing several times one way and in the same path. Some hares are so cunning, that upon hearing the noise of the huntsman's horn (although at a good distance) will leave their form, and take sanctuary on some weeds or bulrushes in a river." (P. 91.) We were lately much amused with a supposed important communication made to a zoological periodical of much reputation, which was that a hare had actually been seen swimming; the mere relation of which as a fact, it appeared, occasioned much wonder and some scepticism. The writer of this account knew little of hares, had not read Blome, and had certainly not been entered to thistle whipping. We have ourselves, in hare hunting, many times crossed brooks, rivers, and fords, over which the hunted hare had swam.

1775. *On the practice of hare hunting in those times,* Blome remarks, "The huntsman, when he perceives by his hounds that the hare hath passed by him at relief upon the highway's side, and that she hath crossed and doubled much on dry places, and yet not much broken out, nor relieved in the corn, he may be confident that it is a passenger or stranger in those parts. The nature and use of such hares is this, they get them to some high rising ground, and take a view where they may secure themselves, and when perchance they are started out of their form they double, winding about to their forms, as unwilling to forsake them; but when they find the hounds hold in with them, then they may chance to lead them a dance of seven or eight miles across the country. Whosoever hath hunted one and the same hare twice, and doth not kill her the third time, deserves not the name of a huntsman; for generally they use the same sleights, doublings, and crossings."

Sect. III. *Modern Hare Hunting.*

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HARRIERS GOING OUT.

1776. *A pithy work,* although dressed in a very quaint garb, appeared in 1733, entitled *An Essay on Hunting*, by a Country Squire. This little tome exhibited the dawn of a more systematic method of hunting this animal; and if it was not very diffuse in practical rules, it contained much curious disquisition on the subject of scent; and although there may be much in it that is chaffy, there are also many solid grains of information, from which we have already extracted some specimens, as will appear by referring to our subsection on *Weather and Scent*, p. 445. Even in this work, early as is its date compared with some others, there are gleams of those lights which have since shone with lustre on the practice of hunting generally, but which are here more immediately applied to hare hunting.

1777. *The practice of hare hunting,* from the time of this publication to the present, has been progressing, particularly as regards the dash and promptitude of the affair, and also in the appearance of its agents, as witness the harriers, the hunters, their riders, and the *tout ensemble* of a scene of modern harehounds, leaving their kennel, as in our heading cut (*fig.* 262.). "In the modern system of hare hunting there is no more tracking to the seat of the hare than there is to the kennel of the fox; but both animals are now chiefly stumbled on by accident, and instantly fly for their lives. With the system of hunting also has the kind of hound been altered, there being now no longer occasion for that nice distinction of scent which was wanting, to be a match for the windings and doublings a hare was able to make in her course when hunted by the slow and fastidious southern hound, and which was essential to the finding her at all in countries where hares were scarce, by the perplexing means of a very cold trail." (*Ency. Brit.* vol. xi. p. 750.)

1778. *Mr. Beckford observes,* "Hare hunting requires no ordinary capacity to overcome its difficulties;" and he continues, "In proof of our assertion, that there is more of true hunting with harriers than with any other description of hounds, we shall point out a few of the difficulties which they have to overcome. In the first place a hare, when found, generally describes a circle in her course, which is in itself not only more difficult to follow, but it naturally brings her upon her foil, which is the greatest trial for hounds. Secondly, the scent of the hare is weaker than that of any other animal we hunt; and, unlike some, it is always the worst the nearer she is to her end; which accounts for its being better, and lasting longer, when going to her seat than when running. There is scarcely any scent from a hare until she is in motion; therefore hounds constantly draw over her, and of course, according to the length of time she has been gone to her seat after feeding, will be the difficulty of hunting her by the trail. In fact, at the most distant part of her previous night or morning's walk, the most tender nosed hound in a pack will be scarcely able to own the scent at all. But the grand puzzler of all is, when hounds get upon the counter trail, about the middle of a hare's work, and the scent lies so equal that it is most difficult to distinguish *heel* from *chase*. No such difficulty as this can occur in any other description of hunting, and it is such as can only be obviated by the skill and experience of the huntsman in his notice of the working of his hounds. But although this difficulty is alluded to by almost all writers on the chase, we know not where to look for directions to the huntsman at the critical moment. It is true Mr. Daniel, in his *Rural Sports*, says, "To find out this, see if your hounds challenge counter; if they double, and carry it on counter, they will soon signify their error by opening singly." Under the same views the Country Squire observes, "The counter trail may be taken when hounds are first cast off, and happen to hit about the middle of the hare's works, or nearer the seat than her feed; there the scent lies so equal, that the dogs, from being over eager, often get upon the heel: this the huntsman will judge of by the notes of his hounds' first challenge in; if they double and carry it on *counter*, they will soon signify their error by opening only *singly;* for instead of the scent improving upon their noses, it perceptibly gets worse, and dwindles to nothing." It is here, indeed, that the judgment of the judicious huntsman becomes apparent, in discriminating when the hounds in their anxiety to keep well with the scent, which failing forward, are apt to turn and hunt it *heel-ways*. In such case, however, the scent will be less stimulant; and it is to be presumed, therefore, that the quick ear will detect such deficiency in the cry of the pack, which will slacken the farther the hounds proceed with it.

1779. *The harrier* (*fig.* 218. p. 403.), has engaged so much of our attention in our chapter on hounds, that we shall here do little more than remark, that hounds which are to be principally hunted on downs, and other upland districts, should be altogether lighter in build, and less in height, than those to be confined to hunting in heavy countries, where, on the contrary, they should be both taller and more bony. The upland pack of harriers need not average more than seventeen inches in height; while the hound appropriate to heavy districts, as the wealds of Kent and Sussex, should be an inch, or an inch and a half higher. We have seen some packs averaging twenty inches, and occasionally we have met with one even taller; but all such were, as we thought, out of place, and were fitter to *mob* a hare to death than to hunt her. But while we would not advocate racing in a pack of harriers, yet we should object to their want of either speed or mettle; and whenever either of these qualities seem on the wane, we would recommend that a slight foxhound cross be thrown into the strain.

1780. *The number of the harrier pack* should correspond with the country hunted over; for where there is more to do, more assistance is required. The *maximum* should not be more than twenty, and the *minimum* not less than sixteen couples in the field. The actual number of hounds kept should likewise be regulated by the number of hunting days in the week. Twenty-six couples are not too many to furnish effective hounds for hunting three days a week; while an extra couple or two added to this number, may be found convenient to meet unforeseen contingencies. Mr. Beckford's opinion on the subject of the harrier pack, individually and collectively, is, that "The number of hounds should not exceed twenty couple in the field, from the difficulty of getting a greater number to run well together, and a pack of harriers (as well as foxhounds) are incomplete if they do not. A hound that runs too fast for the rest ought not to be kept. Some huntsmen load them with heavy collars, or tie a long strap round their necks; a better way would be to part with them; whether they go too slow or too fast, they ought equally to be drafted. The hounds most likely to show sport, are between the large slow hunting harrier and the little fox-beagle: the former are dull, heavy, and too slow; the latter are lively, light, and too fleet: the first sort have the best noses, and will kill their game at last, if the day be long enough; the other, on the contrary, dash and are all alive, but every cold blast affects them, and in a deep and wet country it is not impossible but that some of them may be drowned." He further observes, that "With great trouble, and by breeding for many years a vast number of hounds, he had succeeded in his endeavour of getting a cross of both kinds, with great bone and strength, into as small a compass as possible; that they were handsome, ran well together, had all the spirit that could be wished, and would hunt the coldest scent." — "Harriers to be good," he remarks, "must be kept to their proper game," which is perfectly true. It was, we believe, the celebrated Brookside harriers that did not become steady for weeks, after having a buck turned out before them. The huntsman to a harrier pack, Mr. Beckford is of opinion, "should not be young, and for patience he should be a very *grizzle;* the quieter he is the better; he should have perseverance, and never give up a hare when it is possible to hunt her, as she is sure to stop, and may always be recovered." He jocularly remarks, that, "Were it customary to attend to the breed of huntsmen, as well as to that of hounds, the family of the *Silent Gentleman*, mentioned by the *Spectator*, would furnish an excellent cross, and that a female of his lineage, married to a knowing huntsman, would probably produce a perfect hare hunter." The whipper-in to a pack of harriers should not be allowed to stop a hound or smack his whip, without the huntsman's order. Noise and rattle are directly adverse to the first principles of hare hunting, which are to be quiet, and leave the hounds to themselves. Town packs of harriers, that have no professed huntsman to follow them, we have ourselves, always found to be excellent. Mr. Beckford also acknowledges this, and advances for it this reason, that, "Although the hounds had no one to assist, there was no one to interrupt them, which in this kind of hunting is more material." One accident however, it should be stated, sometimes occurs to hounds when they are left to themselves, which is, that of *running back the heel.* Hounds are naturally fond of scent; and thus, when unable to carry it forward, they will turn and hunt it back again; and here it is, that being left to themselves, they make a fault frequently. Mr. Beckford however justly observes to the effect, that good hounds seldom give up the scent at head; if they do, he says, "there is, for the most part, an obvious reason for it." This observation a huntsman should always make; it will direct his cast: he will attend as he goes, not only to his hounds, accurately noting which have the lead, and the degree of scent they carry, but also to the circumstances of change of weather and difference of ground, the distance which the hare keeps before the hounds, her former doubles, and what point she makes to. Should a long fault make his assistance necessary, and the hare should have headed back, he will observe whether she has turned of her own accord, or has met any thing in her course to turn her. When he *casts* his hounds, let him begin with a small circle; if that is unsuccessful, try a larger; and as a hare generally revisits her old haunts, and returns to the place where she was first found, if the scent be quite gone, and the hounds can no longer hunt, that is as likely a cast as any to recover her. In all his casts let him watch the hounds, that they are actually employed in attempting to recover the scent; for at these times they must try for the scent, or they will never find it: and he is to make his cast also either quick or slow, as he perceives his hounds try, and according to the goodness or badness of the scent.

1781. *Trailing the hare to her form* was advocated by Mr. Beckford as being of great service to the hounds, and as proving their goodness to the huntsman more than any other hunting, by discovering to him which of them have the tenderest noses: nor is there a doubt but that those hounds which find their own game, will certainly hunt it with the most spirit afterwards. Hare finders unquestionably render hounds idle; they also make them wild. "Mine," says Mr. Beckford, "knew the men, and would run full cry to meet them; they are however of one great use, they hinder hounds from chopping hares. They who make a business of hare finding (and a very advantageous one it is in some counties), are enabled to find them in any weather, by observing the direction of the wind. People frequently do not discover hares from not knowing them when in their forms: thus a gentleman coursing with his friends was shown a hare that was found sitting; 'Is that a hare?' he cried, 'then, by Jove, I found two this morning as we rode along.'" Nature appears to have gifted the hare with some singularly preservative properties, of which her diversified tintings offer a proof: these so harmoniously blend with the matters which surround her, as to make her escape from all but the practised eye very common. It is not that she lies concealed by cover; on the contrary, she frequently forms on the loo side of a clod in a ploughed field, and yet, although so situated, her mass looks so shapeless, that she is, by those not habituated to look for her, more frequently passed over than discovered. Her ears also are so mobile that she can take in sounds from every quarter: her eyes are never shut, and although she without doubt sleeps, yet her visual organs are so framed as never to be veiled; and her sleep is also so light, as to instantaneously communicate through them and her ears the approach of danger. If discovered, her speed would in most cases save her from common foes; but she is assailed on one part by dogs artificially bred with superior scenting powers, or on the other with such as, though almost scentless, are fleet as the wind. — Poor puss!!

1782. *When the hare is first started* we would press on the spectators that they cannot be too quiet, for if puss be much frightened she is very apt to be headed back, and the dogs are rendered liable to overrun the scent every instant, which their natural eagerness will at such a time compel the best of them to do. This error of too much encouragement from the company, or injudiciously pressing too close upon the dogs, may continue beyond all possibility of recovering it: crowding and pressing should on this account be guarded against. In such case, on the contrary, keep wide of the dogs, as our friend and his lady are seen to do in *fig.263.*, that, if necessary, the gallant pack may have space to *try back* and recover the lost scent. This done, the company with propriety can advance, and the hounds may be approached, leaving however, at all times, sufficient room for them to turn and recover the scent when it fails. Hounds through the whole of a hare chase should be left almost entirely to themselves, nor should they even be much hallooed. If the hare doubles let the dogs hunt through the doubles, for it is a maxim that a hare is not hunted fairly if hunted otherwise; the hounds should follow every step she takes, as well over greasy fallows, as through flocks of sheep or droves of cattle; nor should they be ever cast if able to do any thing without it. On high roads and dry paths the huntsman should always be doubtful of the scent, nor give his dogs much encouragement; but when a hit is made on either side, it is then right to encourage them by cheering.

HARE CHASE.

1783. *The Country Squire*, an authority of no mean note, offers the following, as we think, very valuable remarks on hare hunting: — "I would advise," he says, "a young huntsman, when the scent lies well, always to keep himself far behind. At such a time, especially if it be against the wind, it is impossible for the hare to hold forward, nor has she any mode of escaping, but to stop short, and when all are past, to steal immediately back. This is often the occasion of an irrecoverable fault in the midst of the warmest sport, and is the best trick the hare has for her life in scenting weather. If the huntsman therefore is not too forward, he will have the advantage of seeing her manœuvre, and of assisting his hounds at this critical moment. Upon sight of the hare avoid, above all things, the vile practice of hallooing hounds off a scent to lay them on after a view; it not only spoils the dogs by accustoming them at every fault to listen for and expect the halloo, but it is foul sporting: equally unfair and to be condemned to suffer the pricks of the hare's footing to be sought for when she runs the foil; for although it is admitted that by such pricking and discovering her steps no hare can escape, yet it is an unmanly mode of assisting hounds, which no huntsman, who is a sportsman, will be guilty of himself, or condescend to make use of when done by others. The huntsman should never be noisy when a hare is first started; let him not only check his own forwardness, but that likewise of the inexperienced sportsman. Hounds are apt enough, in the first heat of their mettle, to overshoot their game, and hours of sad sport have happened from driving them too fast. Too many people think a chief part of hunting consists in hallooing loud and riding hard, but they are mistaken, and must not be offended should the huntsman swear at such practices. No tongue can be allowed but his, nor at this particular time ought any one to be more forward. The chief considerations for the huntsman when the hounds are at fault are, how long the hare has been on foot, and how far the hounds make it good; if she has not been long and hard pressed, he must expeditiously try a wide circle, and so persist in contracting his circles, until he returns to the place where the dogs threw up. Should the hare have been drove hard, or be nearly dead run, the huntsman need only try a small compass, and that slowly and cautiously, for she will only leap off a few rods and *quat*, until one or other of the dogs jumps upon her. A huntsman should be careful of talking too loud to hounds, and in a key which, instead of cheering, confounds them. Give me," says this author, "a fellow of everlasting patience and good temper, who does not consider hunting merely as his business, but who naturally loves it; one with a clear moderate voice, that speaks to an old hound when at fault frequently and with quickness, and cherishes him in a tone that enforces courage, and induces him to stoop perpetually to recover the scent. It is by no means the huntsman's business to endeavour, by pricking the hare, to hit her off; in the first place it is unfair, and secondly, whilst he is poring with his eyes upon the ground, not one in twenty of the hounds will have his nose to it. If there is a long default, the huntsman should attend to the tender nosed dog, which perhaps he disregarded in the morning as a babbler, and whom he pronounced worthy of a halter for opening at nothing; his superior excellence of scenting may now show itself to have merited a different judgment, and may encourage some stauncher hound to stoop, which he would not otherwise do."

1784. "*The best harriers,*" says the same authority, "are those that never pursue any other game than hares: it is advisable never to let them change for a fresh hare, so long as they can possibly follow the hunted one; nor to take off their noses from the scent they are hunting, to lay them on nearer and to gain ground It is granted that this is a common trick with those that have the spit in view; but it is barbarous to the hare, and (as it ought) seldom fails to spoil the hounds with whom it is practised. However it may curtail the hunting season (for hares should not be hunted before Michaelmas nor after February), harriers should never be suffered to hunt foxes; the scent and straight forward flight of these animals when hunted, is so different from that of the hare, that it does them the greatest harm. Harriers are not a match for a fox, to press him as he ought to be hunted; yet they acquire a knack of getting too forward for the confined work of a hare, and lose the patience they formerly possessed of unravelling all the doubles, by which their game endeavoured to escape them, and in doing of which their goodness was chiefly manifested."

1785. *Harriers when at check* also should generally be left pretty much to themselves. We have ourselves seen much mischief done by over officiousness on the part of the huntsman, who is directed by Mr. Beckford not to move his horse one way or the other. Hounds lean naturally towards the scent, and if left alone will soon recover it; and, as wittily observed by him, "If a hound is spoken to at such a time, calling him by his name (which is too much practised), he seldom fails to look up, as much as to say, What the deuce do you want? Had he the faculty of speech he would add, before he stooped to scent again, You fool, let me alone!" When hounds are at fault in the first instance, not a word should be said; no other tongue should be heard but that of a hound; and so inflexible in this particular was a friend of Mr. Beckford's who kept harriers, that a gentleman accidentally coughing whilst his hounds were at fault, he rode up to him immediately and said, "I wish, sir, with all my heart, that your cough was better." That this eminent sportsman was essentially humane and a lover of fair play, although he had fallen under the lash of the critic for a supposed want of these qualities, the following among many other of his instructions will testify: — "It is a fault for harriers to run too fast; scope should be given for all the hare's little tricks, nor should she be killed foully. She will make a good defence when not unfairly hunted; and, as far as her own safety is concerned, the hare has more cunning than the fox, and uses shifts to save her life far beyond all his artifices."

1786. "*A hare generally,*" it is said, "describes a circle in her flight, larger or smaller, according to her strength. We have our doubts on this point, and are of opinion that other influences operate. The female hare will not make so large a détour as the male; and either sex when having been hunted, and yet having escaped, whether it was by wide or circumscribed sweeps, will follow nearly the same track when again pursued; much however will depend on her general habits, and the openness of the country. In inclosures, and where there is much cover, the circle is frequently so small that it is a constant puzzle to the hounds. Besides running the foil, they frequently make doubles, which is going forward to tread the same steps back again, on purpose to confuse their pursuers; and the same manner in which the first double is made, they mostly continue, whether long or short." "This information," says Mr. Beckford, "if properly marked by the huntsman, may be useful in his casts. When hares make their doubles on a high road, or dry path, and then leave it with a spring, it is often the occasion of a long fault: the spring which a hare takes on these occasions is hardly to be credited, any more than her ingenuity in thus trying to escape. Often, after running a path a considerable distance, she will make a double, and stop until the hounds are past her; she will then steal away, and return the same way she came; and it may be observed this is the greatest of all trials for hounds. It is so hot a foil, that in the best packs there are not many hounds that can hunt it; those hounds must be followed that can, and the foil when she breaks it, (which in all probability she will soon do, as she now thinks herself secure), be tried to be hit off: when the scent lies bad in cover, she will sometimes seem to hunt the hounds. The huntsman to harriers should do all in his power to prevent the hounds from chopping hares. It is a useless waste of game, and requires vigilance to prevent, for some hares lie very close, and some situations favour it, as furze, &c. Thick hedges are also hides; therefore let all such be well beaten some distance before the hounds; but let it be done by an attendant, for if the huntsman beats the hedge himself, the hounds will be on the watch, and she must have unusual luck to escape being chopped. Hares seldom show so much sport as when they do not know where they are, and for the same reason they run also well in a fog. When hares set off down the wind, likewise, they rarely return; and hounds cannot be pushed on too much, particularly when the hare is sinking: the old hounds, well knowing this, will get forward and rush to the head. We need not pursue the subject farther, as it usually happens that the circles which the chased hare describes, are each more and more contracted, until at last she is circumscribed within the spread of the pack, when being seized by one, her cries call the huntsman forward to save the remains of poor puss, as seen in *fig.* 264., whose death however is not signalised with a thrilling whoo-whoop, although she may yet have the honour of gracing the table of the hunter, instead of being hung in effigy over the stable door.

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DEATH OF THE HARE.

CHAP. VIII.

DEER HUNTING IN ALL ITS VARIETIES.

1787. *Deer hunting* appears to have been a very popular pursuit in every age, and in almost every country. Particularly it has been chosen as the favourite recreation of kings, princes, and nobles; nor can it be denied, that the high bearing of the principal members of this group give great interest to their capture. Xenophon treats of stag hunting as a masculine and royal sport (*De Venatione*, c. ix.): but even in his hands, it is disgraced by that union of weapons which characterised all the huntings of the ancients; by whom missiles, traps, snares, ambushings, and fierce dogs, were employed together. By Xenophon Indian dogs were preferred for deer hunting, on account of their size, strength, speed, and courage. The classic pages of the Iliad make frequent mention of the chase of the stag, and in the description of the death of Hector, it is very emphatically introduced, and as admirably versified by Pope.

1788. *The olden method of stag hunting among the Britons*, appears to have been conducted in a manner similar to that of other nations. In the history of the Anglo-Saxons we find one saying, "I am a hunter to one of the kings. How do you exercise your art? —I spread my nets, and set them in a fit place, and instruct my hounds to pursue the wild deer till they come to the nets unexpectedly, and so are entangled, and I slay them in the nets. Cannot you hunt *without* nets?—Yes, with *swift hounds* I follow the wild deer. What wild deer do you chiefly take?—Harts, boars, and reindeer, and goats, and sometimes hares." (*Translation of Arrian*, p. 121.) The Norman conquest introduced a reserved right, on the part of the king and his favourites, over all wild animals as objects of the chase, but particularly over deer, for the propagation of which vast tracts of land were wrested from their owners. Further, to protect the deer within the inclosures thereby made, fines of the heaviest nature were exacted: if one of these animals was even accidentally slain, the punishment was severe; and if purposely, the delinquent was executed. Of the jealousies and deadly feuds occasioned by this tyranny, many legendary stories remain as proofs; and the ballad of *Chevy Chase* hands down as tragic a tale as ever was penned. These arbitrary restrictions naturally begat attempts to break through them; and fines, imprisonments, and executions, were in a continual course of infliction. It also appears, that to some trespass of the forest laws we are indebted for the works of the greatest dramatic writer that Britain has to boast of. The immortal Shakspeare, it would appear, had, as is too common to inexperienced youths, fallen in with bad companions, amongst whom were some that practised deer stealing, who engaged him more than once in robbing Charlecote Park near Stratford, belonging to Sir Thomas Lucy. For this he was prosecuted, and in order to be revenged, he wrote a ballad upon that gentleman; and although this, perhaps the first essay of Shakspeare's poetry, be lost, it is said to have been so very severe, that it incensed the person, who had already commenced a criminal prosecution against him to that degree, that he was obliged to leave his business and family in Warwickshire, and shelter himself in London, where, from being a menial attendant about the doors of the theatre, he became an ornament within; and if his acting was not transcendent, his writings were of a nature to render his fame imperishable.

1789. *Clandestine deer hunting,* it must also be noted, was not considered a disgrace in these times. "In *Hutchin's History of Dorset* we are told that such was the case; and that many respectable persons followed it as a nocturnal amusement, and, if discovered, had 30*l.* in their pockets to pay the penalty, and permission to repeat their sports on the following night if they chose to venture." These nightly huntings were mostly conducted by adepts in the art, who were clad in an appropriate costume, which was called "the cap and jack." The cap was of straw, and tightly rolled, much after the manner of our beehives, and formed an admirable defence against the forest keeper's quarter-staffs. The jacks, or jackets, were of strong canvass, and so wool padded, as to form an equal defence for the body, as the straw cap for the head. To such an extent were these nightly depredations carried on, that an act of parliament was passed, which, by designating the offence deer stealing instead of deer hunting, and by changing the punishment from a mere fine to that of transportation, greatly checked the practice, although it did not entirely put a stop to it, as we see by the following account, which Mr. Gilpin has introduced in his remarks on *Forest Scenery:* — "I once had some occasional intercourse with a forest borderer, who had formerly been a notorious deer stealer. He had often, like the deer stealer in the play,

> " ———— struck a doe
> And borne it cleanly by the keeper's nose."

Indeed, he had been at the head of his profession; and during a reign of five years, assured me he had killed, on an average, not fewer than a hundred bucks a year. At length he was obliged to abscond; but compromising his affairs, he abjured the trade, and would speak of his former arts without reserve. He has more than once confessed the sins of his youth to me; from which an idea may be formed of the mystery of deer stealing in its highest mode of perfection. In his excursions in the forest, he carried with him a gun, which unscrewed into three parts, and which he could easily conceal in the lining of his coat. Thus armed, he would drink with the underkeepers without suspicion; and when he knew them engaged, would securely take his stand in some distant part, and mark his buck; when he had killed him, he would draw him aside into the bushes, and spend the remaining part of the day in a neighbouring tree, that he might be sure no spies were in the way: at night he secreted his plunder. He had boarded off a part of his cottage (forming a rough door into it, like the rest of the partition, stuck full of false nail-heads), with such artifice, that the keepers, on an information, have searched his house again and again, and have gone off satisfied with his innocence; though his secret larder perhaps, at that very time, contained a brace of bucks. He had always a quick market for his venison, for the country is as ready to purchase as these fellows are to procure it. It is a forest adage of ancient date, *Non est inquirendum unde venit venison.*"

1790. *The Norman method of deer hunting* appears to have been much the same as that of the Anglo-Saxons, except that the former went into the field mounted on horseback, which was an advantage unknown to the latter, whose chasings were performed on foot. It appears also, that the Normans long continued to hunt deer, armed with bows and arrows, spears and nets, as well as dogs. An old chronicle, quoted by Strutt, informs us, — "When the king shall think proper to hunt the hart in the parks or forests, either with bows or greyhounds, the master of the game, and the park keeper, or the forester, being made acquainted with his pleasure, shall see that every thing be provided necessary for the purpose. It is the duty of the sheriff of the county wherein the hunting was to be performed, to furnish fit stabling for the king's horses, and carts to take away the dead game. The hunters and officers under the forester, with their assistants, were commanded to erect a sufficient number of temporary buildings for the reception of the royal family and their train; and, if I understand my authority clearly, these buildings are directed to be covered with green boughs, to answer the double purpose of shading the company and the hounds from the heat of the sun, and to protect them from any inconveniency in case of foul weather. Early in the morning, upon the day appointed for the sport, the master of the game, with the officers deputed by him, ought to see that the greyhounds were properly placed, and the person nominated to blow the horn, whose office was to watch what kind of game was turned out, and by the manner of winding his horn, signify the same to the company, that they might be prepared for its reception upon its quitting cover. Proper persons were then to be appointed, at different parts of the inclosure, to keep the populace at due distance,—the yeomen of the king's bow, and the grooms of his tutored greyhounds, had in charge to secure the king's standing, and prevent any noise being made to disturb the game before the arrival of his majesty. When the royal family and the nobility were conducted to the places appointed for their reception, the master of the game, or his lieutenant, sounded three long *mootes* (or *blasts* with the horn) for the uncoupling of the hart hounds. The game was then driven from the cover, and turned by the huntsmen and the hounds, so as to pass by the stands belonging to the king and queen, and such of the nobility as were permitted to have a share in the pastime, who might shoot at them with their bows, or pursue them with the greyhounds at their pleasure. We are then informed that the game which the king, the queen, or the princes or princesses, slew with their own bows, or particularly commanded to be let run, was not liable to any claim by the huntsmen or their attendants; but of all the rest that were killed, they had certain parts assigned to them by the master of the game, according to ancient custom. (*Strutt's Sports and Pastimes.*)

1791. *The ceremonials attending the hunting of the stag in particular* were numerous, and it was a great breach of sporting propriety not to observe them very minutely. To illustrate our position, we will just instance such as were essential on the death of this animal from Gesner, an authority of repute. After directing, that when the hunted hart is at bay, the huntsman should steal on him covertly and softly, and either cut his throat or stab him with a sword, " The first ceremony is to cry *ware haunch*, that the hounds may not break in to the deer; which being done, the next is the cutting his throat, and blooding the youngest hounds, that they may the better love a deer, and learn to leap at his throat: then the *mort* having been blown, and all the company come in, the best person who hath not taken *say* before, is to take up the knife that the keeper or huntsman is to lay across the belly of the deer, some holding by the fore-legs, and the keeper or huntsman drawing down the fore-skin, the person who takes *say*, is to draw the edge of the knife leisurely along the middle of the belly, beginning near the brisket, and drawing a little upon it, enough in the length and depth to discover how fat the deer is; then he that is to break up the deer, first slits the skin from the cutting of the throat downwards, making the *arber*, that so the ordure may not break forth, and then he paunches him, rewarding the hounds with it. In the next place, he is to present the same person who took *say* with a drawn hanger, to cut off the head of the deer; which being done, and the hounds rewarded, the concluding ceremony is, if it be a stag, to draw a triple mort, and if a buck, a double one; and then all who have horns blow a recheat in concert, and immediately a general whoop."

SECT. I. *The Natural History of the Deer Family.*

1792. *Three varieties of the genus Cervus are professed objects of the chase,*— the stag (*fig.* 265. p. 520.), the fallow deer, and the roe; each of which have long been followed with great ardour, according to the tastes of different sportsmen, and their means of gratifying them: the roe is, however, becoming scarce.

1793. *The geographical distribution of the deer family is extensive*, being common in Europe, Asia, America, and some parts of Africa. All the members of this group are ruminants. Another general character also attributed to them is, that their horns are deciduous throughout; but which characteristic is now doubted, as there is reason to suppose some American and Indian deer do not shed theirs, at least they certainly do not do so annually. Nature seems to be as fond of sporting as her human children are: thus she seldom presents a distinctive character to a group, without leaving herself a loophole in favour of some variety. It it thus with the reindeer, which presents the only instance of a female deer being furnished with horns: indeed, shedding of the original, and the reproduction of deciduous horns, offer to our notice some of the most striking phenomena in zoology, under which impression we present the following account by Mr. Griffith: — " The reproduction of the deciduous horns in deer is more inexplicable than that species of vegetative spontaneous production, of which the germ is invisible, and which, nevertheless, is subordinate to fixed and precise laws. At a given age the horns of the deer kind begin to develop; at first a slight protuberance appears covered by the skin, where a great number of vessels are spread, for a considerable degree of heat is perceptible under it. Soon the protuberance rises, and in some species branches off into ramifications; after a certain period, the development is arrested, the skin, which had continued to stretch and extend over the whole production, loses its heat, dies, becomes dry, and finishes by tearing off in rags; at length the horn itself becomes detached and falls; a slight hemorrhage follows from the skin or the part of the frontal that sustains it. After twenty-four hours in healthy deer, the vessels which emitted the blood are closed, a thin pellicle covers the wound, and immediately the reproduction of a new horn becomes apparent, the extremity of the vessel swells, a burr expands around the base where the late horn stood, resembling those on the bark of trees, when they have received wounds which begin to cicatrise: the burr widens, while the vessels which proceed from the bone depose osseous matter. Hitherto the development of the horn has been uniform, the vessels have extended in a certain direction, always the same in each species; but when they have arrived at a certain point, they separate, some continuing as before, while others turn into new, but always in variable directions, if no accident impedes them. These last, which have formed an antler or snag, soon stop, but the former continue increasing the beam, throwing off from time to time others again to form branches, till at length this species of bony vegetation ceases also; the skin or velvet which covers them dries again, and the horn falls to be replaced by another." (*Animal Kingdom*, vol. iv. p. 68.)

The Scotch foresters likewise observe, that when a hart is cut while a fawn, that he remains hornless; and if cut when five or six years of age, his horns then become non-deciduous but permanent. There is every reason likewise to suppose that the Highland deer were of much greater proportions in early times than at present, — horns of immense magnitude having been formerly, and are still, found in the peat bogs of the Highlands.

1794. *The form of the horns of deer is admirably adapted to the wants and necessities of each variety*, and such departure from the common model assures us they were not intended as weapons only, but are subservient, in many instances, to other necessary purposes. In some, hook-like processes are formed, by which they can reach branches of trees, and bring them within reach of their browsings; others, inhabiting the colder regions, as the reindeer, &c. have palmated horns, with which they can shovel away the snow that buries the moss, and other vegetable matter they feed upon. We may further add, that in accordance with these manifestations of design, the feet also of those found in high northern latitudes are broad, or, as a sportsman would say, splayed. But we check our own anxiety to multiply proofs on this interesting subject, and proceed to individualise such members of the deer genus as are known to particularly interest the British sportsman.

Subsect. 1. *The Stag, or Red Deer.*

1795. *The stag* (*Cervus Elephas*) is also known as the hart and the red deer. Our cut (*fig.* 265.) presents the stag and hind. As a combination of beauty and grace, the stag is an object of general admiration. "He is of all beasts," says Gervase Markham, "the goodliest, stateliest, and most manly." Buffon also, after a most eloquent description of the stag, concludes, *Sa grandeur, sa légèreté, sa force, le distinguent assez des autres habitans des bois: et comme il est le plus noble d'entre eux, il ne sert aussi qu'aux plaisirs des plus nobles des hommes; il a, dans tous les temps, occupé le loisir des héros.* Which may be thus rendered, "His lofty mien, his elegance and power, are sufficient to distinguish him from all other inhabitants of the forest (see *fig.* 265.); and being himself the most noble amongst them, it is very natural that the chase of him should in all times have been a favourite sport of kings, nobles, and warriors." The height of the British stag is near four feet; in the Duke of Athol's grounds, it is said that some have been shot which weighed upwards of eighteen stone. (*Stat. Acc.* 20. p. 470.) This account is, however, much at variance with that of Mr. Scrope, whose veracity few will dispute. He distinctly states that the late Duke of Athol killed a hart which weighed thirty stone, six pounds imperial, as he stood. In 1836 we are also told, that one was killed at Woburn, of thirty-four stone weight as he stood. The late Glengarry also killed one which, after the gralloch or offal was taken, weighed twenty-six stone. The colours of red deer, as an extended group, are sufficiently well known to naturalists; but for precision, we observe the adult male and female in the summer have the back, flanks, and outside of the thighs, fulvous brown, a blackish line running along the spine, marked on each side with a row of pale fulvous spots. In winter these parts change to a uniform grey brown; the buttocks and tail, however, remaining a pale buff, but separated from the brown by a blackish line; the head, sides of the neck, under parts of the body and legs, are grey brown, and a broad band of brown passes down the face. The whole of the tintings, it must be observed, become darker with age, particularly it is so in the males: and it must likewise be taken into account, that this description is only pledged to be correct as regards the general group of European stags; for it would fail in characterising the distinctive tint which has occasioned the British stag to be known as the red deer, from those bred with us being, with few exceptions, essentially rufous in colour; but even with us the depth of the tint will vary considerably.

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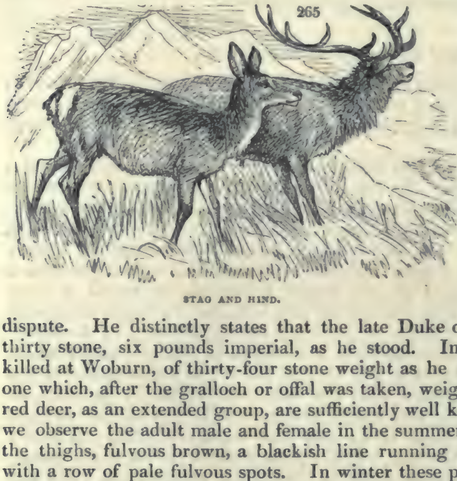

STAG AND HIND.

1796. *The stag is distinguished from the hind by his horns*, and also by the long bristly hair under his throat and neck, and by the canine teeth or tusks in his upper jaw. The young one of the red deer, whether male or female, is a *calf*. The male is a *brocket* until three years of age; at four, a *staggart;* at five, a warrantable *stag;* and afterwards, in royal chases, is known as a *hart royal.* Where much attention to technical phraseology is observed, the stag's *brow*, *bay*, and *tray antlers*, are called his *rights*. His *crockets* are the upright points of his horns; his *beam* is the main horn, and the rough circular base forms the *pearls.* Locality however, has some influence on this phraseology. The bossets or protuberances which mark the growth of the horns in the calves, appear after the age of six months, and first extend themselves into two cylindrical knobs, which are covered by a hairy cuticle; in the second year the horns themselves appear, but usually straight and single only. The third year, these rudimental horns throw out two antlers; the fourth, three; the fifth, four; and before the sixth year is expired, there are six or seven antlers on each side. It must, however, be remarked, that neither the number nor the form of the antlers is definite; on the contrary, the ramifications of the crown are much varied as well as multiplied. In the museum of Hesse Cassel, a horn is seen with twenty-eight antlers. Baron Cuvier also notices one that had sixty-two, and another with sixty-three antlers. In the *Lytell Geste* of Robin Hood we read —

> " Yonder I see a ryght fayer hart
> *   *   *   *
> His tynde are so sharp, mayster,
> Of *sixty*, and well mo ——."

1797. " *The annual mewing or shedding of the horns of the stag takes place*," says Bewick, " the latter end of February, or the beginning of March." With all our respect for Bewick, which is great, we incline to think that April is the most usual month for the shedding of the horns of the older deer, and that those of the younger follow in succession. Indeed we are told, that, in very youthful stags, the shedding is often protracted until August. Mr. Scrope likewise tells us, that " They carry their horns as long as the hind carries her fawn, which is eight months. Both horns do not necessarily fall at the same time: a day or two, or even more, occasionally intervene. Soon after the old horn has fallen off, a soft tumour begins to appear, which is quickly covered with a down-like leaden-coloured velvet. This tumour is seen every day to increase, like the graft of a tree; and rising by degrees, shoots out the antlers on each side. The skin remains to cover it for some time, and it continues to be furnished with blood-vessels, which supply the growing horns with nourishment. and occasion the furrows observable in them, when that covering is stripped off. The impression is deeper at the bottom where the vessels are larger, and diminishes towards the point where they are smooth. When the horns are at their full growth, they acquire strength and solidity; and the velvet covering, or skin, with its blood-vessels, dries up, and begins to fall off; which the animal endeavours to hasten, by rubbing them against the trees; and, in this manner, the *whole head* gradually acquires its complete hardness, expansion, and beauty." The rutting season of the red deer is much influenced by the temperature of the locality inhabited. Aristotle tells us, that in Greece it commenced early in August, and ended usually with September. In the colder climate of the Grampians, on the contrary, the rutting does not commence until late in September, when the throats of the males begin to swell, and they become irritable, restless in the extreme, and wallow in the bogs to cool their heats. They also roar out incessantly, and fight each other with savage fury, it being the endeavour of each hart to attract to himself as many hinds as he can for his harem, which he watches with extreme jealousy, and is incessantly engaged in active warfare to keep off intruders on his rights, and, as classically and elegantly expressed by Mr. Scrope, " their conflicts continue a considerable time, and nothing can be more entertaining than to witness, as I have done, the varied success and address of the combatants. It is a sort of wild '*joust*' in the presence of the dames, who, as of old, bestowed their favours on the most valiant." (*Art of Deer Stalking*, p. 13.) In this state both stag and hind are totally unfit for the table.

1798. " *The hinds go with young eight months and a few days*, and seldom produce more than one young, called a fawn. They bring forth in May, or the beginning of June, and conceal their young, with great care, in the most obscure retreats. They will even expose themselves to the fury of the hounds, and suffer all the terrors of the chase, in order to draw off the dogs from their hiding-place. They are also personally very bold in the protection of their offspring, and will defend it with great courage against all enemies. The calf never quits the dam during the whole summer; and in winter the stags and hinds of all ages keep together in herds, which are more or less numerous, according to the mildness or rigour of the season. They separate in the spring; the hinds retire to bring forth, while none but the young ones remain together."

1799. *Spiracula of deer.* It is to be regretted that we should have remained so long undetermined as to the real use of those linear openings or slits beneath the eyes of many, but not of all the members of the genus *Cervus*. This sinus leads to a cavity in the superior maxillary bone, is covered by the general integuments of the surrounding parts, and is furnished with an unctuous substance, secreted from sebaceous follicles. These cavities have been supposed to be spiracula or additional respiratory openings, by communicating with the nostrils; and the fact so generally insisted on, that those who have them are seen to indiscriminately apply either the nose or this suborbital sinus to whatever they wish to smell, would greatly strengthen the supposition. Their existence has been very long known, and their use as breathing spiracula has been broadly hinted at by Oppian the Greek poet, and has continued to be so considered by most subsequent naturalists. Mr.

Pennant, in reply to Mr. White of Selbourne, observes, — "I was much surprised to find in the antelope something analogous to what you mention as so remarkable in deer. This animal also, has a long slit beneath each eye, which can be opened and shut at pleasure. On holding an orange to one, the creature made as much use of these orifices as of his nostrils, applying them to the fruit, and seeming to smell it through them." The grand difficulty in the way of attributing such a use to them, is their not being invariably found in every species of the genus. That their existence is essential to respiration when the deer immerses its muzzle in the water, appears fanciful and unsupported by analogies. But it being asserted by anatomists that the sinus does, in some instances, communicate with the nasal cavity, will not allow us peremptorily to contradict such appropriation, so varied are nature's works. The French call these spiracles *larmiers*, or receptacles for tears, and the *larmes de cerf*, or tears of the hunted or stricken deer, form not an unfrequent poetic flight, or figure of speech. These suppository tears, however, are nothing more than an overflowing of the thinner parts of the sebaceous secretion. (See Sir Everard Home on this subject, *Comp. Anat.* viii. p. 245.)

1800. *The stag is not wholly incapable of domestication*, though he is tamed with more difficulty than the fallow deer. Several instances have occurred, of one voluntarily forming an attachment to the deer keeper, but so exquisite is their olfactory powers, that as soon as the season for killing venison commences, the connection is interrupted; we presume by the clothes of the keeper retaining the taint of blood. It is related of the Count of Stolberge in Germany, that he "had a deer, which he bestowed on the emperor Maximilian II., which would receive a rider on his back, and a bridle in his mouth, and would run a race with the fleetest horses that came in the field and outstrip them. Martial likewise mentions a deer used to the bridle, but we do not recollect that he bore the saddle also.

Subsect. 2. *The Fallow Deer.*

1801. *Fallow deer* (*Cervus Dama* Linn.). This species is not so universally distributed as red deer; in fact, few are to be found in France or Germany, but in Spain they are very large, and as common as in England (*fig.* 266.). According to Mr. Pennant, they are inhabitants of Greece, Palestine, and the northern parts of China. Closely as the fallow deer resembles the red deer in form and all essential points, no two animals can avoid each other with more intensity of purpose than these varieties of the *Cervus* family. Intermixture has, we believe, never been witnessed between them on any occasion, but, on the contrary, a marked aversion appears to keep these several species entirely distinct from each other. It is, however, not a little remarkable that this law, so imperative among deer, is not kept equally strict among other tribes, as horses, asses, dogs, foxes, &c. Without doubt the singularity is a wise ordination.

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FALLOW DEER.

1802. "*The principal difference*," says Bewick, "between the stag and the fallow deer, seems to be in their size and in the form of their horns; the latter is much smaller than the former, and its horns, instead of being round like those of the stag, are broad, palmated at the ends, and better garnished with antlers. The tail is much longer than that of the stag, and its hair is much brighter; in other respects they nearly resemble each other. The horns of the fallow deer are shed annually, like those of the stag; but they fall off later, and are renewed nearly at the same time. Their rutting season arrives fifteen days or three weeks after that of the stag. The males then bellow frequently, but with a low and interrupted voice. They are not so furious at this season as the stag, nor exhaust themselves by any uncommon ardour. They never leave their pasture in quest of the females, but generally fight with each other, till one buck becomes master of the field. They are capable of procreation in their second year; and, like the stag, are fond of variety. The female goes with young eight months; and produces one, sometimes two, and rarely three, at a time. They arrive at perfection at the age of three years, and live till about twenty."

1803. *Fallow deer are strictly gregarious*, but the associated herd is often divided by fierce contentions, and the weaker party is for some time driven to another, and commonly to an inferior part of the pasturage. Singly they are not only inoffensive but easily tamed, and then become confiding, interesting, and attached. We ourselves knew one at large that we frequently met in the high road, and with which we gradually became so well acquainted, that it was at last difficult to rid ourselves of his company. It is well known that at one of the racing stables a fallow deer lived with the horses, to which he became so much attached, that he regularly accompanied them in their exercises, and in their training gallops made as good "a run" as the best of them. They are much less delicate in the choice of their food than the red deer, and will live and thrive on vegetable matter of every kind, provided it be varied.

1804. *We have in England two varieties of the fallow deer*, which are said to be of foreign origin, — the beautiful spotted kind, supposed to have been brought from Bengal, and the deep brown sort, now common in this country. These last were introduced by King James the First out of Norway, where, having observed their hardiness in bearing the cold of that severe climate, he brought some of them into Scotland, and from thence transported them into his chases of Enfield and Epping. Since that time they have multiplied exceedingly in many parts of this kingdom, which is now become famous for venison of superior fatness and flavour, to that of any other country in the world.

Subsect. 3. *The Roebuck.*

1805. *The roe* (*Cervus Capreolus* Linn.), once common over the whole of our island (*fig.* 267.), is rarely to be met with in its wild state, save in the Highlands of Scotland; in America it is yet very common. "It is," says Bewick, "the smallest of all the deer kind, being only three feet four inches long, and somewhat more than two feet in height. The horns are from eight to nine inches long, upright, round, and divided into three branches; the body is covered with long hair; the lower part of each hair is ash colour; near the end is a narrow bar of black, and the point is yellow; the hairs on the face are black, tipped with ash colour; the ears are long, their insides of a pale yellow, and covered with long hair; the chest, belly, legs, and the inside of the thighs are of a yellowish white; the rump is of a pure white, and the tail very short. When about eight or nine months old, their horns begin to appear in the form of two knobs: the first year they are without antlers. They shed their horns the latter end of autumn, and renew them in the winter; in which they differ from the stag, whose horns fall off in the spring, and are renewed in summer."

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ROEBUCK.

1806. *On the qualities of the roe Buffon thus eloquently discourses:* — "As the stag is the noblest inhabitant of the wood, he occupies the deepest shades of the forest, and the most elevated ridges of those mountains which are covered with lofty trees. The roe, as if inferior in species, contents himself with a humbler residence, and generally dwells among the thick foliage of young brushwood. But if he is inferior to the stag in dignity, strength, and stature, he is endowed with more gracefulness, vivacity, and courage, and he is superior in gaiety, neatness, and sprightliness. His figure is more elegant and handsome, his eyes more brilliant and animated, his limbs more nimble, his movements quicker, and he bounds, seemingly without effort, with equal vigour and agility. His coat or hair is always clean, smooth, and glossy; he never wallows in the mire like the stag, and he delights in dry and elevated situations, where the air is purest. He is likewise more crafty; conceals himself with greater address, is more difficult to trace, and derives superior resources from instinct; for though he has the misfortune to leave behind him a stronger scent than the stag, which redoubles the ardour and appetite of the dogs, he knows how to withdraw himself from their pursuit, by the rapidity with which he begins his flight, and by his numerous doublings. He delays not his arts of defence till his strength fails him; but as soon as he finds that the first efforts of a rapid chase have been unsuccessful, he repeatedly returns on his former steps; and after confounding, by these opposite movements, the direction he has taken, and also by intermixing the present with the past emanations from his body, he rises from the earth by a great bound, and retiring to a side, he lies down flat on his belly, and in this immoveable situation, he allows the whole troop of his deceived enemies to pass very near him."

1807. *The roe, unlike his congeners, is not gregarious;* on the contrary, each family lives distinct: the sire, the dam, and the young ones associating together, and seldom mixing with others. Their rutting season continues but fifteen days,—from the middle or latter end of October until about the middle of November. During this period they will not suffer the fawns to remain with them; on the contrary, the buck obliges them to retire, in order, as it is said, that the future young may receive no molestation, but which we disbelieve: on the contrary, we consider him to be wholly actuated, like the red and fallow buck, by selfish motives. The female of the roebuck goes with young five months and a half, and brings forth about the end of April, or beginning of May; previous to which she also separates from the male, and conceals herself in the thickest and most retired part of the woods. She generally produces two fawns at a time, sometimes three; which however, we are told, do not confine her long, but in ten or twelve days are able to follow her with much apparent ease. When threatened with danger, she, it is said, hides them in a thicket; and to preserve them, offers herself to be chased, but notwithstanding her care, she is frequently robbed of them.

Numbers of fawns are found out and taken alive by the peasants; and many more are worried by dogs, foxes, and other carnivorous animals. By these continual depredations, this beautiful creature is daily becoming more scarce; and in many countries, where it once was common, the race is now wholly extinct.

1808. *The life of the roe seldom exceeds twelve or fifteen years.* In the choice of their food the individuals are very delicate, and their flesh yields a very fine and well tasted meat, particularly that of the females and young males. They are of too wild a nature to submit to domestication, but, on the contrary, are easily terrified; and in their attempts to escape, Bewick says, "They will run with such force against the walls of their inclosures, as sometimes to disable themselves. They are also subject to capricious fits of fierceness; and, on these occasions, will strike furiously with their horns and feet at the object of their dislike." Some years ago one of these animals, after being hunted out of Scotland, through Cumberland and various parts of the north of England, at last took refuge in the woody recesses bordering upon the banks of the Tyne, between Prudhoe Castle and Wylam. It was repeatedly seen and hunted, but no dogs were equal to its speed; it frequently crossed the river, and either by swiftness or artifice eluded all its pursuers. It happened, during the rigour of a severe winter, that being pursued it crossed the river upon the ice with some difficulty, and being much strained by its violent exertions, was taken alive. It was kept for some weeks in the house, and was then again turned out, but all its cunning and activity were gone. It seemed to have forgotten the places of its former retreat, and after running some time, it laid down in the midst of a brook, where it was killed by the dogs. Shame! shame, to its pursuers!

Sect. II. *Stag Hunting.*

1809. *The professed fox hunter is apt to look down with disdain on stag hunting;* or, as they call it, *calf hunting.* We cannot regard it thus; but as far as our own feelings still incline, and our own practice formerly led us, we also infinitely prefer the pad to the frontlet. Yet there are many genuine sportsmen who patronise stag hunting with all their influence, and follow it with enthusiasm; and such is more particularly the case, since the olden method of the *stop* is on the wane. We find even Nimrod, the *Magnus Apollo* of venation, thus expressing himself on a stag hunt at which he was present: — "Certainly the deer which afforded us this day's diversion went more in the style of a fox than any I had hitherto seen, having been only twice viewed during the long run." In stag hunting, be it remembered, there is often no want of riding even at the best pace, and for the distance passed over on many, we may say on most, occasions, it far exceeds fox hunting. It is true the carted stag used to his business is apt to follow the same track; he traverses the same fields, he visits the same lanes, and the water he so oft has laved, he finally *soils* in. This sameness, of course, is however sometimes broken in upon by chance, but more often by the circumstance, that in the regular stag hunts a change of deer is made when a fresh line of ground is presented to the followers. Neither can the most fastidious deny, that the devotee to the chase owes much to stag hunting, inasmuch as it can be followed when no other chase of consequence is to be got at. Modern stag hunting may be considered under two heads: 1st, The chase of the wild stag, as he was found until lately in some parts of England, particularly in Devonshire and Dorsetshire, and as he is still found in Scotland and Ireland; 2d, The chase of the home-bred stag, or the carted-stag as he is sometimes called, because in the regular stag hunts he is turned out of a cart on a certain spot.

Subsect. 1. *Hunting the Wild Stag.*

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UNHARBOURING THE WILD STAG.

1810. *The natural method of hunting the stag* is that of tracking him to his lair, from which he is unharboured by hounds trained to the purpose; but, unfortunately, the disafforesting of so many large woodland tracts throughout the country, has made the meeting with this animal in a state of nature a matter of some difficulty. When Exmoor and other extensive wilds in the county of Devon were brought into cultivation, almost the last stronghold of the wild stag of England was annihilated; for we reckon the royal forests as much artificial preserves as the purlieus of the keeper's lodge are for the pheasants, that his tinkling bell calls night and morning to be fed. Having marked a wild stag into a covert, if on walking round it the harbourer cannot *slot* him out of it, he concludes he must be there. But ere we proceed to the chase, we must further observe on the art displayed by harbourers, which is such as enables them, by the size and figure of the *slot* or treadings, and by certain appearances of the *fewment* or dung, to discover whether the deer be young or old, and even, as it is said, whether male or female. The season also attended to by them was to mark only what was called a *warrantable* deer (*i. e.* one at least five years old) or, in other words, one proper to be hunted.

1811. *A warrantable stag might be hunted between the 20th of August and the 31st of September;* but he must be one, as before observed, that *carries a head*, i. e. horns which mark a determinate age, according to the usage of the local chase. An old stag generally harbours, in moderate weather, where he is not deeply inclosed, but has some scope for observation. During the heats of summer, to avoid the flies, both hart and hind retreat into hollows or pits, or they *soil* in pools.

1812. *A warrantable hind is allowed to be hunted between the 10th of April and the 20th of May.* The autumn season of hind hunting commences when that of the stag terminates, and continues as long as the weather remains open and fine.

1813. *Tufting of deer.* As deer frequently herd in copses, woods, and brakes, it is usual to *tuft* (hunt) a covert with a couple or two of steady old hounds, called tufters, which in olden times were of the bloodhound or talbot breed. These well practised animals know a *rate*, and will *stop* if a wrong deer be found, as a hind with calf, &c. and will draw again for a more *warrantable* deer. The harbourers, or deer keepers, have however in many cases already been their rounds, and marking the *slot* (tread) have given previous information to the owner of the pack.

1814. *The hart or hind being unharboured*, and the hounds, which in most cases remain at some distance in couples, are now uncoupled, and being well laid on the slot, the gallant animal, be it male or female, usually makes head with the wind; but the extent of the run and the pace of the deer depend much on chance. The North Devon hounds were seldom disappointed of an excellent run when the unharboured stag made for the moor; and ten, twelve, and fifteen mile runs, were not uncommon. The natural instinct of the stag induces him, in most cases, to *take soil*, i. e. to enter the water, when his limbs fail him. Formerly, when red deer were plentiful in Devonshire, every run almost concluded with a death; but the scarcity rendered this impolitic of late years, and then it became more common to *stop* the hounds. When the stag is to die, those who are well up with the dogs dismount as soon as possible, and cut his throat, allowing the hounds to lap his blood. His head is then cut off, and his entrails being given to the pack, his carcass is taken away.

1815. "*The death of the stag with these hounds*," Mr. Apperley tells us, "is marked with some few ceremonies, though the more formal one of *taking say*, or presenting the hanger, blowing the double or treble *mort*, and the whole *recheat* in concert, are now dispensed with. With the North Devon staghounds, however, all those who were never present at a death before are entered to blood; which is done by some one dipping his finger in the blood of the deer, and making a dot on the ear of each. The master of the hounds gives 1*l.* to the occupier of the land on which the deer was roused; 1*l.* to the harbourer, by whose information he is found; the same to the horsemen of a certain description, who are first up; and the same also to the footmen. Half a guinea is given to the men who take him out of the water if killed in his soil, and the same to the men who convey his carcass home; making together the sum of 5*l.*" We would refer the reader for further detail from the same pen on this interesting subject to the June and October Numbers, for 1824, of the *Sporting Magazine*. Devonshire is probably the last county in England where the stag was to be met with in his wild state. Unconfined by any limits, he ranged a true wild beast, where, roving at large, he could select his most favourite food, and where the search for it added vigour to his frame. He traversed large tracts uncontrolled, making the wild scenery of Exmoor his stronghold. What was known as the Devonshire hunt, we are told by W. Scrope, Esq. F. L. S. was in existence much more than a century ago; and that Wriothesly, second Duke of Bedford, is the first master to whom it can be traced: he died at Tavistock in 1711.

1816. *The North Devon staghounds were of very ancient standing*, and are distinctly traceable as far back as the days of Elizabeth. An ancestor of the Rolle family is known to have been in possession of them, and after him Lord Orford also hunted them under a grant from Sir Thomas Acland, who became likewise subsequently their master for sixty years. In later days Lord Fortescue held them much to the satisfaction of the country; but the extension of the disafforesting system, together with the increase of population, and a deterioration in the moral character of that population, which became more and more unfavourable to the preservation of all game, but more particularly to deer, begat impediments to the further continuance of this pack, which its most zealous friends could not contend with. Subsequently, Sir Arthur Chichester kept a staghound pack in that neighbourhood; but it was confined, we believe, to hunting the park or paddocked deer. A pack of staghounds was also kept in South Devon, but the nature of the country is not equally favourable to the full development of the animal hunted. The Devon and Somerset staghounds is the pack of the present day (1857).

1817. *Wild stag hunting* is likewise yet pursued with a few of its ancient features in some parts of Ireland, particularly on the borders of the lakes of Killarney; and a scene of this description is detailed in the *Sports of Ireland*, p. 119. It was not uncommon to meet with herds of red deer in the western parts of this country also, half a century ago; but the French descent in 1798 occasioned a distribution of arms to be made among the peasantry, who, when the danger was passed, retained them, and in consequence turned them against the deer, which were followed unceasingly, until at length the race became almost extinct. The Highlands of Scotland also are furnished with wild red deer, but they are there sufficiently protected, particularly those on the Duke of Athol's estates. The nature of the country, however, here precludes any pursuit with men, horses, and hounds, collectively; but stalking of them, as it is called, is a favourite and noble sport, to which our attention will soon be directed.

SUBSECT. 2. *Hunting the Park-bred or carted Stag.*

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THE STAG HUNT MEET, AND UNCARTING THE STAG.

1818. *The artificial method of stag hunting*, if we may be allowed so to call it, is the only one practised in England in the present day; for we reckon as nothing the accidental run after an out-lying stag. Modern stag hunting properly, or rather popularly, so called, consists in breeding red deer in parks, where they are furnished with the most nutritious food, to give them condition for swiftness and endurance. That venerable sportsman, George the Third, fostered his staghounds, after the fashion of his day, with great care, and was a very frequent attendant on the turn out (see *fig.* 269.), where his affability won many, as his curious inquisitiveness with regard to every stranger, amused many more. As regards ourselves we could not easily forget our first visit paid to the uncarting of the deer before the good old sporting King George the Third, nor the pleasure the sight seemed to afford him. The *turn-out* on these occasions formed altogether a very imposing spectacle; the scarlet and gold jackets of the huntsmen and assistants (called yeomen prickers), together with a crowd of expectant sportsmen, made a goodly show.

1819. *The deer-cart next arrived with its contents*, after which the *master of the royal hounds* was seen in his hunting costume, light blue frock, black velvet collar and cuffs, and his golden couples as the insignia of his office, awaiting the arrival of his majesty, who next appeared attended by the master of the horse and the equerries in waiting. George the Third, who, as is well known, was always remarkable for his punctuality to all his engagements, was usually on the ground at ten o'clock, when the sight became animating in the extreme, from the numbers of splendid equipages, impatient horses, and equally impatient riders around.

1820. *The stag being uncarted* (*fig.* 269.) an interval of time, technically called law, of from five to ten minutes was given, before the hounds, who had been hitherto some distance in the rear, were brought up. This interval was filled up by the flourishes of the horns carried by the yeomen prickers; and as the hounds advanced, their impatience was poured forth in deep-toned chorus. We have at this moment, in more than one instance, heard the veteran fox-hunter exclaim, " Well, this is fine !" and cold indeed must be the heart that could not be warmed into enthusiasm by such a sight.

1821. *The progress of the uncarted deer*, destined for the day's sport, was not always uniform on these occasions. Sometimes he made the best of his way straight over the country, after having looked a little about him; at other times he lingered, as though loth to leave, but fearing to stay. He was on such occasions compelled to start by two yeomen prickers, who, galloping after him for a while, urged him on. By thus accompanying him, they also became aware of the direction he took, and by this early start they were, in the hunting days of George the Third, also ready to assist in *stopping* the hounds when necessary, to give his majesty time to come up. Such delay was likewise favourable to the stag, as it enabled him to get what is called second wind; for it must be evident that the comparatively still life of the park or paddock-fed stag will not keep him in wind like the true wild stag, whose ramblings are extensive in search of food and variety. The stopping of the dogs was formerly effected by throwing down a pole before them, but afterwards they were so well disciplined, that they merely required to be headed. This practice made his majesty's staghounds very popular, as it enabled the slow riders and female equestrians to see the sport almost as well as the hard riders. Mr. Johnson, in his very respectable work, the *Sportsman's Dictionary*, informs us, that " In the Easter week of 1796 the sport of the three days was excellent. The concourse of people present on the Monday, on turning out the deer on Ascot Heath, was great almost beyond all comparison, and the run proved destructive to several of the horses (most likely from injudicious riding). Almost as soon as the deer had been liberated, the hounds suddenly broke away, and continued the chase in such unusual style, that in the first burst of ten miles the slow-going gentry formed a tail line of full four miles; upon reaching London Blackwater, on the great western road, the deer turned to the right, through Sandhurst and Finchampstead, till nearly reaching Wokingham town end, and suddenly turning to the left, he continued his course in the most gallant manner through the parishes of Barkham, Arbonfield, over Farley Hill, Swallowfield, Mortimer, through the river Kennet, and to Aldermaston, near Newbury, where he was taken after a run, it was supposed, of nearly fifty miles. On the following Thursday a deer, called Sir Henry Gotte, was turned out (having been presented to his majesty by a Buckinghamshire knight of that name), and went off in the most gallant style imaginable. Ten minutes' law was allowed him; and as the scent was uncommonly good, the hounds ran breast high, and could only be stopped once during the first hour and a half. The deer ran over nearly the same ground as the stag which had been turned out on Monday, till he reached Wokingham, the gardens of which town he passed through, and made way over Froghall Green, through the parishes of Binfield, Warfield, the Hazes, and Shotsbrook coverts, Braywick, and was taken at Holyport, after a chase of four hours, as fine running as possible. On Saturday in the same week, a stag, the brother to Sir Henry Gotte, was turned out near the race-course at eleven o'clock, and facing the open country, went away in a style that seemed to bid defiance to his pursuers. After a circle of some few miles upon the heath and by Sunninghill Park, he passed Sunninghill Wells, Brummel Hut, and through Patnell's Warren, where he turned to the left, and reached the bridge at Virginia Water; here he waited till the hounds came nearly up to him, when, surveying the approach of the field for a few seconds, he broke away, and took the whole of the swampy country, and over the large fences to Thorpe Green; leaving Chertsey to the right, he passed through the meadows and crossed the Thames, continuing his course over the fields to Staines. Here he amused the inhabitants in their gardens and orchards, where he and the hounds were repeatedly together, and his escape from destruction appeared almost impossible; but by clearing some most surprising leaps he once more broke away, crossed the western turnpike road, and again led the chase in a very gallant style. Crossing the intervening inclosures to Wyradsbury, and nearly reaching Colnbrook, he made way to the right, and was taken near the seat of Sir W. Gibbons, at Stanwell, after a fine run of two hours and a half." (*Loc. cit.* p. 350.)

1822. *The royal staghounds are comparatively seldom blooded*, which is an additional argument against the prevailing one of the necessity of the blood of the pursued to keep up energy in the pursuer, which is so much insisted on by Mr. Beckford and others with regard to foxhounds. The royal stag usually takes to soil, *i. e.* enters the water, where some of the party follow him and secure him with ropes, as seen in *fig.* 270.; and even when he is run into, the yeoman prickers are soon up and save him: by which management some stags have lived through many seasons. His majesty, George the Fourth, although he was not himself a frequent attendant on his staghounds, yet kept them up in full, if not in increased, splendour; and the gallant pack royal gave great satisfaction. If we mistake not, it was Lord Maryborough who in a great measure abolished the practice of *stopping* the hounds, by which the stag hunt was brought to assimilate more with the character of fox hunting, and with the general taste for "going the pace." A correspondent to the *Sporting Magazine* of April, 1826, gives the runs which took place between the 31st of January and the 23d of February of that year, as follows: —

Feb. 1. at Thorpe - - - - - -	ran 40 minutes.
3. at Slough - - - - - -	— 1 hour.
6. at Salthill - - - - - -	— 1 hour.
8. at Iver Heath - - - - -	— 1 hour, 20 minutes.
10. at Magpies - - - - -	— 1 hour, 40 minutes
13. at Two-mile Brook - - - - - -	— 1 hour.
15. at Farnham - - - - - -	— 45 minutes.
17. at Magpies - - - - - -	— 1 hour.
20. at Slough, and lost the deer, which was run and killed next day.	
22. at Longford - - - - -	— 1 hour, 10 minutes.

1823. *The late Earl of Derby's staghounds* were long celebrated, nor were the deer they hunted less so, having been most of them bred at Knowsley in Lancashire, which spot appears particularly favourable to breeding these animals in perfection; and to keep them from again degenerating, they were occasionally crossed with the Yorkshire breed of Earl Fitzwilliam. As the deer were removed from Knowsley, they were placed in two paddocks of an acre each: one was appropriated to the old stags, and had usually six brace; and the other received the same number of young stags: here they were fed with hay and oats, in addition to their browsing. This pack was usually made up of thirty-five couple of old hounds, and from eight to ten couple of young hounds; all stanch, fleet, and enduring, and all perfectly broke to the *stop*.

1824. *The take of the stag.* Let the stag meet his death in what manner he may by hunting, it is called not the *death*, as of the fox or hare, but *the take*, which singularity originated, we suppose, in the circumstance that the value of a stag is such that his death is studiously avoided, although his caption is sought for. Sensible of his advantage over the dogs, by being surrounded with water, he generally seeks that refuge which is called *taking soil.* Here he usually stands at bay, and the dogs being whipped off by the attendant huntsmen, he is carefully secured by ropes, and then carted away. Our illustrative cut (*fig* 270.) represents the attendants thus securing him in the water, while the hounds are baying around him, but are awed from any attack on him by the thongs of the huntsmen's whips. As the stag will, however, sometimes soil where either the water is too deep, or is rendered difficult of approach, it has been suggested (and certainly the suggestion is not a bad one), the entangling him by means of the lasso: and if every huntsman to staghounds were made a proficient in the art of throwing the lasso, it would be well, particularly where the stag retains his full attire.

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TAKE OF THE STAG.

1825. *Staghounds are often kept in other localities* which approximate to the metropolis; but since the establishment of railways we think they might be advantageously removed to greater distances, where less damage would be done. We would even advocate the transfer of the Royal hounds to the New Forest, with occasional visits to Windsor, instead of making that neighbourhood the general area of operations. The mastership changes with every change of administration, but the highly-respected huntsman Mr. Davis remains constant, where we wish him health long to continue. He has outlived many much younger men who cluster around him in Grant's celebrated picture of the hounds on Ascot Heath.

Subsect. 3. *Hunting of Fallow Deer.*

1826. *Hunting of a fallow deer*, whether it be a male or female, in common parlance is called *buck hunting*, as we say stag hunting, whether it be a stag or a hind we pursue. Fallow deer have long been hunted in England, as we learn from many sources. One old writer informs us that our progenitors were so delighted with this hunting, that, to use his own words, "the parkes are grown infinite in number, and are thought to contain more fallow deer than in all the christian world beside." The practice of buck hunting in days of yore is thus well described by Blome: — "The great skill required in hunting the buck is to keep the hounds from hunting counter, or change, in regard of the plenty of fallow deer which are usually in the same ground; nor is there required that skill in lodging a buck as in harbouring a stag; neither need you draw so much after a buck, but you may judge by the view, and observe what grove or coppice he enters, for he will not wander up and down as the hart, nor change his layer so oft, neither use so many crossings, doublings, shifts, and devices, nor doth he flee so far before the hounds, and avoideth the highways and open plains as much as he can. He is not so crafty and strong to beat a river, or to stay so long at soil; neither are they so free to take a great river, but being close hunted, they flee into such strong coverts as they are accustomed unto; and it hath been observed that some bucks that have leaped over a park pale, after a ring or two, have returned of themselves, choosing rather to die where they are acquainted than in a strange place."

1827. *Buck hunting in the reign of James the Second*, according to Mr. Chafing, was practised after dinner. It should be stated it was summer hunting, and as the usual dinner hour in those times was not later than two o'clock, the meeting was fixed at four in the afternoon. This gentleman observes, on this late hour for the sport, that "The deer were at that time upon their legs, consequently were easily found, and being empty, were more able to run. As the evening advanced and the dew fell, the scent gradually improved, and the cool air enabled the horses and the hounds to recover their wind, and to go through their work without injury. The evening, however, as a time for hunting of deer, can be extended to buck hunting only; for although the stag hunt be a summer diversion also, the chase is generally much too long to be ventured on, unless the sportsmen have the whole day before them. Buck hunting it appears, however, was so fashionable, and so generally delighted in at that period, that even the judges on the circuit were accustomed to partake in this sport." (*Scott's Field Sports*, p. 435.)

1828. *Fallow deer are hunted by staghounds, by foxhounds, or by harriers.* There are, however, regular buckhounds; such as we have seen resembled dwarf staghounds, and were bony, without too much weight, and deep toned. Regular packs of buckhounds are supplied with deer from a park, from which they (the deer) are, however, first removed to a well inclosed paddock or other open place, where they are fed on hay, oats, and beans, which brings them into fine wind and condition. When a hunt is to take place, one is carted, and being taken to the place of meeting is turned out, and certain "law" being given, the dogs are laid on, and in many cases a most excellent run is experienced. In Sussex, near Alfriston, we were once present, when an out-lying buck, of which some previous information had been received, was dislodged from a small thicket by the harriers of T. Harben, Esq.; bounding off at the top of his speed, the gallant animal afforded us an excellent burst of more than half an hour's continuance, with only one slight check, when he took soil. He was, after some delay, *dissoiled* without injury, and being liberated, he started off, and afforded another burst of nearly equal duration, and was at length run into on the open.

1829. *Buckhounds are met with but rarely now in England.* They are, however, more common in Scotland. In Ireland (we believe) they are found in several parts; and the banks of Killarney's celebrated lake frequently resound to the tones as well of the buckhounds as of the staghounds. The following advertisement in *Bell's Life in London*, January 18. 1835, now lying before us, is a proof that buck hunting was then in vogue there: — "The buckhounds, well known as the only pure strain now in Ireland, will be disposed of. The kennel consists of fifteen and a half couple of splendid young hounds, mostly about twenty-eight inches high, hunted on deer and hare — fast, sure, and easily stopped." We make no doubt but that they were excellent; but we must say, "God help the poor hare that went before such *pigmy* harriers!" A leash of greyhounds would be thought murderously unfair; but here is a whole pack of dogs, little inferior to greyhounds, coursing and mobbing one poor hare to death. We would have this pack fronted with *fair play* as a motto. Mr. Beckford, when he became too old for fox hunting, solaced himself with buck hunting; to indulge in which, we are told, "that in the latter part of his life he rented one of the walks in Cranborne Chase, and there kept a regular pack of buckhounds, which were so steady, that although they found a deer every two or three minutes, they would stop at a single crack of the whip, or on even being rated to. These buckhounds were hunted by Will Fox, who was Mr. Beckford's first whipper-in at the time he kept foxhounds. So sagacious were the keeper's buckhounds in Cranborne Chase, that a writer in the *Sporting Magazine*, for August, 1824, informs us, "They actually shoot rabbits to them, during the winter, in the great chase; and also, that if hallooed on to a fox, they would run in to him, without looking at a deer." We give this as we receive it; but our faith in judicious discipline is such, that we make no doubt that dogs of any kind may be brought to do this and even more.

SUBSECT. 4. *Deer Stalking.*

1830. *Deer Stalking* is a method of hunting, or of stalking after deer, practised in such wild and precipitous countries as render the pursuit of them with horses and dogs impracticable. We would premise that there must be some peculiar charm in this sport, similar to that of hunting the chamois, as it requires patience, perseverance, and exertion in the sportsman, and is at times attended with similar risk from the general nature of the localities where the game is found. It is true the dangers incurred in deer stalking are not so appalling as in chamois hunting, but the fatigue, the watchings, and the disappointments attending it, are of no ordinary magnitude; but, on the contrary, are such as, without a very strong attachment and predilection thereto, must fail to keep the love of it alive from youth to old age, as is often seen. But so are we constituted that the interest inspired by a pursuit is usually commensurate with the difficulty experienced in attaining the object of our endeavours. Enterprising natures prefer to more easy undertakings the toil of opposing stratagem to stratagem; thus they seek the conquest of the most wary and acute, and often the most formidable, animals in the deepest sylvan recesses and most rugged wilds. Only in this way can we account for the strong hold which deer stalking has on the passions of those by whom it is followed. A practitioner in the pursuit observes on it, that whenever any person has had an opportunity of enjoying it in perfection, "it has almost invariably been found to give him a distaste for his previously most cherished amusements." The late Duke of Athol was an instance of this devotion to deer stalking, to the exclusion of most other sports; and it is said that the present duke is little less enthusiastic in its favour. The former pursued it almost to the day of his death, and was considered one of the first deer stalkers in the kingdom. The celebrated deer Ripley (*fig.* 271.) of whom we give a sketch from a picture by the celebrated animal painter Mr. R. B. Davis, brother to Mr. C. Davis, huntsman to her Majesty, will long be remembered by those who have had a taste of his speed and lasting qualities across country, and many hunters have also felt the effects of each during and after a run with him, so severely

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THE DEER RIPLEY.

"Had the bold burst their mettle tried."

1831. *The localities of deer stalking* are principally confined to the Highlands of Scotland, consequently they embrace some of the most interesting scenery imaginable; and if its mountains do not rise to the height of the Andes or the Alps, they yet strike the traveller with a more pleasurable sensation than that of awe, by exciting his admiration. We need not inform the intelligent reader that the Highlands of Scotland are nominally divided into the west and the north. The former owns the shires of Dumbarton, Argyle, Bute, and part of Perth; the latter comprehends the counties of Inverness, Ross, Sutherland, &c. &c. In early times the red deer and the roe particularly abounded. Since then, increased population, and the attention paid to local agriculture, have reclaimed much of the ground, and appropriated it to the culture of cattle, particularly to rearing of sheep. There however still remain the Highland forests, which, being the property of persons of rank and wealth, are yet preserved for the accommodation of wild game, but particularly of red deer. Our limits barely permit us to glance at the largest of these tracts; but we would refer the inquisitive reader to a source where all his curiosity may be gratified, and from whence he may derive a full insight into what may be called the *Art and Mystery of Deer Stalking*, which, although a sport of the most inciting kind amongst the Highlanders, has been to us Southroons little known but by name. The descriptive work we allude to is of a comparatively late date, having been published in the year 1839, under the title of *The Art of Deer Stalking*, by William Scrope, Esq., F. L. S. We cannot but consider it as somewhat singular that among the different writers on sports, this masculine species of venation has been hitherto but little noticed, except by occasional episodical sketches of the literary inquirer or the curious wanderer. This vast hiatus is, however, now happily filled up by one who has practised the sport at large, and has described all its enterprising features with the pen of a master. It is common to call all the vast tracts which form the natural range of the red deer, by the name of forest: but the reader, we would apprise, must not consider these as a continuous tract of vast woods; on the contrary, many of these so-called forests are entirely destitute of wood, except occasionally scattered patches of brushwood. We would, however, apprise him, that ancient chronicles assure us, that many of them in by-gone days were thickly wooded, although their other features were those of rocky heights, of vast extent and wildness, abruptly terminating in morasses, which frequently ended on the bank of some expansive loch.

1832. *The forest of Athol* will first engage our attention, and very properly, as it is one of the largest forests set apart for red deer, including a tract, as it is said, of a hundred thousand English acres, extending, according to Mr. Scrope, from the north-east point joining Aberdeenshire to the south-west point joining Gaig Forest, about forty miles in length; and, according to land mensuration, it embraces 135,451 imperial acres. The noble owner has also benefited this vast tract by the extent of his tree planting, which, according to Dr. M'Culloch, amounts to thirty millions in number. Mr. Scrope, to whom we are so much indebted for information on the subject in hand, informs us that the portion of the forest which is set apart for stalking deer, is bounded Westward by Craig Urrard and the river Bruar, northward by the Tarff, eastward by a most thickly stocked grouse country, while the cultivated and picturesque grounds and woods are alone sufficient to invite the traveller's notice. It is, however, only of late years that the breeding of red deer has been encouraged here to any extent, sheep and cattle being heretofore the principal objects of cultivation. It may be supposed that this portion of Scotland does not present so many masculine features as some other parts of the country; but although Perth, exhibiting as it does broad plains, gentle elevations, and cultivated valleys, further embellished with the tortuosities of two great rivers, would seem to bespeak more amenity than grandeur, yet there is not wanting in its vicinage features partaking of the sublime in a very considerable degree, as witness the Falls of Bruar.

1833. *The Sutherland forests* are principally formed of the vast tracts of Derrie Chat and Derrie More. On these localities the bens or mountainous ridges rise in Alpine grandeur to a vast height, that of Klibreck being three thousand two hundred feet high. The sides of these bens appear to terminate in the lochs of Naver, Veallach, and Corr. Ben Ormin forest, also in the same locality, was in olden time celebrated for the quantity of deer it harboured. These several wild districts, the Earls of Sutherland occupied exclusively as their own hunting grounds, which extended over a tract of fifty miles in length, and from ten to thirty in breadth. It appears that it was in this locality that one of the last of the British wolves was killed; for a most interesting account of the circumstances attending which, we refer to Mr. Scrope's work.

1834. *The forest of Marr*, though much less extensive than some others, is averaged at fifteen miles in length and nine in breadth; but here, instead of the deer being destroyed to make room for the culture of sheep, the spirited owner, the Earl of Fife, deserves particular notice from our pen, not only for attention to the preservation of deer, but also for his spirited attempts to naturalise other animals to this locality. He introduced capercalies from Norway, which increased to twelve; but we are told that the care which fostered them ceasing when the forest was let, the birds either died or were destroyed. The wild boar he also introduced, but the want of acorns, it is supposed, was so felt by the swine, that they likewise, one after the other, died. We would, however, suggest, that were young ones only turned out and at first artificially fed, the plasticity of the constitution might yield to circumstances, and the breed be kept up; particularly they might take to ants and their eggs, as a resource at one season. Chamois, this spirited nobleman would also have undertaken to naturalise, but that his late majesty begged those he imported of the earl for Windsor Park, where they were accommodated with a wooden tower, built to represent Alpine heights, up and down which these nimble gentry were used to frolic most joyously; but having, as it is supposed, eaten some deleterious herbs, they all died.

1835. *The extensive deer haunts in Rosshire,* the property of Lord Lovat, which reach from Beaufort Castle westwards towards Invernesshire, abound with these animals; and the noble proprietor being, as we are told, a zealous and excellent stalker, will tend to give perpetuity as well to the deer as to the sport of stalking, which modern improvements appear to threaten the extinction of. The wild country of Strath Conan, extending through the vast tracts of Sutherland, are all more or less inhabited by red deer; but the country west of this, known as Applecross and Gauloch, which, although unfortunately almost inaccessible to human tread, yet abounds with deer. In this locality is the magnificent Loch Maree, near which Mr. Scrope notices an extraordinary shot of the Honourable Edward Lascelles, who killed a stag on the trot at three hundred and twelve yards' distance; and further, that it was the first shot he had made at deer.

1836. *The deer forests of the Duke of Richmond* form a most extensive tract, extending more than seventy miles. The earls of Huntley, from time immemorial, possessed a vast range, reaching from Ben Avon in Banffshire to Ben Nevis, near Fort William. That portion of this immense tract known as Glenfeshie, Gaick, Drumauchtar, Glenmore, Glenavon, Glenbinly, which stretches over one hundred thousand acres, is principally devoted to pasturage. Glenfiddich and Gaick, we are told, are the only ones strictly preserved for deer at the present time.

1837. *The forest of Corrichbah,* in the district of Glenorchy, in Argyleshire, will finish our sketch of the deer stalking localities. We have to observe of this forest that it has also submitted to the changes of other and larger forests, by having been diverted from its claims to be a nursery of deer to the rearing of sheep. But we learn that the noble sporting owner, the present Marquis of Breadalbane, in the year 1820, again converted it into a deer forest, and that thirty-five thousand acres are appropriated to the raising of red deer. Having thus travelled through much of the Highland deer stalking localities, we find ourselves not very far from the grounds we set off from. Scenes of great grandeur have been passed over, spots of terrific wildness, and separated from each other by rugged and impassable defiles, have intervened; yet the traveller who has health, strength, and nerve, to visit and examine every one of them, will have no cause to repent his labour. He has seen nature in her gayest attire, and he has accompanied her when in her sternest moods. Supposing him a general lover of sporting, he must have revelled in the trouting of the Scotch rivers and lakes; we will even consider him as one of the party in the boat seen on Loch Lomond (*fig.* 272.) that boast of the Scotch, and the admiration of every beholder. We will also suppose that he is making captives of either salmon or trout if he be a fly-fisher, or of pike if he be a troller, or that he is taking perch, which abound here. In the tributary streams to this, the finest sheet among British waters, he will meet with moderate sized trout in abundance; and on his return, himself and party may refresh themselves at the Auldtarnan Inn on the Falloch water, at the head of the Loch, or if more convenient, at Luss, on the lower extremity.

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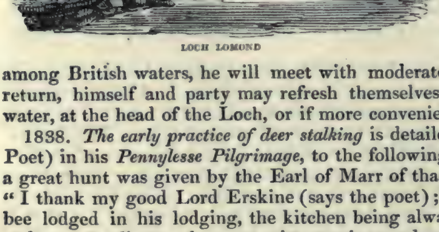

LOCH LOMOND

1838. *The early practice of deer stalking* is detailed by Taylor (better known as the Water Poet) in his *Pennylesse Pilgrimage,* to the following effect. It seems that in the year 1618 a great hunt was given by the Earl of Marr of that time, on which Taylor thus dilates: — "I thank my good Lord Erskine (says the poet); hee commanded that I should alwayes bee lodged in his lodging, the kitchen being alwayes on the side of a banke, many kettles and pots boyling, and many spits turning and winding with great variety of cheere, as venison, baked, sodden, rost, and stu'de; beef, mutton, goates, kid, hares, fish, salmon, pigeon, hens, capons, chickens, partridge, moorcoots, heathcocks, caperkillies, and termagents; good ale, sacke, white and claret, tent (or Allegant), and most potent *aquæ vitæ.* All these, and more than these, we had continually in superfluous abundance, caught by faulconers, fowlers, fishers, and brought by my lord's (Marr) tenants and purveyers to vitual our campe, which consisted of fourteen or fifteen hundred men and horses. The manner of the hunting is this: five or six hundred men doe rise early in the morning, and they doe disperse themselves divers wayes, and seven, eight, or ten miles compass they doe bring or chase in the deer in many heards (two, three, or four hundred in a heard) to such or such a place as the noblemen shall appoint them; then when the day is come, the lords and gentlemen of their companies doe ride or go to the said places, sometimes wading up to the middles through bournes and rivers; and then they being come to the place, doe lye down on the ground till those foresaid scouts, which are called the tinckell, doe bring down the deer: but as the proverb says of a bad cooke, so these tinckell men doe lick their own fingers; for besides their bows and arrows, which they carry with them, wee can heare now and then a harquebuse or musket goe off, which they doe seldom discharge in vaine; then after we had stayed three houres, or thereabouts, we might perceive the deer appeare on the hills round about us (their heads making a shew like a wood), which being followed close by the tinckell, are chased down into the valley where wee lay; then all the valley on each side being waylaid with a hundred couple of strong Irish greyhounds, they are let loose as occasion serves upon the heard of deere, that with dogs, gunnes, arrowes, durks, and daggers, in the space of two houres, fourscore fat deere were slaine, which after are disposed of some one way, and some another, twenty or thirty miles; and more than enough left for us to make merrey withal at our rendevouse. Being come to our lodgings there was such baking, boyling, rosting, and stewing, as if cook Ruffian had been there to have scalded the devill in his feathers." On this amusing but remarkable account, we cannot help observing, that if it indeed be a veritable picture of the sport we are treating of, we would beg to alter its designation from early *deer stalking* to wholesale *deer slaying*. We also consider that, as a matter of record, it should be placed in juxta position with a *German* or *French battue*.

1839. *The present practice of deer stalking* will next occupy our attention; but so varied are the stratagems of the stalkers to get within reach of these wary animals, and so diversified are the practices of the deer to circumvent the intentions of their pursuers, that it would require not only the abilities and experience of Mr. Scrope to do justice to the subject, but much more room also than our limits afford. We will, however, attempt a general outline, which the reader can fill up, in the most ample manner, by a reference to his descriptive pages.

1840. *The extreme wariness of the red deer* is such, that it requires the utmost circumspection to advance towards them. When they are approached, it must be always done upwind, to prevent the animal effluvia from the sportsman being received by the quick scenting powers of the deer. A circuit of some miles even must occasionally be traversed, to enable the hunters to approach them undetected; and, after having arrived at the given point, it is sometimes even then found necessary to gain another more completely hidden from the wary sentinel of the herd, one being always especially on the look-out, to guard the whole against surprise. It is necessary therefore that the *stalking party*, in these cases, should lie down, until the herd have moved into another situation. It is particularly favourable to the chances of sport, when the state of the weather is such as to force the herd to the well-heads and pools, particularly to such as furnish brushwood sufficient to cover the marksman. In the advance to the grounds on which it is likely to find them, telescopes are usually employed to command as distant and as accurate a view as possible: it is however remarkable, how readily the old deer stalker will, from long habit, espy with the naked eye what even the unpractised looker fails to discover with the glass. Rifles of the best kind are used in this sport; and it is no less indispensable that the dogs employed should be well bred, and fully trained to the work. Two or three couple are required, and they must be of the true strong Grampian deer-dog breed (*fig.* 273.), differing but little from the Irish or Scotch greyhound. In the mountainous districts of the north of Scotland, it frequently happens that the deer resort to the very summits. To approach them, therefore, the most fatiguing journeyings are necessary, and actual precipices must be mounted to come within sight of them. Should it then be further determined to reach within shot of them unperceived, the party must frequently carefully crawl on all-fours over the ground, or insinuate themselves like snakes through the brush-wood, to effect their purpose. No sound must be heard, the stillness of death must reign around, for the work of death is at hand. Approaching thus cautiously, and having been especially careful to get downwind of the deer, the sportsmen being presumed to be now within shot, which may be considered to be the case when only a hundred, or even a hundred and twenty yards intervene, each singling out that one of the herd which is the nearest and fairest mark for himself, he fires and instantly reloads, unless each has either double or reserved

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DEER-DOGS.

rifles. When the approach has been very cautiously conducted, the herd will often remain so surprised that several are shot before they make off.

1841. *When the deer are not thus pursued to the summit of these Alpine mountains*, it is usual to send the attendant foresters round, who cautiously advance, while the gunners remain in the open paths of the deer; or otherwise hide themselves in the different passes, towards which they endeavour to force the deer, who retreat down wind as soon as the tainted gale from the foresters reaches them. In this passage the gunners, hidden from view, mark them as they pass, and each takes his single or double shot.

1842. *The aim is usually taken behind the shoulder*, and, if effective, the deer drops lifeless; but when otherwise wounded, the stricken beast generally leaves the herd. The forester now unslips his dogs, lays them on the slot, or on the track of the wounded deer, he being forced from the company of the others. Such is the excellent training of the deer-dogs, that if this expulsion has not already taken place, they will do it themselves, and will follow no other deer but the wounded one. Having either overtaken their prey, or brought him to bay, they detain him until the sportsman comes up and shoots him through the head, or the forester arrives, and bears him away, the hounds being rewarded with the blood. If the deer has taken soil, which he will do if he can, it is recommended to keep him down the stream, as less likely to break his bay; for should he do this, he will probably attack the first person near him with fatal violence.

1843. *The present practice of deer stalking* has been so well described by Mr. Cooper in his excellent novel called the *Smugglers*, as to have drawn an acknowledgment, not only from almost every one who has noticed the subject, but from Mr. Scrope also; and as it stands a faithful picture of a stalking scene (*fig.* 274.), at which Mr. Cooper was himself present (as *Tresham*, we suppose), we, in our own opinion, cannot do better than offer it as it lies before us: — "There is no describing," says this ingenious writer, "the irresistible fascination of this pursuit to the true-bred Highlander. Day after day will he traverse the haunts of these noble animals, or sit with inexhaustible patience, wrapped in his plaid, behind a greystone, upon some well known commanding height, watching for a sight of them; or creep for miles together on his belly, like a worm, to approach them undiscovered. The lapse of time and the severity of the weather are alike unheeded; he only thinks of how to circumvent his wary prey. If successful, he is richly repaid; if he fails, it is but to renew the tedious and toilsome quest, until his perseverance is at length rewarded." He now proceeds to detail the operations of the persons he accompanied to deer stalking: — "Cautiously creeping up the little hillock until their eyes could just peer above the topmost heather, Glenvallich and the forester, throwing themselves upon their faces, scrutinised with their glasses the brown expanse before them; nor was it until more than a quarter of an hour had elapsed in the inquiry, that they arose from their recumbent position. 'Nothing is stirring, or in sight, as far as we can make out,' said Glenvallich; 'let us move forward. Remember, Tresham, we shoot at nothing but stags. The hinds, with calves at their foot, are not in condition; and the *yell* hinds, as they are called — those, that is, which have either had no calves or have lost them, your eye is not practised enough to distinguish from the others. You may see plenty of roe deer too, here, for the wood is full of them;

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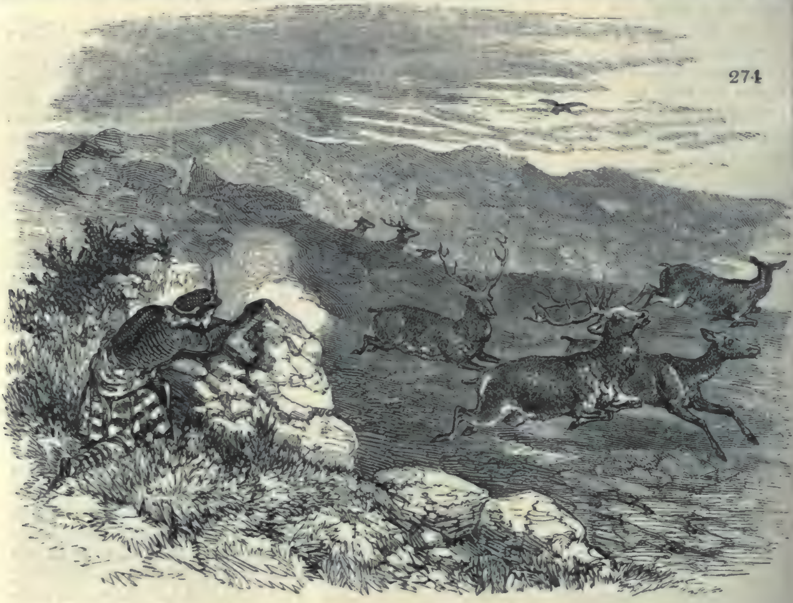

DEER STALKING.

but don't shoot at them, for you might disturb and lose a stag worth fifty roes, who might be lying within a few yards of us.' Instead of abruptly ascending further, they now slanted along the face of the hill till they reached the watercourse — a deep gash, worn by a rapid and perennial torrent quite through the soil into the living rock of the mountain side. The rugged banks were covered with dense thickets of the trees common to such situations, which overhung the stream, or interrupted its course with their fallen and withered boughs; the torrent itself dark, foaming, and impetuous, leading from rock to rock and ledge to ledge, in many a petty fall, and sometimes in cascades of considerable height and grandeur. The pass led by a pool between two of these falls; a deeply-furrowed ledge of rock afforded stepping stones, when the stream was low, by which an active man might spring across. Having overleaped this obstacle, they soon emerged from the wood upon the more open hill, where the heather, although still long and thick, was less tangled than in the forest, and the more solid and less broken ground afforded firmer footing. The change was very comfortable to Tresham, who now soon recovered his failing wind, and felt his sinews recover a firmer tone — and they cautiously approached the crest of the height, to which they had won their way with so much toil. Glenvallich, now stealing forwards, began with curious and jealous eye to scan through his glass the broad hollow, which rose gradually above them. After continuing this survey for some minutes in silence, he beckoned Tresham to his side,—'Antlers, by Jove!' said he, in a half whisper; 'I have them, and in no bad place neither; this will be our game, or I am mistaken. See — take the glass, look to the left of that white stump below the rock there, close to a small single white stone; there he lies, I can see him with the naked eye.' — 'And I can't catch him even with the glass,' replied Tresham, after peering through the telescope; 'I see nothing, Charles.' — 'What, don't you see that brown spot? you can't have found the place. By Heavens! there's more of them; give me the glass, — yes, faith, there are one, two, three hinds feeding; and their calves, too — see, look again.' But it was in vain that Tresham's unpractised eye wandered over the brown waste, until, as by chance, the field of the telescope traversed the place, a slight movement in what he had taken for a withered branch of some decayed tree caught his eye." After a little consultation as to the best mode of getting at the deer, the author proceeds: — "One or two roes passed the sportsmen, and several blackcock, the sight of which tempted Tresham sorely to exercise his skill at a flying shot; but if there were any deer in the wood, they took other passes than those watched by the two gentlemen. The forester now came up, and Glenvallich informed him of the stag and hinds he had seen. The methods of best approaching them unobserved were eagerly discussed; and having decided that it was at all events advisable to reconnoitre them from a shoulder of the hill above them, the party set their faces boldly to the brae, and began to breast it straight up. And now once more was Tresham made sensible of his own deficiency, and of the superior vigour of his companions: pride and 'pluck,' however, bore him on, though his knees bent under him, and his head swam, with the sustained exertion. The signal to halt and reconnoitre was at the moment as gratifying an intimation as he could have received. Five hinds with their calves, and two stags, were now distinctly visible, full eight hundred feet beneath them, as they stood, or rather lay, perched upon the brink of a giddy precipice which rose above the hollow. 'Well, Maccombich, what's next to be done? must we climb the hill and go round the scour?' — 'Ay, 'deed, that ye most,' responded the forester. 'See,' continued he, throwing some light particles of grass into the air, 'the wun's a' up the hill, and there's no a burn or corry that'll hide us. It's doon yon burn, below Craigcaillichdhu, we must go, and tak' the hollow a' the way to thon bit hillock, and then we'll at them easy: they winna stir the day, any how — we're sure o' that.' As Duncan made these observations, he was cautiously retreating from the brink of the rock, from whence he had been observing the deer, when all at once his person became fixed in an attitude of eager attention, which might have supplied the sculptor with an admirable study; and straining his eyes towards the upper extent of the corry, he exclaimed, in an earnest whisper, 'O Glenvallich! we're in luck the day! there he is! there's the very staig your honour was after the last time ye cam' up; him that ye touched on the side, an' we could na get sight o' again. I've seen him twice since you, and a grand one he is. O Trochconuilorst! but we'll have you the day, or the mischief's in 't; we must go clean round the scour noo, any how, for we'll hae to come down the Glaig-na-gawr on him.' This information set the party into instant motion. Off they started in high spirits, leaving Kenneth to watch the deer below them, lest any accident should startle them, or lest they should feed away from the spot. The ascent proved most arduous, for they had to pass round the peak of one of the loftiest mountains in Scotland, at a height scarcely 200 feet below the summit. Tresham was once more forced to abandon his rifle to his gillie, and still he found himself lagging behind; for Maccombich, stimulated by a sight of the animals he loved, forgot the inability of others, and glided up the hill with the swiftness and surefootedness of a goat. Even Glenvallich at length found it expedient to call upon him to slacken his speed; and Tresham, breathless and reeling, was absolutely forced to make frequent halts. Youth and spirits, and good English bottom themselves, failed at length, and the young man came to a stand still. 'You were right,' said he, 'about this cursed jacket; it is too heavy for such work — by the Lord, man! a fellow to climb this mountain should go in a cuerpo: the kilt's your only — to the devil with the velveteen!' and he threw it from him, remaining in his shirt sleeves and waistcoat, — 'Stay, stay, Harry! those white arms will never do; they would give alarm at two miles' distance; here, here's the jacket you despised in the morning.' — 'Thank you, — this is a relief; and now have at it once more.' The highest point was reached at length, and a descent, little better than a precipice, lay before them. But though Tresham, in cooler moments, might have shuddered at the danger he ran, his mind was at this time too highly excited to scruple at following his daring companions, who bounded downwards at a rate which soon carried them to the bottom. 'Now for it, Harry; now for it in earnest,' said Glenvallich, after a moment's halt to recover breath. 'Double quick, while we may — we shall soon have to go slow enough;' and entering the body of a shallow watercourse, they descended its rough bed at a rapid pace. The waft of a hand from Duncan who led, stopped the party; and crouching low, they changed their quick step for a stealthy pace, with which they rounded a height, and under its shelter remained, until their exact position, with regard to the object of their quest, should be ascertained. 'Look here,' whispered Glenvallich, taking Tresham by the arm, after having made a short examination himself; 'what think you of Duncan for a pilot?' Raising his eyes to a level with the heather top, Tresham could see, at the distance of not more than three hundred yards, the horns of a noble stag just arising between two hags. No other part of the animal was visible; but the moving of the antlers, which slowly turned from side to side, proved sufficiently that he maintained a vigilant look-out after his own safety. 'We'll match him yet, I think,' said Glenvallich. Retreating a few yards, to get further under cover of the rising ground, Maccombich, followed by the rest of the party, crept on all fours from the watercourse, across thirty or forty yards of long heath-covered muir, until they reached a maize of peat-bog cracks of little depth, but sufficient to cover a man creeping flat upon his belly. This, although the moss was moist and muddy, they were forced to submit to, as the only way of crossing unseen by their intended victim, and in this manner they gained about a hundred and fifty yards more upon the deer's position. The forester alone was now sent on to ascertain the means of further progress; and after an absence of more than ten minutes, which to the sportsmen seemed a full hour, he returned creeping like a worm, and beckoning the party to follow in the same manner. This they did; and at length, keeping along the peat cracks, got a chasm deep enough to afford sufficient cover for the whole body. 'He's no a hunder' yards from you this moment, Glenvallich,' whispered the forester, in scarcely audible accents, 'and the wind is strong from him. Ye most climb this knoll; if you can get him within eighty yards, dinna seek to get nearer, for he's in a wide green bench, and he's very jealous. I dinna think ye'll mak' muckle better o' it, but achone! sir, tak' time and be canny — I wudna for ten pounds he got awa!' — 'Never fear me, man; but here's Mr. Tresham must take the first chance — I'll fire only if he misses. Come along, Harry.' The forester cast a look of mingled disappointment and remonstrance at his master, but it was disregarded. Tresham also, who still shook from head to foot with recent exertion and present excitement, would have excused himself from interfering with the anterior rights of his friend in this particular animal; but Glenvallich would not listen to him. 'Have done with this debating,' said he, 'we shall lose the deer — follow me, Tresham.' Cautiously, like a cat stealing on its prey, foot by foot and inch by inch, did Glenvallich, grovelling in the heather, advance towards the crest of the knoll in front of him; when the deer's antlers moved he was still, — when they took their natural position he moved forwards. Tresham followed in his track, stopping or advancing as he did, until they had reached some twenty paces onwards from the ravine. Glenvallich then signed to him to raise his head with caution. He did so, and saw, with a sensation of eager delight which increased his agitation to a painful pitch, the noble stag lying among some rushy grass, apparently in the most unsuspicious tranquillity, occasionally scratching a part of his hide with a fork of his antlers, and driving away the insects which appeared grievously to torment him. 'Take him as he lies, Harry; aim low, at the shoulder,' whispered Glenvallich. The heart of Tresham beat more audibly than ever it had done on going into action, as he carefully extended and levelled his rifle. Whether it was the slight click of cocking, or some movement made in the heather as he stretched out the piece to take aim, is uncertain; but the stag started, and made a movement as if about to rise, just at the moment when Tresham was pressing the trigger. The circumstance probably unsettled his aim, for the rifle exploded, but the ball flew over its intended object. But not thus was the unfortunate animal to escape; for scarce had the report of Tresham's shot made him start from his lair, when the rifle of Glenvallich gave forth its fatal contents, and the stag, making one high bound from the earth, tumbled headlong forwards, and lay struggling in the agonies of death. He had anticipated the possibility of his friend's failure, and prepared to remedy it — which he did effectually, for the ball had struck the animal just behind the shoulder, and went clean through its heart. 'Hurrah! capital! grand! by Jove he has got it,' shouted Tresham, starting up; but the arm of Glenvallich pulled him down again. — 'Hush! be quiet,' whispered he; 'never do so — there may be twenty more deer near us of which we yet know nothing — such a halloo would send them all off. Load your piece — load quickly.' While they were performing this necessary operation, Maccombich, who had joined them, and was keeping watch around them, touched his arm, and pointing with one hand, showed him three fine stags moving off to the further hill, alarmed no doubt by the reports of the rifles, and probably by the exclamation of Tresham. 'God bless me!' said the mortified young man, 'this is a lesson I shall not forget; but who could have imagined it?' A little further scrutiny by the practised eye of Maccombich, was sufficient to convince the party that there was no more game in view; so the hunters advanced to break the deer, as it is called, by cutting the throat, and disembowelling it; and while Maccombich was performing this sportsmanlike duty, it was amusing to watch the rapture to which, when unrestrained by habitual caution, he now gave full way on the glad occasion of a successful shot. Apostrophising it in Gaelic, he addressed to it every reproachful epithet he could think of, as a villain which had so often baffled their murderous efforts: it was a scoundrel, and a rascal, and a devil, to whom he wished a bad end, and whose soul, heart, and liver he gave to the devil: then changing his tone, he lavished upon it every expression of endearment in which his language is so fruitful; but which, when translated, often sounds strangely enough to English ears. It was his dear, his darling, his bonny beast, his cattle, his love. He seemed to abandon himself to the very intoxication of delight; and it was singular to see a man, habitually grave and reserved, acting as if for the time he had actually been deprived of reason."

1844. *Shooting deer also takes place in chases or royalties*, and we offer the following memoranda from our note book, of the method of shooting them in the chases of England, as those of Enfield and Cranbourne in former times, as well as in most parks where a herd of deer was kept up. Boxes, we are told, were erected, having seats within side, and loopholes for the rifle, so managed, that whilst they completely screened the keepers from the notice of the deer, were sufficiently commodious to enable the keepers, or other sportsmen, to turn in their hiding-place to any direction from which it might be necessary to attempt a sight. Rests were likewise frequently nailed, for the same purpose, to the trunks of the larger trees; and in many instances there might be observed artificial aids to the mounting into the trees also, as it was frequently necessary to do, to escape observation, and particularly to be out of the scent of the animal, as well as when it was absolutely requisite that the marksman should fire from considerable elevations. On most of these occasions a dog or two of the bloodhound stamp accompanied the keeper, and was nearly as dexterous at concealment as the master, and as active in securing the prey; for should the particular deer singled out not drop at the discharge of the rifle, but on the contrary go away wounded, the chase with the bloodhound immediately commenced. Nor could any efforts of the pursued animal elude the staunchness — no speed baffle the indefatigable perseverance of the pursuer. Relying nothing upon sight, but trusting only to scent, he would equally retain his object even were the stricken deer allowed to mix with the herd, but which was little likely, for the herd would instantly fly from him, or otherwise hunt him from among them, — such are their instinctive powers also. Steady, however, to one purpose, the dog or dogs will not be led away by any other game; a hare has never been known to have been chopped by one, though numbers are rising before him. True to the original scent, with or without blood being on the ground, he adheres to the one only; for an effluvia, imperceptible to us, issues from the wound, even when fat, or other obstructions, impede its bleeding. Were the hunter therefore unaided by his dog, much fine venison would be lost to his own or his master's larder from the entire escape of the deer, or from its dying amidst the intricacies and thickly covered spots of brushwood, and becoming, in all probability, the prize of animals of prey. The well trained deerhound is so steady, that he will not take the least notice of the deer until the shot has been made, when he commences his determined pursuit, beginning it with a deep resounding and powerful note, which he continues, thereby indicating the direction the wounded beast has taken, and enabling the pursuing party to be in at the death. Such was the practice some sixty or seventy years ago, but it is now much modified, the deer killed at the present time being usually of the fallow kind, and which are shot off as wanted without ceremony.

SUBSECT. 5. *Hunting the Roebuck.*

1845. *The roebuck* (*Cervus Capreolus*), formerly a wild and common inhabitant of some of the forest woods and chases of England, is not now found here. One killed in Northumberland, seventy or eighty years ago, appears to have been the last of the true wild roebuck of England. It is however to be observed, that a breed has been kept up in partial confinement in Dorsetshire, and we believe in a few other localities occasionally. At present the *wild* roebuck is almost entirely confined to Scotland, where it is yet to be met with in tolerable plenty. We are, however, told in *Scott's Field Sports*, "that the Earl of Dorchester, in 1800, turned into his woods, near Milton Abbey, Dorset, four or five brace of roebucks, some of which he procured from the menagerie of Brooks of London at a considerable expense, and some were presented to him by the Earl of Egremont. Mr. Pleydell of Whatcombe, a neighbour, assisted Lord Dorchester in preserving his stock of game, and had since entered on a new variety of chase, that of hunting them with harriers, of which, from its novelty to most sportsmen of the present day, it may be proper to extract a few of the leading particulars. The country round Milton is wild, with a large proportion of woodland and valley, surrounded by high and steep hills, generally covered with copse wood or plantations. The woods are large and full of hares; and deer hunting being in course new to Mr. Pleydell's harriers, he encountered some difficulty in making them steady to that scent, which however is very sweet, and nearly agreeing with that of the hare. But the hounds being once blooded with the roebuck, little further mistake succeeded." So elegant and graceful are all the actions of this diminutive deer, that we can hardly reconcile it to our feelings to seek its destruction. It may be truly said to be elegant in form and action; and in the defence of its young it is most determined, and is seldom worsted by a foe of superior size, for its strength is, in conflicts on such terms, equal to those of much larger animals. It is said to be also as wily as it is determined, so as to come scathless out of most of the frays it enters in defence of its offspring. Like the hare it practises, as it is said, the artifice of leaving its scent incapable of being held on, by stopping short, and making one immense bound, throwing itself out of the power of the hounds to receive the streaming scent, which the rapid motion had occasioned; for having made this bound it lies closely concealed within the thickest herbage, and such as is favourable to absorbing the emanations. Like the hare it also retraces its own steps, and thus often baffles the hounds; indeed, many of its stratagems resemble those of the hare.

1846. *In hunting the roebuck of Dorset* we are informed from the same source, that "The covers are drawn in the same manner as for the fox. When first *raised*, the buck runs short, heading the hounds but at a small distance; the cry, in consequence, is most cheerful and animating, every hound enjoying the hot scent, and eager in the pursuit. From this mode of running, the roebuck often appears exhausted and in immediate danger of being taken; far from which, after suffering itself to be approached by the pack, and even to be found in the midst of the hounds, it has been known to leave the wood, and to hold them a chase of more than two hours before it could be taken. The roebuck is in no danger of being chopped by the dogs, as both the hare and fox sometimes are, the strength and agility of the former always enabling him to escape. Nor can they be taken unless completely knocked up, when even the oldest bucks never stand at bay, but passively surrender themselves, instinctively conscious, perhaps, of the want of those powerful weapons of the stag, the brow antlers, and their total incapacity of defence. In this hunt the hounds are frequently liable to more fatigue than the horses, for the deer running much in cover, and the scent being extremely sweet, the dogs through the whole pursuit are at their full speed, and after a long day show, on their return to the kennel, the effects of their eager exertion. The roebuck is much stronger, and runs longer than the fallow deer, and differs from all other deer, in the respect that he is little inclined to take soil. Only two have as yet made their way to the river Stour, although apparently such a near and convenient resource, and those two were killed soon after they had reached the river. In the last and present season, the same authority informs us, Mr. Pleydell's hounds have been out in pursuit of the roebuck forty-four times, found a deer every day except two, and killed twenty-six; and notwithstanding these deer do not, in general, go any great distance from the wood, some of the chases have been to the extent of seven or eight miles in length, and more than three hours in duration. They possess their full strength in the winter as well as the summer season, are extremely nimble and take immense leaps, and although fleet, are not sufficiently so to escape from greyhounds in an open country; nor, as we should apprehend, are any other kinds of deer. The roe generally producing two, sometimes three, fawns at a birth, Lord Dorchester's woods are not only well stocked, but many deer have also migrated into those of neighbouring proprietors, and indeed have now become almost common in that part of the county of Dorset." Mr. Pleydell's roebuck pack consisted of eighteen couple of dwarf fox-hounds, intermixed with a few moderate sized harriers; and it is said that, in one season only, they killed fourteen brace of these deer.

1847. *Roe shooting in the Highlands of Scotland is a most animating sport.* In some of the mountainous and woody parts of this romantic country, these elegant and diminutive deer are yet found in tolerable plenty. Small hounds, of the harrier breed, are usually employed in hunting them. The sportsmen, however, instead of following the dogs (which would be almost impossible, as the site of the sport is on ground any thing but easy to be quickly got over), plant themselves, each with his rifle, in such spots as the deer are likely to be driven towards by the dogs. As the roe usually flies before the dogs in a circle, which it contracts on each evolution, the shooters should not quit their stations; for if the roe-dogs are well trained, they will assuredly bring the game within reach of the stalkers. Some of the hardy sons of the north, spite of the nature of the ground, actually follow their dogs, and, in a sort of trot, will bound over rocks, rills of water, and dash through the tangling of the brushwood, with the gun uplifted in the air to prevent accident, and, after this fashion, they in the end generally fall in with their prey. In rocky and precipitous localities, it is better for the sportsmen to place themselves on eminences, or in fissures, as seen in *fig.* 275. By this method the dogs, who well understand their business, will assuredly bring the roe deer round within the reach of the rifle shooters placed on high. Roe deer usually run with the wind, and will sometimes also take the soil or water. Colonel Thornton, the ***veracious*** narrator of many a *tough story*, relates a droll one, which we have some reason to believe was true. During his sporting tour to the Highlands of Scotland, failing in his wish to show a roebuck to one of his companions, he substituted a ridiculous resemblance, which he says answered the purpose equally well, after the following manner: — "I had ordered a goat, as nearly the colour of a roebuck as possible, to be procured the night before from the mountains, where they then were, directing the falconers to place and tether him in the most inaccessible, obscure, and wild situation imaginable, which was done accordingly. The conversation during supper we had intentionally turned upon stags, roebucks, &c., till Mr. W.'s imagination became so heated, that no doubt he dreamt in the night of nothing else. . . . We sat down to breakfast, when, as privately agreed on, we received intelligence that the herdsman had seen, early that morning, a roe and a roebuck among the rocks. The company were all eager to pursue them. After great care, seldom speaking, and never but in whispers, and making signs on passing by some very likely places, the falconer pretended he heard a rustling, upon which, as they had been directed, the party fell flat upon the ground, cautiously crawling on; when Mr. W. seeing an animal, and concluding it to be the game he so ardently sought for, judiciously and precipitately fired. From the struggle made by the animal occasioned by the report, with which he was unacquainted, Mr. W. imagining he had desperately wounded him, flew to seize him, but was repulsed by some strong and well-directed efforts of the goat's horns; this obliged him to call out loudly for the assistance of Otter, who being slipped rushed forward, but in his hurry did not discover the animal he was to attack, which was now almost covered and entangled in some strong junipers; but he soon came about, and being properly fixed, he and Mr. W. seized on their antagonist with great avidity, who soon ought to have convinced them by his language that the roebuck in question was unfortunately only a shaven goat." (P. 77.) The roe is met with in considerable numbers in Glen Tilt; and in the forest around, families of them are very common, but large herds are seldom, if ever, seen. Mr. Scrope describes a curious but interesting habit of the roe in tutoring their young to feats of activity, by practising them in pursuing each other round a birch tree, apparently appropriated to the express purpose, by the oval ring made in the ground on this spot, and on no other.

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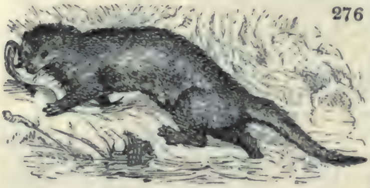
ROE SHOOTING.

SECT. III. *Otter Hunting.*

1848. *This sport is pursued with much ardour by some persons,* not simply to lessen the otter race that the fish may multiply, but entirely for the pleasure that the sport itself yields, which is proved by the fact, that genuine otter hunting is most practised where fishing is least encouraged. It is, we presume, needless to observe, that this sport is usually pursued on foot; a tame looker-on might be mounted, and such have been seen by the river side.

SUBSECT. 1. *The Natural History of the Otter.*

1849. *The otter* (*Mustela Lutra* Linn.), is characterised by Cuvier as having three false molars above and below, a strong talon on the upper carnivorous tooth, a tubercle in the internal side of the lower, and a large tuberculous tooth, almost as long as broad, above. The otter is distinguished from the *Mustela* (marten) tribe by its compressed head and rough tongue, but principally by its palmated feet and tail flattened horizontally (*fig.* 276.). Its distribution is extensive, as it is found throughout all Europe, all the colder parts of Asia and America; in Canada, particularly, it arrives at a great size. The otter is not so famed as the beaver as an architect, but we must remember that much which is related of the beaver's residence is fabulous. The otter is much more ferocious than the beaver, and more ravenous also.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OTTER.

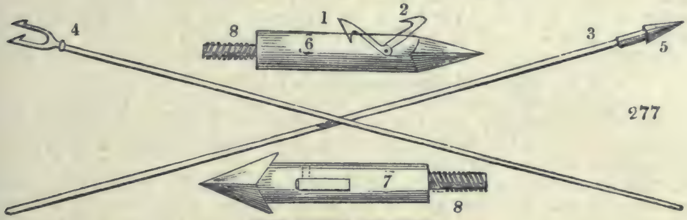
1850. *The British otter* of full growth is about two feet in length, from the nose to the tail, which is of itself fifteen or sixteen inches long and tapers to a point. In colour it is a deep brown, with a light patch on each side of the nose, and one also under the chin. The throat and breast are ash coloured, the head is flat and broad, the mouth small, and the ears short and rounded. The eyes, which are diminutive and placed near the nose, have a somewhat vertical aspect. Its neck is thick; the legs are thick, short, and very mobile in their articulations, so as to enable them to act with all the ease and effect of fins in the water, in which they have great power, as well by the mobility of their joints as by the strength and muscularity of their members, and also by the close webbing of the toes, which, extending down to the very point, gives them great power in swimming or diving. The examination of an otter will show that it has two sorts of fur coating, — one short and thick, the other long, shining, and close: this double guard is common to most quadrupeds subjected to change of *media*, as air and water. The otter is mephitic, like other of the *Mustelæ*, but its odour is not equally fetid with some of the family, although the glandular anal orifices are sufficiently conspicuous. "The otter," says Pennant, "shows great sagacity in forming its habitation; it burrows under ground in the banks of some river or lake, and always makes the entrance of its hole under water, working upwards to the surface of the earth, and before it reaches the top, after the fashion of the builders of houses for ourselves, who make several floors to accord with the necessities or the convenience of the occupants. It finishes its lodge by making a minute orifice for the admission of air; and the more effectually to conceal its retreat, it contrives to make even these little air holes in the midst of some thick bush." The female produces four or five young at a birth, which is said to take place in the spring on a mossy couch, where she rears them with extreme assiduity and with equal caution; for it is very seldom indeed that they are discovered, although often sought for. The ravages of the otter are very great: he is also as subtle as he is voracious; and eel-like, his glidings in the water actually exceed those of the finny tribes he pursues. Who has not been delighted at witnessing the activity of those in the waters of the Zoological Gardens, when turned in to fish for their meal? How flexible are their bodies! how agile their movements! The very deep seems disturbed by their explorations. Having taken a fish, they prove themselves epicures, for they must come and make their meal on what they catch on land: at least this is their custom when a fish of only moderate size is taken; but when smaller fry are within their gripe, these undergo an immediate mastication, and a hasty deglutition. We are surprised to find any writer questioning the capability not only of taming the otter, but also of breaking him to fish hunting, fish catching, and to a faithful delivery of those he takes. Very many well authenticated accounts of this aptitude are on record: a very interesting one is related by Bishop Heber, who, when in India, saw a number which, being tethered to stakes along the edges of the water, were made use of as hunters of the fish which they pursued so adroitly as to drive them into the nets and there only. To show that they perfectly understand what was required of them, we are told by the bishop that they laid hold on the largest and brought them to shore. It cannot but be pleasing to the reflecting sportsman to observe how admirably adapted the figure of the otter is to his aquatic habits. "Its body is elongated and flexible, and terminated by a long, robust, but tapering and somewhat compressed tail, which serves as a sort of rudder in the performance of the evolutions of the animal in the water; the limbs are very short, but remarkably muscular and powerful; and the feet, which consist of five toes each, are webbed so as to serve as paddles or oars. The eyes are large, the ears short, and the lips are furnished with strong mustachios. The covering consists of two kinds of fur, an under vest of close, short, waterproof wool, and an outer vest of long, coarse, glossy hairs. Shy and recluse, the otter is nocturnal in its habits, lurking by day in its burrow, which opens near the water's edge, concealed among intertangled herbage, and is generally carried to a great depth in the bank." (*Penny Magazine*, 1834, p. 496.)

1851. *When therefore the otter is taken young*, we are warranted in asserting it may be tamed and rendered a very useful and obedient servant, particularly in the catching of fish. Aldrovandus, from *Albertus Magnus*, assures us that otters were very commonly kept for that purpose in his time; and he also tells us that at a signal from the cook an otter would immediately set out, catch fish, and bring it home that it might be dressed. Taking fish by means of tame otters is likewise noticed by Vaniere, in the *Prædium Rusticum.* Buffon also, who had long been sceptical on this subject, became convinced of its reality by facts; and himself details the habits of a female otter which had been reared on milk until it was two months old, when it was afterwards fed on soup, fruits, pulse, animal food, and fish; but which latter, in accordance with its nature, it would not eat unless fresh. It was as tame as a dog, came when called, played with a dog, and also ate with the one it was accustomed to, but was furious against any strange one which approached it. This otter, however, had no piscatory talents, and its natural habits were so lost in its early domestication, that it would not willingly even enter the water. It is rather a curious circumstance, that the Romish church permits the use of otter's flesh on *maigre* days; and Mr. Pennant says that he actually saw one preparing in the kitchen of the Carthusian convent near Dijon, for the dinner of the *religieuse* of that order, whose tenets oblige them to renounce the eating of flesh during their lives. The rankness of the flesh of the otter could have been tolerated by none but a truly piscivorous appetite; and the eating of the otter under the semblance of fish, might be truly called "cheating the devil."

1852. *In North America a small otter is known as the minx.* Its length is about a foot; it is, like the European, of a dark colour upwards, but tawny below, with white on the chin and throat. It is also found in Poland and Lithuania, and is much valued on account of its fur. Its habits are the same with the European, but it is more mephitic.

1853. *The sea-otter* (figured in p. 68.) inhabits the northern parts of the Pacific Ocean, is considerably larger than our fresh-water species; and its black brilliant coat, smooth as velvet, is a most valuable fur, being purchased with avidity by the Japanese and Chinese from the English and Russians.

SUBSECT. 2. *The Practice of Otter Hunting.*



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OTTER HUNTING IMPLEMENTS.

1854. *Otter hunting in olden times was a very favourite variety of the chase*, and after the manner of those times was followed with all due observance of formalities. The otter hunter's vest or green dress was either bordered or turned up with red. A cap of fur, with a gold band was worn, and by a few it was seen surmounted with a small dyed ostrich feather. Waterproof boots, which reached to the fork, were then frequent, and are still used, but were then graced by the *exquisites* of that day with gold or red tassels. Such were the observances of the lordling hunts; but there were the hunts of the mobility also, when, as we read, a whole village crew or even township united, with weapons in hand of every kind. Dogs of every variety were also employed, and the whole rather resembled a conspiracy than a hunt. The true sporting methods of pursuing the otter are with five or six couple of dogs, thence called otterhounds; but in consequence of the rarity of keeping up a full complement for this purpose, it is but seldom that we meet with an organised and *in-and-in* bred pack of this kind. Dwarf foxhounds, crossed either with the water-spaniel, or with the rough wire-haired terrier, are used; but the best otter-dog, in our opinion, is that bred between the old southern harrier and the rough crisp-coated water-spaniel, with a slight cross of the bull breed to give ferocity and hardihood.

1855. *The otter spear* being an essential accompaniment to this sport, and being also variously manufactured, we have placed its most efficient varieties as a heading cut to our subject (see *fig.* 277.). This weapon in the hands of the parish youths and rustics is a mere ashen pole pointed at one end, but with some others the pole is seen shod with an iron pike. The otter spears, however, formerly most in use among the professed hunters of this animal, was the forked spear with small barbs (4, *fig.* 277.), and the single spear with a slight barb (3). The modern spring barb (6 and 7), when counter sunk within the head of the shaft or pole, is truly an efficient instrument, and is that which is now in general use among the best otter chasers. The stalk, handle, or pole, is usually of ash, as being a wood at once tough and not very weighty: it should however be straight, otherwise it is not to be depended on as a leaping pole. Its lesser extremity being, as already observed, pierced by a counter sink or female screw with collar, purposely to receive the spring barb seen *in situ* at 5, and alone and enlarged at 6 and 7. The figures 6 and 7 also serve to mark the spring barbs alone, both sprung and unsprung; figure 1, representing the barb as it appears before it penetrates the body of the otter. The otter being stuck through its tough hide, its return is effectually prevented from all possibility of being extricated by the hook, which then expands, as seen at 2. The figures 8 8 mark the male screw, which secures the spring barb within the female screw of the head of the pole. The double or forked otter spear is an old but an efficient weapon, although by no means equal in its certainty of holding the otter as that already described. The spring barb may therefore be considered that best adapted to secure the otter, for when struck with this, the toughness of his hide effectually prevents his releasing himself from it. We hardly need observe, that in all organised otter hunts each attendant is armed with one of these spears; sometimes an attendant carries a spare one, or even two, to replace one lost by being thrown into deep water, or into very precipitous passes, which the cunning of the otter often makes him seek. These occurrences are not uncommon in the wilds of Scotland, Ireland, &c. We have already hinted at the subordinate use of the otter spear as a leaping pole, by which moderately wide rivers may be crossed without wading. Brooks of considerable width can be easily vaulted over, after the manner of the Dutch, whom we have frequently seen make surprising leaps over the lesser dykes and boundary ditches of Holland by means of such a pole.

1856. *The mephitic nature of the otter* furnishes one of the most formidable weapons against his safety from his pursuers. His scent is very strong and lasting, far more so than that of the fox; indeed it is so much so, that a good hound will challenge it many hours after the animal has left the spot. The lodging of the otter is called his *kennel* or *couch*, and his occasional lodgments and passages to and fro are called his *holts*. His kennel or couch which holds him during the day is usually an excavation formed in banks by the sides of rivers, large brooks, or extensive ponds; and although it exhibits much ingenuity of construction, yet is very inferior to that of his congener, the beaver. Aquatic as he is in his maraudings, he is very careful to lie perfectly dry; he therefore constructs various *couches* at different altitudes, so that, let the water rise or fall, he has an underground-floor, a ground-floor, and an attic. Yet he is not particular, but like the fanciful has many dormitories; indeed, we read of one which couched daily in a cellar, and was after many ejectments killed there at last. He is frequently found in the deep recesses formed by tortuous roots of the alder, and sometimes within a hollow in the body of a tree. The vicinities of sluggish and moderately deep streams may, however, be considered as his strongholds, the overhanging banks of which shelter him in their recesses, as the elevated dry patches which divide the currents are the spots on which he deposits his *spraints*, and here he breaks up his prey and leaves the refuse.

1857. *The spring being the season of otter hunting* renders this sport a very convenient wind-up to the winter chasings; and as the weather becomes warmer, also, it is pursued without danger from cold and moisture; for spite of thick jackets, seal-skin caps, and waterproof boots, a ducking is often the by-play of the sport; and he who fears one is not fit for otter hunting. It is prudent to commence early in the morning, as the game may then be more readily tracked to his *couch* by his *seal*. Arrived at the water side, some old hound is heard to challenge, who has scented him or her by its *vent hole*, or direct communication with the land surface, probably on the acclivity of a bank, but artfully concealed within some bush, or, it may be, overhung by the inequalities of a piece of ground. It frequently happens on the approach of the pack, particularly if he has been hunted before, that he will leave his couch, and diving under water, will make head up the stream, and soon be a mile in advance. The dogs being laid on, his *sealings*, or dung, must be looked for, and the water carefully watched to observe his *ventings*. In venting and respiring, his muzzle only appears above the surface, but his track is often observed in brooks by the mud he stirs up; while in rivers he may be sometimes tracked by the bubbles of air he throws out. "Look! look! look!" cries one, "there he is!" and now being viewed, the sport may be said to begin; and although all is animation, and much bustle appears, yet the steady otter hunter usually does little more than watch the dogs, who, though busy in the search, have yet much to do; for by dint of diving and other manœuvres the game will often, for the time, give them the *go-by*. Now something in the nature of a cast is made, and he is tracked and scented for, up stream and down.

When however he is next viewed, the dexterous sportsman endeavours to spear him by a lunge if within reach, if not, he *casts* his spear dart-like, and often with murderous effect (*fig.* 278.). Should he however miss, the attempt is made by another, while the spear, imbedded in the mud, can only be redeemed by wading, or even swimming for it, if its barbing does not sink it. We will suppose that the otter has escaped the spear altogether, but the staunch hounds will, nevertheless, not be denied; for while some watch the water for his ventings, others are scenting every spraint, and nosing every offal he has left. Soon, therefore, he is again personally engaged with one or more of the dogs; and probably he dives, and draws one of his enemies with him, but until the brave hound is almost strangled he will not quit his hold. The otter too must rise to the surface to breathe, and again all are on the look out for his vent. "Have a care, there!" cries an old hand at the sport, "don't strike too precipitately, or you may transfix a dog instead of the otter, for the eager hounds are ready to seize on him the moment he rises to vent." The old otterhound is, however, usually too intelligent to come in the way of the spear; on the contrary, we have ourselves seen him watch every motion of the sportsmen, so as not to expose himself to the lunge which every now and then is made as the otter is viewed, or as he rises to vent. Many casts, as may be supposed, are therefore made at him without effect; and in the mean time it is not uncommon for the dogs to seize him, and he is then soon bitten to death, yet not until he has imprinted some serious, and not unfrequently fatal wounds on a dog or two, which nevertheless, if they are bred to the sport, will not suffer a cry to escape them. Although the otter may be bitten, and bitten to death, it is but seldom that he is broken up, except he be left to lie exposed to the fury of the hounds for a considerable time. In all other cases, we repeat, such is the tenacity of his hide, that it is impenetrable to the common bite of even these vermin biting dogs. Among the most energetic otter hunters it is, however, the wish of each to signalise himself by transfixing the game by his own spear; and it is truly surprising to see how effectively the well practised sportsman at this chase wields this weapon, in many cases delivering it in such a manner as to pass directly through the otter, and fix him either to the bank, or otherwise to the bottom of the river, from which, however, his dying efforts usually release him: but from the barbed spear itself no exertions can free him, as the barb, or barbs, form an insurmountable obstruction to its extraction. The spear, if thus delivered, which we will suppose to be the case, is generally regained by the lucky sportsman, who having dealt the blow usually himself plunges into the stream, when raising his prey on high he leaves the water, the gallant hounds accompanying and clustering around him, to have the last shake at his tough hide, which, if any life is left in him, they are allowed to do. Otter hunting was formerly much more practised than at present, and as the season for it takes place when fox hunting and hare hunting are given up, it comes in fortunately, in point of time, to break the tedium of waiting for the return of those more popular sports. Somerville, who so admirably paints to the life all scenes of the chase, is thus equally eloquent and descriptive on that of the otter: —

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OTTER CHASE.

"This subtle plunderer of the beaver kind,
Far off, perhaps, where ancient alders shade
The deep still pool, within some hollow trunk
Contrives his wicker couch; where he surveys
His long purlieu, lord of the stream, and all
The finny shoals his own. — On the safe sand
See there his seal impressed! and on that bank
Behold the glittering spoils! half eaten fish,
Scales, fins, and bones, the leavings of his feast
His seal I view! O'er yon dark rushy marsh
The sly goose-footed prowler bends his course,
And seeks the distant shallows.
Huntsman, bring
Thy eager pack, and trail him to his *couch*.
Hark! the loud peal begins: how greedily
They snuff the fishy stream, that to each blade
Rank-scenting clings!
Now on firm land they range; then in the flood
They plunge tumultuous; or, through reedy pools,
Rustling, they work their way: no *holt* escapes
Their curious search. Yon hollow trunk,
That with its hoary head uncovered, salutes
The passing wave, must be the tyrant's fort.
Mark well! how these impatient climb,

While others at the foot incessant bay:
At length his *couch* he leaves, and dives along!
Th' ascending bubbles mark his gloomy way.
See, there he *vents!*
The pack plunge headlong, and protended spears
Menace destruction. Ah! there once more he *vents!*
See! that bold hound has seized him: down they sink,
Together lost: see there escap'd, he flies
Half drown'd, and clambers up the slippery bank,
With oose and blood distain'd. That spear has pierc'd
His neck; the crimson waves confess the wound.
Lo! to yon sedgy bank
He creeps disconsolate; his numerous foes
Surround him, hounds and men. Pierc'd through and through,
On pointed spears they lift him high in air." (*Fig.* 279)

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DEATH OF THE OTTER.

1858. *Otter hunting in Ireland* is spiritedly and well described in the *Wild Sports of the West*, to which we would recommend the reader who is interested in this subject. In Scotland, also, it is pursued with much ardour with wire-haired terriers. An animated scene of this kind is thus related in the *Penny Magazine* for 1834:—" It was a fine morning in September. Landing on one of the islands from a boat, the terriers were loosened from the couples, and left to their own instinct to find the otter's den. After scrambling a considerable distance over masses of rock and loose pebbles, on a remarkably wild and beautiful shore, the dogs, by their eagerness of manner and incessant barking, convinced the party that the game was within scent. The gentlemen with guns cocked then arranged themselves in convenient situations for intercepting the passage of the otter, should he attempt to take refuge in the sea; some mounted on the tops of rocks, others stood near the water or in the boat, which had accompanied the party from the landing-place. The keepers in the meantime assisted the dogs in their efforts to discover the lurking-hole of the prey; one of them, a thick-set Highlander, displayed a very characteristic enthusiasm. Addressing the dogs in Gaelic, he set to work with all the fervour of the animals themselves, tearing away large stones from the mouth of the hole, and half burying himself to enable the dogs to come at their object; they in the mean time ran about, yelping in the greatest excitement, and scratching at every aperture between the stones. While this action was going on at one hole, a large otter poked his head out of another, and looked about with as much astonishment as his countenance was capable of expressing, until catching a glimpse of one of his enemies, he suddenly retreated from the light. This incident having been observed, the attention was transferred to the retreat thus betrayed. A large stone was first uplifted, and hurled upon the top of the pile, with the intention of either forcing the inmate out by the shock, or of breaking some of the stones. Then a pole was thrust into the crevice, which was enlarged so as to admit a dog. One of the canine besiegers immediately rushed in, and after a few seconds spent in grappling with his antagonist, an otter was dragged forth, at whom the whole body of dogs ran a-tilt. His defence was most heroic, many of his assailants exhibiting evidences of the power of his bite, and the battle was continued for several minutes; all which, to those who delight in the display of game qualities among the enraged combatants, must have afforded high enjoyment. Dogs and otter, involved in one compact group, at length rolled down a precipitous ledge of crags, at the bottom of which the otter gamely yielded up his life. Two others were taken directly after at the same cairn; one was shot as he made towards the water, the other was dragged by the tail by one of the men from his hole, and bagged alive." (P. 504.) Goldsmith's humanity interested him in the cause of the otter, which he would have reared with small fishes until approaching maturity, when, he says, they should be fed on milk and bread; next, on bread and vegetable matter; and lastly, on bread alone—given them, as we suppose, to wean them from their love of fish; after which they may very well be supported on bread alone. He also enters into the method of training one to hunt and take fish, by first practising him at taking up a semblance of a fish, made of leather and stuffed with wool, at first drawn from the ground only, and next from the water. When this is done, he is practised on dead fish, and next is sent in quest of living fish. The process is tedious, and requires that a complete hold be taken on the creature's regard; but when that is effected, he will catch enough to supply a whole family. As an instance of their aptitude for domestication, we read of one that became so tame as to go out with the otterhounds, which would on no account molest him; and, what was still more surprising, the hounds were so loath to injure an otter when this one was present, that, as is said, the owner was constrained to part with it.

1859. *Trapping of otters* is also practised where hounds are not at hand to free the waters from their ravages, which are enormous. " One killed near Leominster measured from the nose to the end of the tail four feet ten inches, and weighed thirty-four pounds and a half. This animal was supposed to be eight years old, and to have destroyed for the last five years a ton of fish annually. An unbaited trap must be used on such occasions, for they reject every kind of bait; this trap must be placed near his landing-place, which will be found by carefully examining the edges of the river or pond, either by his spraints, his seal, or the remains of fish (for in whatever place he eats his plunder, he always leaves the tails, or hinder parts of the fish, undevoured); the trap must be set in and covered with mud, to prevent his seeing it; the instant the trap strikes, the otter plunges into the water with it, when its weight preventing his rising to the surface soon destroys him. The trap will seldom be drawn more than twenty yards from the spot, and with a grappling iron is soon recovered. If the place where he comes out of the water cannot be discovered upon the ground, where the remains of fish are left, cut a hole near the edge of the water and place a trap or two upon a level with the ground, and cover it over carefully with moss. Although the otter usually rejects all baits in the trap, an instance however occurred in August, 1799, in the river Buckland, near Dover, of his taking a live bait. "The otter suddenly darted from his hole, and seized the bait of a gentleman trolling for pike, who thought the bait was taken by an overgrown fish, in consequence of the animal's violent struggles; after a long contest, in which the troller displayed much skill, to his great astonishment and that of others upon the spot, he drew the otter to the shore, completely exhausted." (*Daniel's Rural Sports*, vol. i. p. 631.) If we had not, from a personal knowledge of Mr. Daniel, much dependence on his veracity, we should almost doubt the accuracy of this story; but coming as it does from such a quarter, and under the knowledge that the trolling line is usually made of platted silk, and consequently is very strong, we yield full credence to it.

1860. *Frosts are very apt to be fatal to otters*, particularly when snow or thick rime lies on the ground, when they may be easily tracked to their couch. Mr. Daniel informs us that, "On the Fobbing Marshes adjoining the Thames in Essex, when the fleets had been long frozen, a party killed nine in one day; and in 1796 a gentleman in Northamptonshire, with the assistance of only a terrier, secured two very large ones alive out of three, which the dog discovered by the side of a brook."

SECT. IV. *Badger Hunting.*

1861. *In our details of the sports of early times* we glanced at badger baiting, conceiving that the slight notice which we took of it was all that it merited; and that its place there was more fitting for it than it would have been here, where we profess to introduce only honourable and manly sports. To avoid any laudatory display of the unfair worryings of animals, which are deprived of the means either of self-defence or of escape from their enemies, has been our intent throughout, and certainly the wooden den of the badger in Tothill-fields bears but a sorry resemblance to its natural ground-burrow, from whence no dog probably could draw it. But in conformity with our intention of noticing the organised chase of every animal which has engaged the attention of sportsmen, we could not omit to notice cursorily this hunting, which is yet popular in the kens of the country fancy; and as this animal's peculiarities give him a strong claim on the attention of the sporting naturalist, we will commence by a slight sketch of his natural history.

SUBSECT. 1. *The Natural History of the Badger.*

1862. *The badger* (*Ursus Meles*, Linn., *fig.* 280 p. 547.) in the zoological classification of Linnæus, was grouped with the bear, and he certainly has several characters in common with that animal. Like the bear, the badger remains during the winter in a semi-torpid state, and it is also said to be equally as fond of honey. Its internal organs of assimilation prove it to be omnivorous; and while we know it capable of living on vegetable matter, it presents sufficient tokens of carnivorous aptitudes; nor are we by any means satisfied that the prejudice against this animal for destroying game, poultry, &c. is wholly without foundation. Be this as it may, how little aware is the unphilosophic sportsman, when he contemns the poor badger as beneath his notice, except to enter his hounds to, that he is an animal worthy of singular attention; and that, in the whole round of the living objects of field sports, he cannot produce one, in some respects, so curious as this despised animal.

1863. *Mr. Griffith justly observes*, that "The badger constitutes a sub-genus in itself. No other species can, with propriety, be placed alongside of it. We might imagine that it was drawn from all the ordinary influences which operate on animal life, by some particular and inexplicable power impelling it beyond the common laws of nature; and we might be tempted, in this instance, even to accuse nature of impotence or irregularity, had we not learned rather to distrust our own conjectures than to doubt of the power, the wisdom, and the infinite benevolence of the Creator. But if the badger be isolated as a species, it yet enters very naturally as a genus or sub-genus of our author (Cuvier), into the series of those animals which are characterised by a tuberculous molar at the bottom of each jaw. These molars, in the badger, are distinguished (the upper ones more especially) by their extent, the effect of which is to limit that of the carnivorous teeth, and consequently to diminish the animal's appetite for flesh and his faculty of using it. In fact, the tuberculous molar of the upper jaw occupies a space equal to that of the carnivorous molar, and of the two false molars which precede it; from whence it happens that the lower half of the under carnivorous tooth is augmented, that it may be properly opposed to the large tuberculous tooth above; which makes it, in fact, one half tuberculous and one half carnivorous. The badger, besides, has two false molars in the upper jaw, and four below; the first of the latter is, however, merely a rudiment. The canines and incisives are similar to those of all the other genera of the marten family; *i. e.* the first resemble the canines of all the carnassiers, and it is the same with the upper incisors. The middle incisor in each lower maxillary is not inserted on the same line as the two others, but much farther in. It is only parallel with them in the extremity of its crown, and on this account it projects more forward." (*Animal Kingdom of Cuvier*, vol. ii. p. 269.)

1864. *The badger is essentially plantigrade*, and has five toes on each foot, united almost to the claws by a strong membrane; the second and third toes are equal and longer than the rest; the first and fourth are next in length, and the inner one is the shortest of the whole. The claws are of great strength, by which means it is that the badger is able to dig so rapidly and deeply into the ground, that two men cannot work sufficiently hard to overtake him when the soil favours his exertions. The soles of the badger's feet also, the observant sportsman will not fail to remark, as presenting a curious turberculated appearance, which is thus described by Mr. Griffith: — "The tubercles of the fore-feet are very thick, and covered with a soft skin, one at the extremity of each toe; three others, disposed in the form of a trefoil, are found on the middle of the sole, which is terminated behind, on the fore-feet, by a single tubercle, and on the hinder, by two contiguous ones: but we are not so well informed on the end and use of this peculiarity, not common to most other plantigrades. He is also mephitic, and so much so, that it is common to say of any thing fetid, "that it stinks like a badger." The glandular apparatus from whence the stinking matter exudes is rather complicated. Immediately on elevating the tail a large transverse opening presents itself, leading to a cavity, the surface of which is furnished throughout with the fetid secretion, the anus opening into another and smaller cavity beneath. The distinctions of hog and dog badger are not acknowledged either by naturalists or observant sportsmen: it is true that the head may, in some instances, be somewhat more elongated than in others, but there appears no established varieties of these animals.

1865. *The badger breeds annually, and brings forth four or five young in the spring.* Schreber says, "In February, if the young of this animal are found and reared by hand, they become very tame and docile." Mr. Daniel relates that he saw one in 1812 so tame, that it followed a butcher of Newport Market about the streets as a dog would do. We have, ourselves, seen this curious pet most attentively following the butcher. Query — Is there any animal whatever untameable? — We believe not. The badger is very extensively distributed, being found in most parts of Europe, as far north as Norway and Russia, and the steppe or desert beyond Orenburgh, in the Russian Asiatic dominions; in Siberia, about the river Tom, and even about the Lena, but it is not found farther north; neither does it appear that it is met with in the northern portions of Asia, but is confined to the cool and temperate parts of the globe. It inhabits China, where it seems to be a more common food than in Europe, Mr. Bell having seen the flesh of a dozen at a time exposed for sale in the markets at Pekin. The hind quarters are the only parts of the badger eaten in this country, and the hams are considered by many as superior in flavour to those of the hog. The fat is in great request for ointments; the skin, dressed with the hair on, is used for pistol furniture: the Highlanders also make their pendent pouches of it; and the hair furnishes the artist with brushes, to soften and harmonise the shades in painting, which are thence called *sweetening tools.*

1866. *The commodious nature of the badger's burrow is well known;* but it is not every one of the badger-diggers who gives to these animals as much credit for ingenuity in constructing their habitation as Blome, who says it is such as to be worthy of observation. "When they *earth*, after they have entered a good depth for the clearing the soil out, one lieth on his back, and another layeth earth on his belly, and so taking his hinder feet in his mouth, draweth him out of the burrow, and having unladen himself of the earth goeth to the same work, and this they do till their chambers or places of retreat are finished: then they proceed to gather in their furniture, that is, the materials for their couch or lodging, as straw, leaves, moss, and the like, which with their feet and head they wrap up so close together, that they will get to their burrows a pretty good bundle; some burrows have seven or eight distinct chambers." We must however observe, that Blome was not sworn to the truth of this method of removing earth. The badger is, on the contrary, so solitary an animal, that he is ever found alone. During the day he sleeps closely rolled up, and only stirs abroad in the night. He accumulates flesh fast. He is to a certain degree a hybernating animal, and, like the bear, exists in very cold weather in a semi-torpid state. The badger, notwithstanding the semi-carnivorous character of his teeth, and the reputation he bears for destroying game, young lambs, &c. does not, when he is domesticated, show an inclination for animal matter, but, on the contrary, appears decidedly to prefer a vegetable diet. Indeed it may be observed in most cases, that where the dentition is not very strongly marked with carnivorous characters, that such animal is more inclined to a vegetable than to an animal diet.

Subsect. 2. *Hunting the Badger.*

1867. *A badger hunt* has one distinguishing feature which separates it from most other huntings of quadrupeds. It is mostly undertaken at night (*fig.* 280.), that being the time the badger roves abroad in quest of food. Many fanciful tales are told of this animal, one is, that pork will entice him out of his retreat in the day, which is equally true with an olden opinion, that his legs of one side are shorter than those of the other. But whether this brevity is sinistral or dextral, we do not remember to have seen stated by any sapient, from Aristotle himself to the present time. We have, however, a cutting remembrance of the faith that was placed in this asserted fact. In our boyish days, when the youthful spirits mounted high, we attempted some sentimental strains in blank verse, which we sent as an offering to an elderly relative. In return, the venerable sent us this consolatory reply, "that he was obliged by the effort, and he hoped the sentiments embodied in our theme were those of our heart; but as for our poetry, it was like the legs of a badger, some long and some short." This was so much the "cut direct," that although it cut our pride at the moment, it spared us many subsequent cuts; for from that time to the present we have never essayed poetry, but stuck to plain prose.

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BADGER HUNTING.

1868. *Of the method of hunting the badger* we have certainly heard much and read more, but we never saw it enacted. Now, as all the detailed accounts of it are nearly alike, it either shows that there is but one method pursued, and that it has not altered since the days of Markham, Blome, and others of the older worthies, or otherwise it proves that one original account was father to all subsequent accounts, for they are all nearly of the same stamp. We, however, believe that badger hunting is essentially the same as it was a century ago; and indeed it is so simple and so uniform in the method of conducting it, as hardly to admit of much variation. In *Scott's Field Sports* we can trace the pen of a veteran writer, to whose ingenuity the sporting part of the world are not more indebted than the public at large for his steady pleadings in the cause of humanity. This gentleman's sketch of badger hunting is thus drawn:—"The badger still more strictly, I believe, than the fox, confines himself to his earth in the day-time, seeking his food by night. He seldom travels above a mile or two from home, and generally to open pastures and feeding grounds, in which the dung of the cattle being turned over is a sign the badger has been there; or when heaps of moss appear collected in cover, the fiants of the animal being also observed. His earths are generally in dry ground, at the roots of trees, or at the base of a bank or eminence. The only badger hunts of which we have any accounts in books is by moonlight, when the earths are stopped, excepting one or two, in the mouths of which sacks exactly and strongly fixed are placed, the sacks having a drawing string, more certain than a hoop, which compresses the mouth closely on the badger having entered and strained with his weight and struggles. The placing of these sacks being finished, a signal is given, by horn or whistle, to throw off the dogs, usually two or three couples. The dogs then draw in a circle of a mile or two, and the badgers alarmed, instantly make for the earths, which for the most part they reach in spite of their pursuers, and are far oftener sacked than taken or killed by dogs in the night-time. The dogs best suited to this sport, in which speed is not required, are terriers of the strongest and boldest kind; and those now made use of are of the cross between the terrier and bull-dog, on which sometimes tough leathern collars are put to defend the neck. The badger thus taken is too generally devoted to the unfair purpose already decried; but in few instances a sack-badger has been turned off and hunted. I have some, but an indistinct, recollection, from the distance of time, of a badger hunt in the day-time upon a firm soil, where fresh earths could not speedily be made, all those which were known having been carefully stopped the preceding night, and several lanterns, with long and large lighted candles placed in particular parts of the cover. A sow and boar, and one or two young, were found in the morning, the hunt continuing some hours, collecting together almost all the inhabitants of the neighbourhood; the old ones made such terrible play, and so thoroughly engaged both dogs and men, that the pigs escaped. The badger often receives his enemy laying on his back, in which position he can best guard himself, and use his teeth and claws. In this position he shows an activity and nimbleness, not at all indicated by his progressive motion; and his skin being loose, it is very difficult to inflict a deep wound, or even to bite through the skin only, from its toughness and substance, and the length and coarseness of the hair with which it is covered. It is sufficiently apparent how inadequate young dogs must be, even the best bred, for such an encounter. Notwithstanding these great powers of both offence and defence, the badger, like the otter, may be killed by a single stroke forcibly given upon the snout." (P. 450.)

Subsect. 3. *The Martens and Wild Cats as Objects of Chase.*

1869. *The marten, martin, or martern* (*Mustela Marte* Linn.) is not infrequently confounded with the *wild cat*, from which it is in zoology as distinct as from the dog which hunts both of them. One is essentially a ferret, and the other a member of the *Felinæ*, or cat tribe.

1870. *The pine marten* (*M. Abictum* Ray, *fig.* 281.) is more the object of the sportsman's search than the beech marten, but is much the most rare. It is also somewhat the largest, strongest, and the most fierce, and is further distinguished by its yellow breast and throat, which in the more common, or beech marten, is white. "It is wild and solitary, shunning mankind, and only dwells in thick woods and forests, principally those composed of pines. It climbs with great facility, preys upon birds and their eggs, and also upon squirrels; the female generally makes use of the nest of another animal for the rearing of her own young. The skin of this is much more prized than that of the common marten; and it appears to have been formerly, at least in Scotland, a lucrative article of commerce." This variety of the marten is taxed with killing the squirrel, that he may possess himself of his dray, which he enlarges and uses for himself and family. He is also fertile in invention for procuring food and escaping danger.

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PINE MARTEN. BEECH MARTEN.

1871. *The beech marten* (*M. Fagorum* Ray, *fig.* 281.) is more slender and rather less than the last; it likewise, instead of hiding itself in deep recesses of the forest, resides more in the vicinities of farm-houses, after the manner of its congeners the polecat, stoat, and weasel. Bewick describes it "As about eighteen inches long; the tail ten, full of hair, especially towards the end, which is thick and bushy; the ears are broad, rounded, and open; the body is covered with a thick fur, of a dark brown colour; the head brown mixed with red; the throat and breast are white; the belly is of the same colour with the back, but a little paler; the feet are broad, and covered on the under side with a thick fur; the claws white, large, and sharp, well adapted for climbing trees, which in this country are its constant residence. The skin and excrements have an agreeable and musky scent, and are entirely free from that rankness which is so disgusting in other animals of this kind: its fur is also valuable, but of less estimation than the other." This marten, when taken young, is easily tamed, and becomes extremely playful and good humoured, although its attachment, however, is not to be depended upon, as it is apt to take advantage of the first opportunity to regain its liberty, and retire to the woods, its natural haunts. Buffon makes mention of one which he had tamed; and if the manners of this individual would serve as a type for the whole they were singular, for it would remain without sleep for two or three days, and then make up for its extra watchfulness by sleeping as long. Gesner also relates the pleasure which one afforded him by its playful disposition and interesting habits; it even visited the house of his neighbours, and romped with much activity and amusing eagerness with a dog it was domesticated with. Mr. Daniel also makes mention of a farmer in a parish in Essex, who was famous for taming this animal, which he so perfectly reclaimed, it is said, as to entirely destroy the propensity observed in most of them to abscond and betake themselves again to their native woods. We ourselves remember to have seen one frisking about the apartments of the Bald-faced Stag Inn on Epping Forest; and to make our remembrance more sure, the varlet imprinted his teeth on our fore-finger. Had Mademoiselle de Laistre fallen in love with one of these instead of a stinking weasel, on which she offers a most interesting detail of its amiability, its beauties, and the warmth of her affection for it, we might not have wondered : or had Strozza's elegy poured forth its sweet numbers on the musky and elegant marten, we could have forgiven him; but to find such poetic powers expended on a polecat, not even their beautiful versification by Dr. Shaw, as annexed, can reconcile us to it: —

" Loving and lov'd, thy master's grief!
Thou could'st th' uncounted hours beguile,
And nibbling at his fingers soft,
Watch anxious for th' approving smile:

" Or, stretching forth the playful foot,
Around in wanton gambols rove;
Or gently sip the rosy lip,
And in light murmurs speak thy love."

1872. *The wild cat* (*le Chat sauvage* Buff. *fig.* 282.), in its origin, is somewhat mystical, inasmuch as it is by no means determined by naturalists whether, as we see it in our secluded woods and forests, it be the original British animal from whence our domestic breed is derived, or, on the contrary, whether individuals which have escaped from domestication may not at last, by their predatory habits, have enlarged in size, and increased in strength and ferocity, to the wild cat so often mentioned in sporting legends, is worthy of inquiry. Bewick observes, " The domestic cat, if suffered to escape into the woods, becomes wild, and lives on small birds and such other game as it can find there; it likewise breeds with the wild one. It is no uncommon thing for females of the tame species to quit their houses during the time they are in season, go in quest of male wild cats, and return to the same habitations impregnated by them. It is said that it is by this means that some of our domestic cats so nearly resemble those of the original wild breed." Although we cannot affirm that this does not occasionally happen, we doubt the frequency of the occurrence. The wild cat is thus described in Murray's *Encyclopædia of Geography:* — " Its manners are similar to those of the lynx; and Mr. Pennant justly calls it the British tiger. In its savage state it appears to be much larger than the ordinary domestic cat; and the teeth and claws, for the size of the animal, are tremendous. It is still found, although rarely, in the mountainous and woody parts of Great Britain; and some few years ago we saw a very fine skin of one that had been killed among the mountains of Westmoreland, near Windermere. Formerly they appear to have been much more numerous amongst us, and to have been considered a beast of chase. The best authorities agree in considering this species common to the forests of Europe, as the origin of our domestic breed, the usual varieties of which are well known. Another variety, which seems more peculiar to Cornwall, has been noticed by Dr. Leach; it is without any visible tail, and is stated to be an hereditary variety." (*Cuv. An. King.* ii. 489.)

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WILD CAT.

1873. *Our ignorance with regard to the direct origin of these varieties of the cat* cannot but be regretted by the reflecting sportsman, but much more so by the professed naturalist, who is thus foiled in his researches by an animal lying at his feet with distinctive features most prominently marked. He knows the purring favourite that rubs his legs, while she drones out her delight, is one of the *Felinæ;* but he knows not whence she is derived, or whether she is the type of an original species, or an accidental variety only. His dogs occasionally kill, and his keeper now and then shoots in the woods, what he calls a wild cat, which differs but little in appearance from the favourite before him. It however happens occasionally, that either his own dogs, or those of his friends or neighbours, kill a wild cat of much larger size, differently marked, and somewhat differently proportioned. The former turns out to be the domestic cat, which, from her predacious tendency, having thrown off all restraint and dependence on man, has become truly wild. This occurs so frequently, that we are surprised at the statement made by an ingenious writer in that excellent work, *The Library of Entertaining Knowledge*, that " The appetite for warmth in the domestic cat is the chief cause which prevents them from *ever* becoming wild." While we resided at Tollesbury Lodge in Essex, a very favourite pet cat, which we had brought with us from London, entirely forsook the house, and betook herself to a neighbouring wood, where her depredations among the game around were such that we were forced to employ the keeper to watch her for several days without success. At last she was shot as she was leaving her hiding-place, which was a deep hole in the trunk of an old oak tree. The same, we know, has happened to many other persons, whose cats have escaped, and have afterwards been recognised in woods, where they not only lived in a truly wild state, but had become ferocious in the extreme, and very destructive to hares, rabbits, and the young of the winged game. We have yet, however, to satisfy ourselves with regard to the origin of the true wild cat (*Felis catus* Linn.), which, following the analogies of the *Felinæ* generally, are almost exclusively native to countries warmer than our own. It is true that occasionally varieties of the *Felinæ* do breed in our caravans and menageries, where artificial warmth is kept up to represent something like a tropical temperature; but the circumstance is too rare to ground any opinion on, of their ever having been indigenous here, at least since our part of the globe has cooled down to its present temperature. It is therefore more than probable, that both the wild and the tame cat have been derived from some other extra-European source or sources. We say source or sources, for such admission begets another difficulty not easily got over, which is this, that if both of these grimalkins own one common root, in which variety was it that the very marked differences between them have taken place? Most sportsmen, we believe, suspect that they own one common origin, and some naturalists also do the same, contending that the differences observable between them are attributable solely to the long continued action of external agencies, which had modified the various organs to meet the varied necessities of the animals. The wild cat, according to this theory, having to contend with powerful enemies, expanded in general dimensions; its limbs, particularly, became massive; and its long and strong claws, with the powerful muscular mechanism which operated on them, fitted it for a life of predacity. Thus its increased size enabled it to stand some time before any other dogs than high-bred foxhounds, and even before them also, in any place but the direct open ground. There exists, however, in direct contradiction to this opinion, certain specialties proper to the wild, and certain other to the domestic cat, besides the simple expansion of bulk, which sufficiently disprove their identity. If our portrait of the wild cat (*fig.* 282.) be examined, it will be seen that a remarkable difference exists between the tails of the two animals: that of the domestic being, as is well known, long and tapering elegantly to a point, whereas that of the wild cat is seen to be broad, and to terminate abruptly in a blunt or rounded extremity. Linnæus and Buffon having both of them confounded these two species into one, have contributed much to propagate this error; which affords us another opportunity of adding to the many we have taken, of remarking on the vast importance of comparative anatomy, which enables us to draw just distinctions between animals that might otherwise erroneously be adjudged to be dependent on external agencies, &c. &c. Nor need we rest here; for what doubt can be entertained on the subject, when we point at the remarkable difference which exists between the intestines of the two: those of the domestic cat are nine times the length of its body; whereas, in the wild cat, they are little more than three times as long as the body. The domestic cat, therefore, by its conformation, evinces that nature intended it to be omnivorous; and although cats prefer animal food, they can subsist on vegetable matter: some vegetables, as asparagus, greens, cucumbers, they are very fond of. Equally so do the curtailed dimensions of intestinal track in the wild cat attest that it was originally designed to be wholly carnivorous; and such it continues: nor can domestication be alleged to have produced this difference; for, reasoning by analogy, the intestines of the domestic boar and those of the wild boar own the same relative proportions to this day. Of the domestic origin of the cat we will embrace this opportunity of farther observing, that M. Temminck, the eminent naturalist, in his *Mammalogie*, No. vi. p. 17. considers the domestic cat an entirely different species from the wild; and he further states his opinion that a new species (*Felis mamculata*), recently received from Nubia by the well known M. Rüpel, is the original of the domestic cat.

Subsect. 4. *The Practice of Hunting the Martens and Wild Cats.*

1874. *The huntings of the marten and of the true wild cat*, particularly of the latter, were much more common formerly than at the present day; both animals were much more plentiful. The marten, particularly, was employed to enter young hounds to. Various have been the different modes adopted by different masters and huntsmen of entering young hounds to their game; this particularly relates to fox hounds: it was no uncommon practice to enter them first to hare; and strange to say, this custom was persevered in, and advocated by one of our best sportsmen, a master of hounds. There is scarcely any mode of doing any thing that has not some advantage in its practice; so had this, but nothing at all to compensate for the absurdity and cruelty of encouraging a young animal to hunt game that he will afterwards be half flogged to death if he attempts to chase. Allowing hare hounds occasionally to hunt fox is, no doubt, somewhat prejudicial to their perfection as harriers; truly if from such practice they should change from the hunted hare to a fox if they came across one, the consequence is, probably, a better run than the hare would have given; but changing from fox to hare spoils the day's sport at once. Mr. Beckford says, " If you have marten-cats within your reach, as all hounds are fond of their scent, you will do well to enter your young hounds in covers which they frequent." It should be borne in mind, however, that the marten seldom dies without giving the dogs a receipt in full upon their noses. Mr. Beckford, aware of this, adds, " I do not much approve of hunting them with the old hounds, as they scratch and tear them considerably." He, however, appears to omit one very useful lesson that the marten gives to young hounds, which is that of teaching them to hunt their ground over diligently and very closely. It also, by the force of the scent, makes them fearless and industrious in the thickest covers, which the martens always hang to, in hopes of eluding their pursuers. In *Scott's Field Sports* it is said, " The marten, when hunted, will sometimes run miles in large covers, and will engage the dogs a considerable time, showing great sport. In his course the hunted animal takes many opportunities to climb trees and recover his wind, the hounds baying him, until he is frightened or cudgeled down, when he shows an almost miraculous agility; for although he frequently alights in the midst of the pack, and each hound mad to catch him, he is very seldom so caught, and his escape is greeted with a loud general halloo. He cannot well, however, escape finally; but at his death, if not too much exhausted, never fails to leave to the forward dogs bloody noses, torn ears, and sometimes deep envenomed bites, which do not heal quickly." (P. 45.)

1875. *Hunting the wild cat* partakes more of the mobbing hunt than that of an active, legitimate chase: it can seldom be forced to take the ground and show any run, but if surprised in a plantation, will race from tree to tree with extreme agility, and might occasionally afford a moderate burst, or rather a dodging run, in the open also, particularly before the mongrel pack of former times. With better dogs it is very seldom purposely sought for, and when found accidentally by them, they are usually whipped off. Were they, however, every one of them of the size of that noticed by Bewick as being killed in Cumberland, we might expect some sport from them even in the open. This monster, it is stated, measured from its nose to the end of its tail upwards of five feet.

PART V.

COURSING THE HARE.

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MATCH COURSING MEET.

1876. *Coursing*, as a popular term, is understood to denote a branch of hunting, in which the dogs employed pursue their game by sight only, in contradistinction to our popular methods of stag, fox, and hare hunting, in which the scent of the chased animals enables the pursuers eventually to run them down. Under this view it is evident that the dogs employed in coursing must be gifted with sufficient speed to keep their fleetest game in view. As the animals which were coursed by the ancients were of very different kinds, such as the wild ass, the stag, the mountain goat, the wolf, jackal, boar, fox, hare, &c. &c., dogs of very different degrees of power, size, and hardihood were required: all the dogs employed, however, owned one common property, that of hunting by the scent the pursued animals left behind them; and so long as these wild animals abounded, the pursuit of them *at force*, by powerful dogs, was both politic and exhilarating. The true *coursing* breed of dogs which were to hunt merely by sight, would here have been useless, for the numbers of wild beasts around would have distracted the attention of unscenting dogs and dissighted them; but it was far otherwise with the early hunters we allude to, who principally hunted the larger animals with scenting dogs, which, although of but moderate speed, yet were, it is said, so true to the scent, that though obliged by the arrival of night to suspend the chase, and lie down until the morning, have then again hit off the scent, and resumed the pursuit of their prey with unerring certainty.

CHAP. I.

THE CHARACTER OF COURSING AS A FIELD SPORT.

1877. *Coursing*, like other field sportings, has its advocates and its enemies; it also presents its bright and its cloudy sides. It is not, indeed, fit that we should all be enamoured of the same pursuit; but it is proper that we should not underrate the amusements followed by others. Many characters, eminent as well by their rank as by their wealth and attainments, are zealous in the practice of this branch of venation; yet we should find some difficulty in opening the eyes of many of those who as zealously pursue other chasings, to the halo which brightens the feats of the *long dogs.* We may be asked what pleasure there can be for people marshalled in a line, at certain distances from each other, monotonously to walk or ride at a foot pace over a ploughed field, or across a wide heath, in a bleak November day, the eye anxiously directed hither and thither to catch the clod or the side-long furrow that half conceals poor puss, or to espy the tuft she has parted to make her form in. We confess the picture is gloomy, but the reality much less so; for even here the exercise warms the body, while expectation and hope are at hand to cheer the mind; nor have we any occasion to indulge in the worst side of the question, for it is not always that the weather is unpropitious, nor is it always that the sport is necessarily monotonous, and certainly it need never be solitary. Troubles diminish as they are shared by numbers, and the pleasures of hope and expectation are increased by participation.

1878. *Match coursing*, it must be confessed by all, offers a vivid picture. Its practice throughout is social and animating in the extreme ; and if its excitements are more transitory than those of the fox chase, they are certainly greater while they last, and moreover are usually repeated several times in the same day. When a favourite dog has been entered for a purse, cup, &c., what are the feelings of the owner as he strides along in the rear? and how he alternately hails the turn, or shrinks from the sight of the go-by. The fox hunter's joys are great without doubt, but now and then he draws a blank, when the loss is more keenly felt, in proportion to the expected delights. A bad find, a bad scent, continually at fault, bad casts, bad weather, bad country to go over, and a lost fox at the end of the bad run, are bad items in the fox hunter's memoranda. Nor does the list of ills end here, but superadded thereto is a ride of some ten or a dozen miles home, vexed, fatigued, and wet to the skin. Even with whole bones this is bad fare, and, as such, is part and parcel of what the courser would put in the *per contra*, when comparing his joys with those of the fox hunter.

1879. *The turfite may regard coursing as slow dull work* when viewed in competition with the bustle, the pomp, and the excitement of the race-course. He may also plead how inferior the practice of coursing is compared with that of racing, in the dissemination of wealth, and in the little encouragement it holds out to improve the breed of horses. While, however, we cannot but admit the truth of these allegations, we may yet point out the vast superiority which coursing has over racing, in presenting so few temptations to ruinous gambling. The courser has little to do with the dangerous practice of "making a book," or of risking his thousands on the consequences of a momentary gallop. Few are the temptations of the courser to any questionable practices: he may probably pertinaciously question the propriety of a decision, which has adjudged the cup or stake to any other than his own dog, but this is usually the head and front of his offending.

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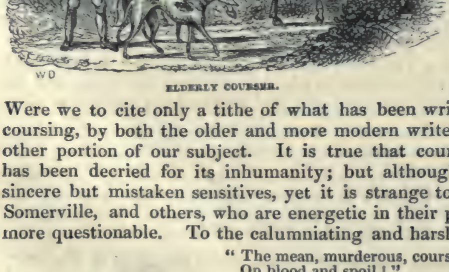

ELDERLY COURSER.

1880. *There is even a philanthropic character about coursing almost unknown to other huntings.* It may be said to offer a kind of refuge for the sporting destitute, for it holds out innocent recreation to those whose means or whose prudence will not allow them to risk either their neck after a fox, or their wealth after a racer. Here the octogenarian, at once labouring under his increased years and his decreased energies, may solace himself with an epitome of former huntings (*fig.* 284.); and farther, that the joys of this chase are within the reach of every state or stage of life. Limited means are not shut out from them; the timid have little occasion to dread them; nor does the enjoyment of them outrage any of the decencies of life, or hazard any of its sympathies. Were we to cite only a tithe of what has been written, and written well too, in favour of coursing, by both the older and more modern writers, we should leave little room for any other portion of our subject. It is true that coursing, in common with other huntings, has been decried for its inhumanity; but although we can respect the feelings of some sincere but mistaken sensitives, yet it is strange to hear this sport reprobated by Savory, Somerville, and others, who are energetic in their praise of other field sportings infinitely more questionable. To the calumniating and harsh apostrophe of Somerville —

"The mean, murderous, coursing crew, intent
On blood and spoil!"

we oppose the following from Arrian — "For coursers, such at least as are true sportsmen, do not take their dogs out for the sake of catching a hare, but for the contest and sport of coursing, and are glad if the hare meet with an escape: if she fly to any thin brake for concealment, though they may see her trembling, and in the utmost distress, they will call off their dogs, and more particularly so when they have run well. Often indeed, when following a course on horseback, have I come up to the hare as soon as caught, and myself saved her life; and then, having taken away my dog, and fastened him up, allowed her to escape. And if I have arrived too late to save her, I have struck my head with sorrow, that the dogs had killed so good an antagonist."

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COURSING.

1881. *Among the innumerable lovers of coursing of rank, talent, or wealth*, Mr. Barnard, of the Coursing Club of Malton, stood conspicuous. He appears, in the words of a warm admirer, to have been gifted far beyond the ordinary worshippers of the sylvan goddess, and few have occasioned more regrets at his unexpected departure from this sublunary scene. The *Stud Book*, for a time kept by Mr. Goodlake, originated with Mr. Barnard; and how much it added to the courser's pleasure, by facilitating his inquiries, we need not say. Mr. Barnard was an accomplished gentleman, possessed of learning, genius, and taste: that he was no mean poet also, the specimen which follows will bear testimony; and although it is not within the plan of our work to offer much poetical illustration, yet we think we shall in this instance stand excused by the aptness and merit of the matter presented: —

MY GREYHOUNDS.

"Remember'st thou my greyhounds true?
O'er holt or hill there never flew,
From leash or slip there never sprang,
More fleet of foot or sure of fang." *Sir Walter Scott.*

"Oh! dear is the naked wold to me,
Where I move alone in my majesty;
Thyme and cistus kiss my feet,
And spread around their incense sweet.
The laverock, springing from his bed,
Pours royal greetings o'er my head;
My gallant guards, my greyhounds tried,
March in order by my side;
And every thing that's earthly born,
Wealth, and pride, and pomp, I scorn;
And chiefly thee,
Who lift'st so high thy little horn,
Philosophy!
Wilt thou say that life is short,
That wisdom loves not hunter's sport,
But virtue's golden fruitage rather
Hopes in cloister'd cells to gather?
Gallant greyhounds! tell her, here
Trusty faith and love sincere,
Here do grace and zeal abide,
And humbly keep their master's side.
Bid her send whate'er hath sold
Human hearts — lust, power, and gold —
A cursed train —
And blush to find that on the wold
They bribe in vain.
Then let her preach! The muse and I
Will turn to Gracchus, Gaze, and Guy;
And give to worth its proper place,
Though found in nature's lowliest race.
And when we would be great or wise,
Lo! o'er our heads are smiling skies;
And thence we'll draw instruction true,
That worldly science never knew.
Then let her argue as she will!
I'll wander with my greyhounds still,
(Halloo! Halloo!)
And hunt for health on the breeze-worn hill,
And wisdom too."
Rev. E. W. Barnard.

Sect. I. *History of Coursing as a Sport.*

1882. *The antiquity of the sylvan sport of coursing is great*, and its celebrity has accompanied it to the present time. Its history stands, therefore, on vantage ground, handed down to us as it has been by accredited writers of great reputation, whose concurrent testimonies have left us in possession of the opinions and practices of the coursing amateurs of many ages. The greyhound, or, as we should rather say, a dog quick of sight, and somewhat swift of foot, is supposed to have been known nearly four thousand years ago, and as a member of the class *celeres*, he is without doubt entitled to this credit; but his early and his later histories point, if we mistake not, to very important anatomical alterations in him. That the practice of coursing had attained a systematic form, and was accurately described by Arrian, who flourished A. D. 150, and whose celebrity as an author gained him the honourable title of the younger Xenophon, we readily admit; and further we are disposed to consider, that the *vertagus* of Arrian had, by culture, undergone some of the important anatomical changes we have alluded to; but we nevertheless maintain, that other changes of no less importance resulted from British culture. As already hinted, we are aware that coursing of several animals with fleet dogs was practised before the time of Hadrian and the Antonini. Nevertheless it is conjectured with much apparent probability, from the silence of the elder Xenophon on the subject, that *hare coursing* with the true *vertagus* or greyhound (apparently a consimilar with our own of the present day) was not known or practised until after his time.

1883. *The history of coursing* is much indebted to a late translation of Arrian, by one whom we are allowed to know only as a " Graduate in Medicine." The writer of such a work cannot, however, long remain unknown; neither does he do himself common justice by concealment: and we crave his pardon when we add, that he hardly does justice to an admiring public, to withhold his name from a work that would add lustre to any rank or station. The erudite researches of this scholar has enabled him to select from various cynegeticas in print and manuscript more interesting and authentic information on the rise and progress of coursing than is to be met with, we believe, in any other single work. To him the coursing public in particular, and persons of classical and historical research in general, are under great obligations, and a *cup* of *cups* should be awarded to him whose pen has *run a course* which almost defies competition.

1884. *After the Cynegeticon of the younger Xenophon*, as Arrian was called, history is almost barren on the subject of our inquiry. It is true that Gratian, the Faliscan, left an imperfect sketch on the subject, and Ovid also, in his *Metamorphoses*, describes a single-handed course, of which the translator of Arrian observes that, " As it is the first attempt of the kind by any classic author, so it is unrivalled in the accuracy of its technical phraseology and the beauty of its poetry. Martial, Julius Pollux, and Oppian, the celebrated Greek poet, have also noticed the sports of the leash, and of still later date are the instructions of Nemesian in his *Cynegeticon*, on the selection, feeding, and entering of greyhound whelps. To the literary stores contained in Greek and Latin cynegeticas, succeeded the dearth of knowledge which marked the dark ages, during which few sporting notices, practical or theoretical, are recorded. It is true that the Salic, Burgundian, and German barbaric codes of law still protected the veltris or greyhound; and it appears also that the sporting writers, we have already noted, continued to be read during this reign of ignorance and barbarity. We further learn, that in the time of Charlemagne, the writings we allude to were in great request in the schools; and likewise that coursing, and other field sports, were yet cultivated by these semi-barbarians; and Spelman informs us that the court of Charlemagne had its *veltrarii*, or officers of the greyhound kennel, who superintended the coursing practices. Nevertheless many centuries passed away without any acknowledged manuscripts on the subject appearing; and were it not for occasional allusions to the greyhound and his high repute, as characterising the rank of his possessor, we might have supposed the veltris and his occupation both swamped in the Styx.

1885. *As the dawn of literature again appeared*, field sports once more occupied the attention of writers. Among them the first on record appears to have been Gaston Phœbus, the celebrated Comte de Foix, who, about the middle of the fourteenth century, produced a treatise, entitled *Des Deduitz de la Chasse de Bestes Sauvaiges et des Oyseaux de Proye*, which was followed in the latter part of the same century by *The Mayster of Game*, composed by Edmund Duke of York, the fifth son of Edward the Third. This work very accurately described the dogs of the chase generally, but the greyhound was more particularly treated on. To this succeeded that mystic performance attributed to the redoubted Dame Juliana Berners, Prioress of Sopewell, which appeared in the early part of the fifteenth century. The translator of Arrian, with much show of probability, thinks that *The Booke of St. Alban's* may be an amplified versification of the prosaic *Venery of Mayster John Gyfford and William Twety*, that were with Kyng Edward the Secunde. The curious on this subject, *i. e.* the authenticity of this work, will do well to consult Wharton's *History of English Poetry*, vol. ii. p. 172. and Mr. Hazlewood's work.

1886. *The Mayster of Game.* The translator of Arrian regrets that this interesting MS. has not yet been rendered more available to coursers by being committed to the press. "With copious general descriptions of our ancient field sports, and animals obnoxious to the chase, **The Mayster of Game** unites specific delineations of the shape of each variety of *Canis venaticus*, employed by British sportsmen of past days, with occasional references to the chase practices of foreign countries 'by yonde the see.'" (*Preface*, p. 7.) If this portion of our subject should at all interest the reader, we would recommend him to have recourse to the *Translation of Arrian* (already mentioned) published by Bohn. In the *Noble Art of Venerie* by Turberville, and in the *Jewel for Gentrie* by Gascoigne, both of which appeared in the early part of the sixteenth century, coursing is slightly touched on, and it will be found treated on more at large in the various compilations of that most quaint and industrious of writers, Gervase Markham. In his *Countrey Contentments* and *Countrey Farm* the history and practice of coursing are very fully described. Further historical notices of our own in relation to this sport will be blended with that of the greyhound, and with the practice of coursing.

SECT. II. *The Natural History of the Greyhound.*

1887. *The Celtic greyhound* (*fig.* 286.) we are led to believe to be the primogenitor of the race of what the courser calls, *par excellence*, the "long dogs;" and if the gem of the celebrated Maffei be a true representation of the greyhound of his day, which there is every reason to believe to be the case, we find our task of tracing this admired animal from a true *child of nature* to his present fostering into a complete *child of art* less difficult than it has hitherto seemed to be. Such dogs as we here see coursing the hare, might certainly overtake her eventually; but we think it most unlikely that they could do it without the combined agencies of scent and speed; indeed, if portrayed faithfully, we are certain they could not do it. Mark well the large head in *fig.* 226., and particularly observe the coarse muzzle, with its termination in a wide spreading forehead, purposely so framed to extend the surface of that membrane in which the powers of scent reside. This point we particularly wish to establish, because on it hinges what we consider to be the veracious history of the cultivated greyhound of our day, an animal not more to be admired for his beauty than for his surpassing powers of flight; but nevertheless, admire as much as we will, when we examine him on anatomical, physiological, and true philosophical principles, we must be constrained to consider him as mainly an artificial animal. Having premised thus much, we proceed to state that the greyhound of early days stands at the head of the small class of *Canes celeres*, of which this individual seems to have been especially selected by the Celts for their sporting practices, and to the culture of which they must have paid much attention before they could have even laid the foundation for the vast change it was yet necessary to effect, ere they could indeed rank with those alluded to by Arrian's erudite translator, when he observes, "No *Canis venaticus* can be enrolled here who runs otherwise than on sight of his game — it is his characteristic property." The inquiry we are engaged in is, however, beset with so many contradictory circumstances and puzzling difficulties, that we enter on it with some doubts whether we shall either satisfy ourselves or our readers on the matter.

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CELTIC GREYHOUNDS.

1888. *The early history of the greyhound* has been supposed by many to point at Greece as the country in which he originated: some others, and as we think with greater probability of being right, make him of Celtic origin; indeed, in his latter state of important and striking improvement, we consider him as wholly Celtic. The very designation of this dog has occasioned almost as much research, and certainly quite as much disputation, as his origin, which gives occasion to the translator of Arrian to say, "The term *greyhound* has confounded English etymologists as much as that of *vertagus* has puzzled Latin commentators. It is variously spelt by our old English writers, as *grehounde* by Juliana

Berners, "a grehounde sholde be heeded lyke a snake;" *greihounde* by Chaucer, "greihoundes he hadde as swift as foul of flight." Lord Berners writes *grayhounde;* Junius, *graihound;* Gesner, *grewhownd;* Harrington, *grewnd.* The terms *grewhound, grewnd, graihound, grayhound, Canis Græcus,* and *Graius,* all indicate a supposed connection with Greece. *Grew* is often used for *Greek* by Douglas and Lindsay." (P. 294, 295.) Nevertheless this able commentator cannot believe the genuine Celtic hound to have been known to ancient Greece, which opinion, we think, is in great measure confirmed by the silence of Xenophon on the subject, who wrote so expressly on venation generally. Our annotator at the same time observes, that he would rather seek the origin of the English name in the predominant colour of the dog, — *Grey, gray, graî, grei,* cæsius, leucophæus, canus, A. S. *græg;* which last, says Junius, might be referred "Ad colorem Græcis γεράνειον (gruinam) dictum; propter eà quod Threiciam gruem simulet vel imitetur, ut loquitur Ovidus," &c. (*F. Junii Etymolog. Anglican.* p. 296.); that is, to the colour called by the Greeks γεράνειον, or crane-like, on account of its resemblance to that of the Thracian crane. "The greihounde of King Cranthlynth's dayes," says Holinshed, "was not fetched so far as out of Grecia, but rather bred in Scotland." The translator of Arrian does not, however, believe that either the English, Scotch, or Irish greyhounds are indigenous to Great Britain, but rather that "All our insular sorts originally sprang from the Celtic *vertagus:* the probability of which is supported by the history of the distribution to the Celts themselves, and the name under which the dogs were sent by Flavian to his brother Symmachus at Rome. May we not therefore conclude, the Irish and Scotch greyhounds to have been primarily derived from the Celtic stock, accompanying these emigrants of Celtic Europe to Ireland, and thence to Scotland; in one or other of which territories they received the name of *Canes Scotici,* from the Scottish emigrants of Celtica who accompanied them? and may not the English greyhound, improved in speed by careful management and judicious breeding, as his master increased in civilisation and became more reclaimed, be derived, through such intermediate links, from the same parent source? The coarser varieties of the North, and of the sister isle, are rarely seen in South Britain; and though at first closely connected with the Celt, and amongst his earliest descendants, are now considered farther removed from the genuine type of Celtica, the ὀυέρτραγος κύων of the Greek manual in consequence of commixture with the *Canes bellicosi* and *sagaces.*" (P. 298.) As far as our humble attainments enable us to judge of the matter, we consider this opinion of the origin, and this view of the descent of the greyhound to be equally borne out by history and by analogical facts. The view here taken is certainly in perfect accordance with history; it also harmonises with the processes of nature in her dissemination of animals, and her fitting them for geographical distribution, by affording them such plasticity of organisation and change of qualities, as shall give them, by culture and close domestication, all the appearances and all the advantages of perfect *indigenæ.*

1889. *To the strict etymologist,* however, the derivation of a name is often of much moment; we therefore once more revert to our former source for a more critical inquiry into the origin of the term greyhound. Minshæi warmly advocates its derivation from the Anglo-Saxon *grig-hound, Canis leporarius.* It is less surprising that Dr. Johnson also, from a confined knowledge of the northern dialects, and a lamentable ignorance of natural history, sanctions this derivation; and that Lye likewise, in his edition of *Junius,* should thus remark on the same subject: — "A Saxonis habent greighound," and that he should further mystify it by adding, "quod islandis grey est canis." We are surprised also that so respectable a writer as Strutt, who, though treating on the early field sports of the Britons, should manifest so complete an ignorance of the natural history of his native island, as to derive the true greyhound from this dog, which in early times was principally used in hunting the badger, then called the *grey.* Shades of Jupiter, Czarina, Claret, Snowball, and Major, rise and tear out the absurd and slanderous assertion! We could more readily yield to the opinion of the learned Dr. Caius, in his work *De Canibus Britannicis,* on account of its laudatory tendency: — "A gre quoque grehund apud nostros invenit nomen: quod præcipui gradus inter canis: gre enim apud nostros gradum denotat." (The greyhound with us derives his name from *gre,* because he holds the chief rank among dogs, *gre* with us denoting *rank.*) Hence it is that we find Osbaldeston, a sporting author of respectability, supposing that "It was the *degree* of superiority in this over all other dogs which, by suffering a curtailment, left him a *grey*-hound." Our attempts, however, thus far tend rather to prove what is not, than what is the root of this name; and we fear that, with the exception of the probabilities offered by the erudite translator of Arrian, we have little to add that is more conclusive. We cannot, however, do full justice to our subject, of the real descent of the greyhound and his designation, without noticing whatever bears on the subject, which leads us to mention a *petite tome* on coursing, considered as the production of Sir William Clayton, a gentleman well known as a sportsman, and equally so as an accomplished scholar. Neither can we refrain from regret that, as he did enter the portals of this subject, he did not pursue his investigations, but contented himself with leaving the matter nearly as he found it: however, candour obliges us to own that it is probable he pursued the wisest course when he left off, with observing, that from whence the greyhound race derived its immediate origin may be still a doubt. The baronet however quotes Buffon, "who having," as he observes, "entered so deeply into natural history, and illumined many of its darkest shades, is of opinion that the modern greyhound is derived from what he terms the 'matin,' but in its descent becomes finer, more slender, and more delicate in shape and skin, from climate, care, and attention to a mixture only with its own species. Fawn-colour he considers as the natural predominant tint of the greyhound; and he thinks that white, black, grey, or any other colour is derived from a mixture with the 'matin' or the dane, and that long hair springs from a mixture with the spaniel. Though this observation of Buffon's," continues the baronet, "is qualified with the '*peut-être*,' or 'perhaps,' the rough-haired greyhound is generally stigmatised by the sportsman as a species of mongrel, and undoubtedly has not often that perfect symmetry, which makes the high-bred greyhound so beautiful." This is certainly the prevailing fancy of the present day; but if the matter had been somewhat farther looked into, it would be seen that the early Scottish greyhounds, from which source our own are derived, were all wire-haired, and are the most picturesque.

1890. *Mr. Thacker also*, a courser of no mean celebrity, warmly advocates the cause of the greyhound, and his claim to *a complete originality of descent.* His olden name he considers to have been *lælaps*, and it was certainly the Hebrew term for hound, as *celeb* was that of a dog generally. *Lælaps*, he observes, was also of the *vertagus* or greyhound species, as the evidences of statutes and the *Metamorphoses* of Ovid prove. "From these and other circumstances," says this well known courser, "I am inclined to think that *lælaps* was their original designation, which in our language signifies hound, a dog of chase; and that other dogs of chase were designated by the game they pursued, as subordinate to the greyhound in grandeur and other qualities. He was sung of by Ovid in that name, *lælaps*, and recorded as such by other and more ancient authors, which, in the absence of other species of other dogs being known by that name in those very early ages, seems to warrant that conclusion. In the succession of ages, as this species of dog was distributed over different parts of the globe, where different languages prevailed, he was known by different names, characteristic of his manner of pursuing his game, and descriptive of his shape and qualities, as long dog, field-dog, griphound, grighound, grehound, and so forth." (*Thacker on Coursing*, vol. i. p. 74.)

1891. *The importance of the real origin of the greyhound*, whatever others may think, is great to the zealous courser; we cannot therefore, in our own opinion, do justice either to the dog himself, or to his warm admirers, nor indeed to such as are interested in the origin of this elegant animal, without collating from every respectable source whatever tends to throw light on it. Mr. Scrope, in his *Art of Deer Stalking*, has introduced some observations on the origin of the greyhound very relevant to our purpose: — "Of the greyhound," he observes, "although it is a dog which has been longest in use in this country for the purposes of the chase, it is remarkable he should be that which is least known to the present generation of naturalists and sportsmen." He continues — "From modern writers we learn nothing further than that such a race of dogs at one time existed in Ireland, that they were of a gigantic size, and that they are now extinct. One great obstacle in the way of investigating the history of this dog has arisen from the different appellations given to it, according to the fancy of the natives in different parts of the country, of Irish wolf-dog, Irish greyhound, Highland deerhound, and Scotch greyhound." (P. 334.) Mr. Scrope also alludes to the strong greyhounds known in Ireland, Scotland, and England, as early as the third century, as being consimilar with *vertraha*, which, he observes, seems to correspond with the Irish and Scotch greyhounds of our days. The same ingenious author considers it likewise probable that the large dogs known to have been sent to Rome from Ireland in iron cages in the fourth century, were of this kind also; but as we know that the British mastiff was a regular article of export from Britain to Rome in those times, we think that the truth of this opinion admits of some doubt. The antiquity of the Irish and Scottish greyhound, but more particularly the latter, we consider admits of no doubt, and we gladly accept the information of this intelligent writer, who says that, "Amongst the oldest Scotch authorities are some sculptured stones in the churchyard of Meigle, a village of Perthshire. These stones represent in relief the figures of several dogs, which bear so strong a resemblance to the Highland deerhound as to leave no doubt that they are intended to represent this species. The date of this sculpture is considered by antiquaries, and in particular by Chalmers, to have been previous to the introduction of Christianity, and as early at least as the ninth century." (P. 336.) But we would refer the reader for much other interesting matter connected with this subject to the work of this gentleman, whose opinions on the origin of the greyhound, we cannot but feel gratified, are so much in unison with our own; and that the progressive improvement of this dog from the Celtic *vertraha*, through the grades of Irish and Scotch strong greyhound to the elegant courser or long dog, seen in its highest form at our great coursing meetings, so closely tallies with our own conclusions formed and stated several years ago.

1892. *The true Canis Leporarius, or greyhound*, we must remember, under all the surmisings on this somewhat occult subject, was not cultivated until after the time of the elder Xenophon. We therefore consider it as proved, that however dogs derived from the *celeres* might have been used in ancient Greece, &c. under the names of deerhound, wolfhound, &c. that the true greyhound type of dog was not cultivated as a distinct breed in Greece, at least until after the period stated. It is true, authorities of no mean note, both sacred and profane, appear to have encouraged a belief in a more early existence of the *vertagus.* Among the former Solomon is quoted, who in his *Proverbs* (ch. xxx. v. 30.) is thought to allude distinctly to the greyhound "as one of the three things which go well," the lion and the he-goat making up the trio. The marginal notes to the English version rendering this term greyhound by the expressive figure of "girt in the loins," or *accintus lumbis,* would certainly give a colouring to such a conclusion. But when we reflect that hunting with dogs is no where alluded to in the sacred page, we must incline to the opinion of the learned Bochart, in his *Præfat. ad Lictorem,* and that of the ingenious annotator already quoted, that the horse was much more probably the subject referred to.

1893. *The earliest notices of the greyhound,* it is probable, are those met with in the *Metamorphoses* of Ovid, i. 533., vii. 781., and in the *Poem on Hunting* of Gratius the Faliscan. Slight mention of the *Canis Gallicus* and his coursings, is also to be found in the writings of Martial, Julius Pollux, and Oppian, as well as in the *Cynegeticon* of Nemesian, which appeared towards the close of the third century, where the form of the greyhound and the arts of breeding, rearing, and feeding of this dog are treated on somewhat at large. It strikes us, however, that our neighbours the French are to all appearance but little grateful for, or even sensible of, the honour done them by the greyhound in borrowing his patronymic from their country: indigenous as he is considered to be to Gaul, is it not remarkable, not only that hare coursing is but little practised at present in any part of France, but also that the old authors of Gallia offer but little notice of its ever having been a favourite sport there? unless, indeed, the following method, practised more than two centuries ago, can be so called. "The French," says Turberville, "use their greyhounds only to set back sets, or recoytes for deare, wolfe, foxe, or such like; whereas we here in England do make great account of such pastime, as is to be seen in coursing with greyhounds at deare, hare, foxe, or such like, even of themselves, when there are neyther hounds hunting nor other meane to help them." Coursing, according to our present acceptation of the term, with the true Gallic dog, or *Canis Leporarius,* is seldom even mentioned in their cynegetical works. The writings of Jacques du Fouilloux and Jean de Clamorgan, it is true, make mention of the greyhound, but it is only as employed in chasing the wolf, fox, deer, and such like prey. In the *Venerie Normande,* and in the *Traité de Venerie* of D. Yanville, hare coursing is not noticed even; and, strange to say, the volume of the *Encyclopædie Méthodique* now lying befores us, although entitled *Dictionaire de Toutes Espices de Chasses,* does little more than glance at the sports of the leash. A bastard species of French coursing, if it be not a disgrace to the leash so to call it, is noticed by Turberville, and was probably derived from an ancient Celtic practice, which was to try for a hare while the company was standing apart with greyhounds, which were thus ready as the hare broke cover, on being slipped, to pounce on her.

1894. *Our own opinion of the origin of the greyhound* we have already hinted at, but without flattering ourselves that we have done any thing of consequence towards removing the veil of obscurity which hangs around the subject; and when we consider that it is yet a disputed point whether dogs themselves are original animals, some contending that they are wholly factitious bodies, compounded from the intermixture of other nearly allied groups, it must be evident that the originality of any individual variety can have little chance of being satisfactorily cleared up. We observe that zealots, in the admiration of the greyhound, would invest him with a descent more than patriarchal; nay, one might suppose that he had at once, by a Promethean touch, blazed forth on the astonished sportsmen of the earliest times in his present form and with his present attributes. Among these zealots for the originality of the greyhound was Mr. Thacker, whose writings on the subject of coursing, and whose critical notices on the practice of it, must make his memory respected by every lover of the leash. We also admire the greyhound most unfeignedly, and have cultivated the breed with much delight; nor shall we ever forget the long dogs of our kennel when we lived at Tollesbury Lodge in Essex, and rented the sporting rights of the extensive tract of marsh land which appertained to Philip Bennet, Esq. In particular we cherish the memory of a blue bitch got by the celebrated Millar, a very famous Essex dog, the property of the Rev. Bate Dudley, and also that of a small black bitch, a cup winner at Swaffham; of the performances of which dogs the Rev. Mr. Daniel, a sporting author of celebrity, was more than once an admiring witness. Under these circumstances it may be supposed that we would not willingly asperse this favourite of Arrian; but we are even less willing to offend what we consider the cause of truth. We are constrained, therefore, to differ from Mr. Thacker's opinion, that greyhounds existed *ab origine,* as his pleadings would seem to insinuate; yet we know him as a talented writer, and we respect his zeal, and expend an approving smile on his warmth in defence of his favourite, which, as he acknowledges, he "would be at great pains to vindicate from the imputation of ignoble blood." He was therefore angry with the authors of *The British Sportsman, The Complete Farrier, The*

Courser's Manual, &c. who "mistake (he says) the greyhound for the gazehound," of which, he observes, there are two sorts; each however, in his opinion, being a variety distinct from the greyhound. We crave pardon of this eminent courser, once our valued correspondent, when we confess we are forced to differ from him on this point. We really have so much respect for most of his opinions on all matters connected with the long dogs and their properties, that on every other opinion, save this one, of the complete originality of the greyhound, we should hardly venture to differ with him; but regarding this dog in his present state as gifted with surprising powers of speed and sight, but of poor scent, we cannot think of him as entirely original. Mr. Thacker, like ourselves, was an admirer of the author of the *Translation of Arrian,* but he would not, we think, find among all the critical remarks which grace the translation hinted at, one which would bear him out in his seeming assumption of the complete originality of the greyhound as unconnected with any other variety of dog. Were we to grant him that the portrait of Arrian's Hormé 1700 years past, and that of the Ovidian *Lælaps,* said to have been formed in brass by Vulcan, and afterwards animated by him, are represented as similar to the modern greyhounds as any two animals can be to each other, we should then only grant that artists can flatter in some instances. We ourselves could place against such representations sculptured relics of early greyhounds that differ most materially from these. The ingenious editor of the *Stud Book* offers sufficient proofs of his attachment to the "long dogs;" and yet what does he say on the early likenesses of the greyhound which usually accompany the effigies of Diana, that "although outrageously flattered they are as inferior, however, in make and symmetry to the modern greyhound, as the hog-named, top-heavy cobs, which served as Hobson's choice of models to Phidias and his brother sculptors, were to Sorcerer and the Darley Arabian" (*fig.* 287.). We, however, do not rest our dissent as to the originality of the greyhound on these proofs alone; but while we respect the warmth with which Mr. Thacker pleads the cause of his favourite, we must be allowed to remain somewhat sceptical on this opinion, that "The greyhound becoming so much finer by time, climate, and admixture only with its own species, is not within the bounds of probability." Surely this gentleman, whose observations on breeding of greyhounds are so excellent, and who so often hints at the evil consequences of a bad cross, and the beneficial consequences of a good one (we mean of both within the kind), would not deny that the most surprising alterations may be effected in the form and qualities of all domestic animals by the agencies of judicious intermixture, selection of parents, appropriation of food, alteration of temperature, and restraint to particular habits and exercisings. Mr. Thacker's was a mind apparently of no ordinary calibre, but even such a mind may become a little warped by strong predilection. We are, however, so certain that this gentleman sought truth only, that we will rest the non-originality, or the complete originality, of the greyhound (as entirely independent of the other scions from this root) on a simple question,—Did Mr. Thacker think that any dog, with the form and qualities of the greyhound of the present day, could have subsisted on his own resources?

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DIANA CACCIATRICE.

1895. *Of all the dogs we possess, the greyhound is the most helpless, and the most artificial;* he is also more difficult to rear, and more obnoxious to disease, than any other; and if we wanted more proofs of his mixed descent, we should find them in his very moderate share of instinctive powers, and in the absence, in a great degree, of the sense of smelling,—unless this can properly be ascribed to his being little used for predacious scenting. From some remarks of our friend we are led to believe, that he conceives the greyhound was *especially made for coursing the hare!* "It may be doubted," he says, "whether nature did not provide the greyhound with a longer tail than other dogs, as a means of assisting him in turning; a matter so essential to him in his contest with the hare." The paragraph from whence this is derived (vol. i. p. 80.), which is employed in arguing this opinion at large, and ingeniously too, concludes thus:—"If I am right in this supposition, the greyhound being provided by nature with a longer tail than other dogs, confirms my original position, that the greyhound was designed by the Creator to contest with the hare." The friends of Mr. Thacker, we hope, will pardon us when we ask, "Whether his position, as it stands, does not partake more of an argument of necessity than of demonstration? Does not nature usually go the nearest way to work in compassing her ends?"

1896. *The hound,* or at least a dog formed for hunting, as well by scent as by sight, existed without doubt from the beginning of animal creation. In him means of offence would be perfect as far as regarded his own immediate preservation, and the application of those powers would result from his instinctive aptitudes to predacity. If the dog be by nature an animal of prey, there must of necessity be animals to prey upon; but to prevent these also from becoming extinct, the means of offence in the former, and those of defence in the latter, must be in a *certain proportion* on a par, to prevent complete extermination on either side; and such equality we do really find to be kept up throughout animated nature. Some escape by the rapidity of their motions; the dog is therefore, by nature, a speedy animal; but by nature he is not so much so as wholly to destroy the balance of power between the pursuer and the pursued, which would in a great measure have been the case, had the greyhound type been the original one from the creation. But the locomotive powers of the scenting hound type, which may be conceived to be not far from the original, being not such as to enable him always at the first rush to secure his prey, he is further gifted with olfactory powers to guide him, not only in the track of such animals as have escaped his first rush, but also to direct him in his search for the same animals in their retreats, fastnesses, and hiding-places. Many of the smaller animals preyed on, seek subterranean retreats, as the rabbit does in most countries, and as the hare varieties, &c. &c. also do in some others. In these instances the powers of the dogs of prey are successfully employed in digging out the refugee. Reverse the picture, and consider the position which the greyhound would occupy as a child of nature. His efforts must be entirely confined to the plain; but even here his prey could see him in sufficient time to escape by flight, or otherwise they would seek refuge in burrows, or other underground retreats. In such cases it is evident that the length and weakness of the phalanges in the greyhound would baffle any exertions he could make to reach such prey. Limited, also, as are his scenting powers, he would in covert be greatly puzzled; for he could not *wind* out the lurking game from among the tanglings of high grass, or the intricacies of the thicket, with accuracy and certainty.

1897. *The greyhound cannot therefore be considered as an original animal,* without outraging our faith in the uniformity of nature's proceedings. This admired breed is, without doubt, of great antiquity; but this, like every other scion from the canine root, be it what it may, originated from sundry modifications effected by means of the various agencies to which we have had so many occasions of drawing the reader's attention. As man diversified his own predacious habits, as well to gratify his love of change as his love of gain, so he would, by the arts of culture, attempt to diversify the means by which a change in his venatorial practices could be effected; and we know that the human powers judiciously applied are almost unlimited over the animal frame, as we see in so many instances, and in none more than in the dog. Experience must have convinced the early races of man of the existence of such powers, and without doubt they turned them to their own purposes, as either fancy or necessity directed. When man had accumulated around him flocks and herds, whose produce prevented the necessity of seeking a quotidian meal from his mixed huntings, as at force, by gins, pitfalls, &c. &c. he then probably became fastidious; and when he hunted, less from necessity than for amusement, he would be naturally led to vary his venatorial practices. Selections would be made from those dogs which exhibited sufficient lightness of frame to enable them to compete with the smaller deer, the wild goat, the fox, jackall, hare, &c. &c. by coursing in sight, instead of employing numbers in a more lengthened pursuit by scent. Such an origin we may very naturally attribute to the first greyhound types, and we have already shown how the increased tenuity of form might be acquired; but we again call attention to the fact, that it was ultimately acquired at the expense of the scenting powers. This change was not effected at once, its gradations were therefore not marked; nor has history recorded the physical phenomena connected with it in the order of their occurrence. But increased information has enabled the moderns, by analogical reasoning, and by such faint gleams as penetrated the almost obscure records of early venation, to satisfy themselves *that the greyhound form is the effect of cultivation.* We could cite many instances of alteration of figure, size, and aptitude, among animals much greater than that of the greyhound, from the wolf, the jackall, or the wild dog itself, as members of the genus *Canis.* What has brought about the monstrosity of the bull-dog, pug-dog, and the minute cosset of Spain, of scarcely four inches high, but the artifices of man acting on some accidental deformities which he was led to propagate, and still further to increase, by a continued selection of deformed parents? What is the ancon, or dunkey breed of sheep, with bent legs, or the wry legged terrier of the woodland territories, used by the rabbit shooter? What are these but cultivated monstrosities, which, were they placed in a state of nature, must starve, and the greyhound with them? There are, in fact, hardly any alterations in the size, figure, and the outward coverings of animals which man cannot vary at his bidding. Nothing in the frame is fixed, but the number and general connection of the bones.

1898. *Mr. Thacker appears to lay much stress on the originality of the greyhound,* from the invariable fineness of his coat, and the length and tapering proportions of his tail, which he appears to consider as peculiar characteristics of this breed, which definitely separate this dog from (as we think his primogenitors) the Scotch and Irish greyhounds. But a smooth coat and a fine tail are not necessary to constitute the true *Canis Leporarius;* locality, on the contrary, is one of these agencies which, without the aid of man, alters the outer coverings, and varies the contour of the frame. The smooth coat of the greyhound cannot be perpetuated in northern climates, unless the dog himself is kept stoved in artificial heat, and it is done with difficulty even then. In the Levant, also, long coated greyhounds are common; but these varieties, bending to the agency of an increased temperature, are furnished with hair, not strong, nor crisped and curled like the northern spaniels and the Highland greyhound, but, on the contrary, of a soft and silky texture. In Laconia, also, Mr. Hobhouse informs us that he frequently met with these long haired greyhounds, and, if we recollect rightly, they were said to be excellent hare killers, and true to their sport. In Persia and Arabia a still more singular variety of the greyhound is not uncommon; in these the body is smooth and the coat very fine, but the ears, legs, and tail, on the contrary, are fringed with long but very fine soft hair, which hangs after the manner of that of our setters (*fig.* 288.). Some years ago two of these elegant animals were sent to us for our inspection; but in them the silken tresses of ears, arms, and tail, were much longer than in our figure. The dogs sent to us were symmetrically formed, and in height about the usual standard of our own greyhound breed, but somewhat stouter; since which time other specimens have been sent to the Zoological Gardens. Major Keppel also, as he informs us in his travels, met with greyhounds between Bussorah and Bagdad, somewhat smaller than our own, which had both their ears and tail covered with long silky hair. We have in these dogs a proof, that neither the length nor the texture of the coat affords any determinate criterion, either of the purity or the degeneracy of the breed in the greyhound. In the Levant the agencies of climate beget a long and fine coat. In Scotland climateric influences produce a coat less lengthened but more crisp and wiry.

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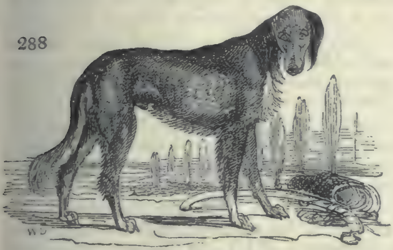

PERSIAN GREYHOUND.

1899. *The length and tapering proportions of the greyhound's tail* are certainly not proofs of his originality, although some patrons of such a view of him lay great stress on the length and tenuity of the tail, as an assistant of the formation purposely given him to compete with the hare. We do not deny the agency of the tail as an assistant of the rudder kind; but as there are proofs in existence that his power of rapid turning is little lessened by decurtation we must abstract any specialty of tail from the weight of argument in favour of the originality of this dog. The lurcher, as every one knows, is often a tailless greyhound, or when not full bred, he has three-fourths, or four-fifths, of the greyhound breed in him. To save appearances, however, his tail is almost always cut off; but it is known that he can yet run so well as to be a match for *some* old hares, and for *most* young ones; and it is because he can do this, that he is a favourite with small farmers and poachers. But what is much more to the point we aim at is the fact, that Lord Rollo had a brindled greyhound dog, which was celebrated as an almost certain killer, and particularly remarked for the readiness of his turning himself and game; yet this greyhound had only a stump of a tail four inches in length. We shall conclude this part of our subject by cheerfully saying that, while we differ from Mr. Thacker on the points just noted, we honour his honest warmth in advocating the cause of his deserved favourite, and we acknowledge that he has leaded its merits and pretensions with great ability. In the cause of what we consider the ruth, we are sure he would not wish us to blink so material a point as a direct inconistency in nature's works; we may differ, but truth is what we both have aimed at.

1900. *The direct origin of the Canis Leporarius, or greyhound of our times,* — may it, or may it not receive illustration from the eastern varieties? They themselves follow the limateric influence, without doubt, like the horses of the same localities, which are smaller n size, finer in coat, and more swift than the native breeds of northern countries. The Italian greyhound must also owe much of his diminished bulk to the influence of climate, hough some of it may be attributed to the judicious selection of parents, and to in-and-in reeding, which, when long continued in the greyhound race, appears to diminish the rogeny. Scotland, on the contrary, a more northerly locality, has been long celebrated for ts greyhounds, which are known to be large and wiry coated. These are probably types f the early Celtic greyhounds, which, yielding to the influences of a colder climate than hat they came from, became coated with a thick and wiry hair. In Ireland, as being nilder in its climate, the frame expanded rather more in bulk, and the coat, although not ltogether smooth, yet was less crisped and wiry. In both localities, there being at that ime boars, wolves, and even bears, powerful dogs were required. In England, these wild easts were more early exterminated; and, consequently, the same type of dog was not ept up here, but, on the contrary, by culture was made finer in coat, and of greater tenuity n form. The subject, it must be owned, is beset with difficulties; the dark ages destroyed very link in the chain of written, and even of traditionary, knowledge; intestine wars and universal fanaticism prevented the spread of either. Impressed with a consideration of our confined limits, we feel that we have extended our observations beyond their due bounds; but as match coursing is become a very popular sport, and the breeding and training of greyhounds, consequently, a matter of much importance, we hope we shall stand excused for thus trespassing on the patience of our readers.

Sect. III. *The early English Greyhound.*

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EARLY ENGLISH GREYHOUND.

1901. *We have already presented what we consider the type of the early greyhound,* brought into Britain by the Celts (*fig.* 286). Distribution, however, gradually effected changes both in his form and covering. In Scotland and Ireland his bony form and rough coat marked him; in England also he was seen as a large, bony, gaunt animal, less rough certainly, but with a coat of coarse texture (*fig.* 289.). He was, at those times, employed in coursing the largest animals, as boars, bears, wolves, &c. as long as the country afforded them. When these disappeared, and there was less required from his strength, but more from his quickness of motion, as already hinted at, he was bred somewhat finer, and was then much employed in fox coursing, in those days a very favourite diversion. (See *Early History of Fox Hunting*, p. 381.) As the hare in its turn likewise became a prominent object of pursuit, the figure of the greyhound assumed even a somewhat more attenuated appearance, that his speed might be increased; but the system of hunting at force being not yet wholly abolished, he still remained a strong bony animal, as represented in our cut. We have already stated that the introduction of the greyhound into Britain appears to have been brought about by the Scots themselves, a Celtic tribe, which, having emigrated into Ireland about the third century, eventually extended themselves over the western islands, and finally possessed themselves of the land of the Gael or Gaul. This being premised, it remains for us further to remark, that the author to whom we owe so much, in his continuation of the subject from this point, notices the distinctions made, the descriptions given, and the opinions formed by naturalists, of the greyhound type of our own islands; and has further employed himself in endeavouring to trace, in a satisfactory manner, its connection with Gallia Celtica. The greyhound of Great Britain, it is very notorious, is branched out into sub-varieties, which are named according to their localities, as the English, Scotch, and Irish greyhounds; none of which, as we have heretofore noticed, does the authority we allude to believe to be originally native to Great Britain. The intimate connection between these several varieties of the greyhound we have long ago advocated; we cannot, therefore, see our own opinion coincide with that of this authority without gratification, particularly since we have felt ourselves called on, in the cause of truth, to differ from several, but particularly from one very respectable writer on the subject.

1902. *The credit of the organisation of the sport of hare coursing*, and the cultivation of the greyhound, are without all doubt the undisputed property of the English: we say the *organisation* of the sport was our own, while we do not deny that it originated with the Gauls (at least they practised it before we did, as will appear by referring to page 88., and consequently they must have cultivated the greyhound also, but it was to a certain degree only); and the representations of their coursing dogs approximate in character, some to that of *fig.* 286. and others to *fig.* 289. Our rude Celtic ancestors, and our equally rude Saxon and Norman masters, who, soaring at higher but coarser sportings, made use of their greyhounds in common with other dogs in the pursuit of bears, boars, wolves, &c.; and this hunting at force was likewise pursued with the addition of weapons of sundry kinds, and with ambushings of every sort, which method of using the greyhound was continued for a considerable period. As regards the Normans, probably the most sporting people in the universe, their time appears to have been wholly occupied in hunting and coursing; and, as well observed by Mr. Johnson, "They went to the field, or rather to the forest, on horseback, armed with bows and arrows, and other weapons, and attended by a great retinue. The game was roused by the dogs, and shot at by the sportsmen, as often as opportunity offered; a considerable space was, on some occasions, encircled by toils or nets, and a sort of indiscriminate slaughter ensued of the various animals thus inclosed. The stag, the wolf, and the wild boar, constituted the principal objects of pursuit; and though there was no scarcity of foxes, yet these animals, which at present afford a species of diversion which leaves all other field sports at an immeasurable distance, were little attended to by the sportsmen of the remote period now under contemplation: the reason is evident— the chase of the fox was not understood, nor yet adapted to the state of the country; and though we now regard the pursuit of this animal as far preferable to any other chase, it is owing almost entirely to the different aspect which the face of the country presents, that it stands so deservedly high in the estimation of modern sportsmen. When the early Normans followed the chase in this country, the game, it is true, was roused and pursued by the hounds, as I have already observed; but it generally received its quietus from the hand of the sportsman, either by means of the arrow, the spear, or other weapon with which he was prepared for the purpose. Under such a system of the chase, a fox would appear scarcely entitled to attention; nor would he indeed form a mark sufficiently conspicuous for the arrow or the spear; and therefore, upon a transient view of the subject, it will seem no way surprising, that he was little, if at all, sought after by the old Norman sportsmen." (*Hunting Directory*, p. 13.) Ancient history informs us that the Anglo-Saxons, less humanised and less wealthy than their successors, pursued the bear, wild boar, wolf, and stag, also on foot, armed with missiles of every kind, and relays of scouts in every direction, assisted by dogs of divers sorts and sizes, as the mastiff boarhound, the fleeter wolfhound, and the strong greyhound of that time, two or three of which latter were of themselves equal to pull down any of these animals, and to detain it until the more powerful varieties came to their assistance.

1903. *As the extirpation of the bear, the boar, and the wolf*, which followed the increase of the inhabitants of our island, became consummated, the stag took the place of them, and long remained the favourite object of the courser; and during this period, as may be supposed, the culture of the greyhound would be so directed as to unite in his person accelerated speed, but leaving as much height and strength as would enable him as well to pull down and retain his prey as to overtake it. When deer became less plentiful, the fox was the animal substituted for coursing; and the sport of fox coursing became very popular, and was entirely pursued with the strong wire-haired greyhounds of that period, descended from the stock of Scotia, and not yet reclaimed to that attenuation of form and fineness of coat which marks the modern long dogs of the acknowledged true English greyhound. On the remote as well as the more immediate origin of the greyhound, we have essayed our best endeavours for the reader's information. Arrian, it is evident, is our principal guide in tracing his early history, as his erudite translator and commentator conducts us in our view of his after progress until the present time. Nor can it fail to strike the attentive reader, amidst all the difficulties which surround this subject, and the conflicting opinions which have been offered on it, we see none so rational as this of our literary courser, according as it does with the few historic gleams which have penetrated the darkness of the barbarous ages. Further, if to what has there been stated there be added the probabilities of intermixture with those whose figure has yielded to the effects of the increased temperature of the east and to its arid soil, we shall, in all probability, long look for a more likely solution of the difficulties which have surrounded the origin of this highly prized hound.

1904. *The cultivated English greyhound* (*fig.* 290.), exhibits a model of elegance and a combination of symmetric proportions, probably unrivalled by any other animal but the race-horse. The perfection of the mechanism for speedy progression is apparent throughout his structure. Whether we regard his organs separately or conjunctively, they are admirably adapted for vast powers of locomotion: nor can we view him without being struck with surprise at the great alterations which can be effected in the animal frame by culture; for no naturalist could by possibility be made to believe that the greyhound form, coupled with the peculiarities which attach thereto, could have originated in nature. The peculiarities we allude to are the compensations which nature always exacts on all forced improvements. In the greyhound this compensation for the increased speed brought about by artificial means, consists in deteriorated powers of scent, and the abstraction of a portion of general intelligence. On the most admired and approved form of greyhound, the ancients and the moderns are agreed as to all essential points. As might be expected, however, the moderns have proved themselves more nice in some particulars, and hence has resulted most of those finishing touches which adorn the figure of the modern high-bred greyhound. These assertions will be borne out by placing the ancient and the modern figures and descriptions in juxtaposition.

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GREYHOUNDS OF THE PRESENT DAY.

1905. *The head of the greyhound is strikingly beautiful.* Arrian observes, "it should be light; but whether the nose be hooked or flat he appears indifferent about: but the nostrils should be wide, and not blunt, in their termination. Xenophon greatly disapproves of hook-nosed hounds of any kind: also the *Mayster of Game* would have for his "greihounde a longe hede and some deleymakyd in the manare of a luce, a good large mouthe and good sesours the on agein the other, so that the nether jawes passe not him above, ne that thei above pass not hem by nether." Markham also observes that the greyhound head should be fine, long, and lean, with a sharp nose, rush grown from the eyes downwards. Cultivation has here exemplified its powers in a surprising manner, by a considerable fining and elongation of the whole head; but while this was taking place, and the animal was becoming thence more capable not only of overtaking its prey, but also of seizing it, the animals to be seized were to a certain degree compensated, and a balance was struck between additional powers given and former ones, either wholly taken away or otherwise much modified. Thus by attenuating and lengthening of the head of the greyhound, its internal cavities became necessarily contracted; the frontal sinuses were thereby much diminished, and with their decrease of surface the scenting powers of course decreased also; the cranial cavities likewise diminished, and with that a lessened volume of brain ensued, which of necessity proved unfavourable to a full development of some organic functions, and also of those higher traits of what may be justly called intellectuality. Captain Brown, though an eminent naturalist, we consider to be somewhat in error when he says, that the frontal sinuses in the greyhound are totally obliterated. We have never found them totally absent in any one subject we have examined; and we think him equally mistaken when he attributes this obliteration to the contracted state of the greyhound's abdomen. The abdominal contraction, in our opinion, results here, as in the race-horse, from the absorption of all interstitial and other spareable matters, brought about by strong exercise, stimulating and condensed nutriment. Of the ears Arrian says, "let them be large and soft, so as to appear from their size and softness as if broken;" but he does not object to their standing erect, provided they are neither small nor stiff. We cannot unite in the toleration of either a large or a prick eared greyhound, the sustaining cartilage of whose ear should be more of a uniform cone throughout its whole extent, like that of the horse. Arrian's translator very justly remarks,—"The modern courser prefers the small ear, as do all others of our countrymen, we believe, from Markham, who recommends 'a sharp ear, close and falling.'"

1906. *The form of the greyhound's neck* is thus expressively described by Arrian:—"It should be long, round, and flexible, so that, if you forcibly draw the dogs backwards by their collars, it may seem to be broken, from its flexibility and softness." With a general extension of all the parts of the body of the greyhound, it is not to be wondered at that all coursers, ancient and modern, insist on these cervical proportions. A long head and neck are necessary to enable the greyhound to lift his hare with certainty and without extreme stooping of his body, which might bring him down with injurious force, as we have ourselves seen happen where the head and neck have been short. On the contrary, the courser must often have been struck with the seizure of the hare from the ground by the long reached dog, and how artfully, to restore the equilibrium, he lifts it aloft while he is checking his rush. When this happens sufficiently near for full observation, we know of few sporting moments and momentary actions that equal these. Wynkyn de Worde, who wrote in 1496 on coursing, observes, "A greyhounde should be heeded lyke a snake, and neckyd lyke a drake." De Langley would have "the neke grete and long, bowed as a swanne's neke."

1907. "*The eyes of the greyhound*," Arrian says, "should be large, up-raised, clear, and so strikingly bright as to flash with fire." He notices black as a commendable colour of eye, and observes of grey eyes, that they are not bad provided they are clear; of which kind were the eyes of his beloved Hormé. Xenophon, we see, condemns blink eyed and grey eyed hounds; Oppian, however, is not averse to light eyed dogs, but on the contrary prefers these eyes to all others; and the translator of Arrian tells us, in his admired publication, that he has himself known many azure eyed dogs of great merit. (P. 78.) De Langley would have them red or black; Markham full and clear with long eyelids, not having, as we believe, satisfied himself as to the preferable tint. Mr. Thacker has not thought fit to express an opinion about the colour of the eyes, as a criterion of excellences or deficiencies; and, for ourselves, we think that it may be safely laid down, that, if the eye be full, round, and clear, it matters not what is its colour.

1908. *Of the fore parts of the body of the greyhound*, Arrian asserts that broad chests are to be preferred to such as are narrow: the shoulders also he would have stand wide apart and loose, and free from each other. We will, however, take this opportunity to continue Arrian's description of a greyhound of proper form throughout, to avoid repetition. The legs he would have straight and well jointed; the sides strong, the loins broad, firm, and sinewy, but not fleshy; upper flanks loose and supple; hips wide apart, and the lower flanks hollow: the tail should be fine, long, and flexible, as well as hairy throughout, but most so towards the tip; haunches firm and sweeping are also commended. We will now continue our own examination of the points of the greyhound in the order of their succession; and will first remark, that on the subject of the broad chests we differ somewhat in opinion both from the ancients and such moderns as patronise very broad bosoms. The front aspect of the chest without doubt should be sufficiently broad to offer ample attachment to the motive muscles of the limbs, and the respiratory muscles of the chest; but all extension of surface beyond this increases the resistance offered by the wind, and also adds to the weight of the body. Mr. Thacker, however, seems to favour a contrary opinion, at least he favours a wide spread of the shoulders, which is consequent to a broad chest; and what he says on the subject deserves consideration: — "With respect to their shoulders standing wide apart," as Arrian observes, 'not tied together, but as loose and free from each other as possible,' "it is a matter well worthy of attention, as without that they lose much ground in turning, besides distressing them the more; and he might have added, the looser they are just behind the shoulders the better for that purpose, and without any disadvantage to their speed in straight forward running, but rather to the contrary." (*Courser's Companion*, vol. ii. p. 93.) On what follows we agree with him wholly:—"The blade-bones should incline inwards towards each other, as they rise upwards; and many very fleet and good ones, I have observed, have a slight inward curve towards the tip: the more the blade-bones incline backwards to the chine, the greater facility they possess of getting their fore-legs forward, and of projecting them further out to take a longer and quicker stride." (*Loc. cit.* p. 104.)

1909. *The shoulders of the greyhound*, the *Mayster of Game* would have to be fashioned like those of a roebuck, and as a model for rapid progression by saltation, he could not have chosen a better. The progression of the greyhound, however, would be more appropriately likened to that of the race-horse, both anatomically and mechanically viewed. Nor would a comparison with the hare itself have been inapt. In the greyhound, hare, and horse, the scapula presents a broad surface for the attachment of a large mass of muscular fibre. In each of these animals it is obliquely placed, and on the degree of the obliquity of its attachment depends the extent of its operation forwards and backward: now, as the angle formed between the shoulder blade and the arm, and that between the arm and the fore-arm, are consentaneous in effect; and as when acting they constitute a kind of bony arch, it follows, that on the degree of obliquity of their placing, depends the *extent* of the action of the whole limb, consequently broad, deep, and obliquely placed shoulders always bespeak a great extent of stride in the fore limbs. For a more full elucidation of the mechanical effects resulting from the form of the shoulders, we would refer to what we have offered on the *Exterior Conformation of the Horse*, p. 260. We agree with Mr. Thacker, that the spirit of enterprise, and the dexterity of the act by which the greyhound darts through a small meuse, is greatly assisted by "the lightsomeness of his shoulders," by which he can project his fore-legs straight forwards. At such times, placing his head and neck between his legs to lessen resistance, his impetus carries him altogether through the minute breach, much in the same manner as harlequin at a pantomime throws himself through an opening scarcely fifteen inches square in the stage scenery; or as the swimmer who, ere he makes his plunge, throws forward his arms, bows his head between them, and then cleaves the wave.

1910. *The fore-legs*, we are of opinion, are more important organs in the greyhound than many a courser imagines. We knew a very reputed one who used to say, "Give me a good pair of haunches and strong thighs, and I care little about fore-legs." There was much flash in the assertion, though in his case some showing also, for he owned a very killing dog with a very odd pair of fore-legs, rendered so by a curious turn-out of the elbows, contrasted by a slight turn-in of the knees. This deformity was, however, so counteracted by tremendous haunches, large thighs, and low placed hocks, that his feats produced an opinion in his own immediate circle, that the fore-legs had but little to do in killing a hare: few of our readers, we suspect, will be of the same mind. Mr. Thacker was not likely to be one of these non-sapients; on the contrary he says, "It is necessary that the fore-legs be very good, well set on at the shoulder, not out-elbowed, as such are not only clumsy, but are also easily liable to become stiff or lame; their legs bony and straight, and well set on the feet, which, all writers agree, should be round and cat-like; I have, however, seen very fast greyhounds, where the feet themselves have been good, their legs good also, yet turned their toes out: no one would think of breeding from such, as where there is a natural deformity, that deformity or defect will generally increase in the progeny." (P. 102.) Many greyhounds, he also very justly observes, have long straight fore-legs, but which are deficient in muscular substance in the arm or upper part of the fore-leg; and he offers some instances in which he had predicted the indifferent figure which such dogs actually made in the field by this defect alone. The part of the limb Mr. Thacker alludes to is properly the fore-arm, but we make no doubt that this "hawk-eyed" gentleman, as he has been called, would as readily have detected a narrow and ill furnished *true arm*, which is the part between the point of the shoulder and the elbow. Unless the bone of the true arm be long, the stride will be contracted; and unless its muscular masses be large and firm withal, its reaches will not be effectively repeated either in quickness or force.

1911. *The fore-arm, or portion of the leg between the elbow and knee,* we repeat, should be long, straight, and muscular, and these are essentials in the formation of a winning dog. Of what consequence length of fore-arm must be to the speed of the greyhound when running, we may satisfy ourselves by considering that, provided at each stroke of his gallop half an inch only be gained, the accumulation in a long course may turn the scales in the end, decidedly in favour of the dog who is thus formed. Further, as the whole portion of the fore-legs, which is below the knees, acts only as a spring to prevent concussion — that is, it acts this part only when receiving the hind parts thrown on them, when it does nothing towards increasing the length of the stride — consequently the advantage of a long fore-arm, particularly when assisted by a very low placing of the knee, must be apparent. It is likewise impossible to regard the proportions of the hare without being struck with the length of this part in its fore extremities, and of the end proposed by such specialty.

1912. *The cat-like foot,* or, as Markham has it, a fine, round, full cat's foot, with strong cleyes and tough soles, conveys a sufficient idea of the form which it is desirable the foot of the greyhound should possess; for though the canine claws are not retractile like those of the feline race, the arched phalanges and the under padding of the foot of the cat present much of the form which every sportsman admires, and which every naturalist recognises as both a support and an assistant in progression. The splayed foot detracts from the speed of a dog, and even the loss of a claw is injurious to it; on the other hand it must be taken into account, that no greyhound's foot should, nor indeed can, be so ball-like as that of the cat, or it will not be able to take that firm hold of the ground which is necessary to steady the body previous to its propulsatory efforts; for at one moment of the action the fore-feet must form a steady and firm support for renewed effort. What we mean by the impossibility of the foot of the greyhound being so contracted or ball-like as the foot of the cat is, that the claws of the cat being retractile, and those of the greyhound not, the cat only can present a complete ball-like foot. Had the phalanges and claws of the greyhound been modelled after the foot of the cat, a firm hold of the ground could not have been taken in progression. We should not have said thus much, but for the purpose of illustrating the necessity of weighing these imperative dogmas by just principles.

1913. *On the form of the back and sides of the greyhound.* Markham, as speaking the opinion of the coursers of his day, would have the back somewhat of a square form, with short and strong fillets. In the *Countrey Farm* he says, "A long, broad, and square beame back, with high, round fillets, deep, swine-sided, with hollow bended ribs." On the strength of the back, when coupled with length, and yielding only to a very light and elegant inward incurvation, few will disagree. Length, though not in all, yet in most cases, is more to be desired than the figure of the shorter and home trussed dog. Mr. Thacker justly observes, "It is the strength of the back which is brought into requisition in particular in running over hilly ground; and here may be said to rest the distinction between long or short backs, supposing both to be good and strong: the more lengthy the back, and proportionately strong, the more he is calculated to beat the shorter backed dog on the flat; but on hilly ground, one with a shorter back will have an advantage. The longer backed ones cannot buckle and unbuckle so quick as the shorter ones; this quickness on hilly ground, as compared with flat ground, is more requisite than length of stride: besides which, the shorter dog has more power to raise himself up to mount the hill than the longer one: to bring his hind-legs forward, the extreme ends of both fore and hind quarters act as a lever against his middle, in the inverse ratio to a lever lifting a weight by a long purchase, and the longer the lever the greater the purchase against him; consequently, the longer the back, the longer the lever against his other powers called upon to resist it." (Vol. ii. p. 92.) Length of back is, without doubt, in favour of quick turning; and when we were used to course in company, we always maintained this opinion, though we were frequently contradicted, and sometimes somewhat staggered by seeing a short trussed-up dog making his turns very quickly, and bearing the hare from a long one. We, however, coursed long enough to retain our opinion in favour of long backs generally, provided such a back was united to strong loins and wide spreading thighs: nor is length of back less essential to enable a dog to turn quickly, though some suppose that a short backed dog, with a good loin, has the advantage. As Mr. Thacker properly observes, a certain flexibility in the back, which admits of its being brought into a curve, is desirable; and the longer the back, the greater will be the curvilinear direction; and we may add to the benefits of length in the back, that it must admit the shoulders and fore-part of the body more readily to bear towards the hare, and by so doing be better prepared, by the next effort, to complete the turn. It is well observed by our coursing Mentor, that the curve is formed in one effort, be the back long or short; and that this question is distinct from that of whether one dog goes with greater velocity than another, and the consequent further overshooting the hare: for a short backed dog may fling himself at the hare with a velocity equal to a long backed one; in which case the long backed one will turn and recover himself on his legs straight after the hare in less time than the short backed one. A long backed horse will turn in less room than a short backed one." (Vol. ii. p. 95.)

1914. *A deep chest is a most essential point in the greyhound,* for without it full respiration cannot be carried on, and without the vital influence which aërated blood conveys in large quantities, powerful exertions cannot be continued. A deep chest also gives surface of attachment to large muscles, and in proportion as it is deep, there is less necessity for extraordinary circular expansion of carcass; for though a flat sided dog cannot be lasting, the large barrel shaped one can hardly be very fleet. In proportion to the depth of the chest is the abdominal contraction; thus the deepest chested greyhounds, when in good condition, have usually the smallest bellies, by which no interruption is given to the under stretchings of the hind legs beyond the fore in their coursings. Neither is there then any injurious stomachic pressure on the diaphragm or midriff, or any unnecessary abdominal load to carry. We wish not to be misunderstood with regard to the desired form of carcass; we again repeat that we would avoid out-swelling sides, but we would still more studiously avoid a direct flat sided dog: it is the two or three last ribs that should be well arched out; for it is to their inner surfaces that the curtain of the midriff is attached, which circumscribes the lungs on its pectoral surface, and the stomach on its abdominal disk; consequently its greater extent of surface is equally favourable to both the respiratory and the digestive powers.

1915. *The haunches and all the hinder parts of the greyhound* should be marked for strength by their extent across and by their firmness. See our cut (*fig* 291.), where two dogs of this breed are contrasted, one being particularly well formed in his hinder quarters, and the other altogether as meagre. We have occasionally seen haunches of sufficient breadth, but they were not firm and resisting to the touch, but more resembling that which is felt on the haunches of a horse when living in very good grass with very little work; but such were not the haunches our cut is intended to represent. Without really good haunches and muscular thighs, the odds are against any dog, be his other points what they may. It is by the propulsatory efforts of the muscles of the loins and thighs that progression is so much accelerated in this race; and wherever the muscular markings are meagre, the killing properties are small: we therefore recommend every sportsman to avoid breeding from any such defective proportions. The tail also, without doubt, has something to do with progression, as we may judge by its sweeping gyrations when the dog is running; but particularly it is seen in action in turning, to which, we believe, its aids are confined. Arrian would have the tail to be long and rough, with hair particularly towards the tip. Is this not in opposition to the opinion of those who aver that the greyhound of the poet's time was identically the same (tail and all, as they would suppose) with the greyhound of the present day? Would not Arrian's "rough tail" be called a mongrel with us? This confirms our previous statements that we owe to the ancients the early greyhound such as he was, but that we owe the present improved breed to cultivators of much later times. The lengthening and the fine tapering tail now seen is in unison with the general alteration gradually brought about in the breed, and is that which constitutes what is called among sportsmen high breeding. We have already hinted that we do not think the greyhound's tail was given as a mere ornament, but to assist generally in his propulsatory efforts, and more particularly in his turnings and wrenchings; and such seems the general opinion by the stated wish of breeders, that it should be of considerable length. Nevertheless, there are both reasons and facts to prove that the greyhound's tail is not indispensably necessary to his predatory exertions, as we have shown in art. 1899.

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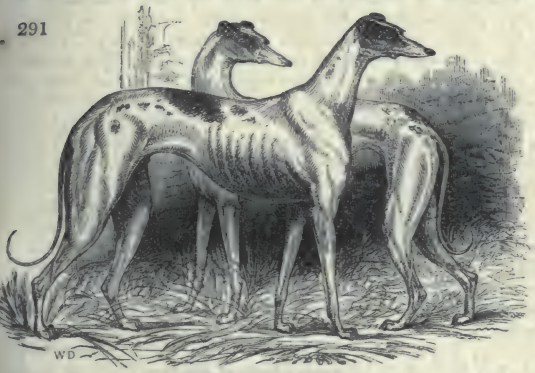

STRONG AND WEAK LOINS.

1916. *The thighs of the greyhound as well as the loins* should be large, and exhibit very powerful muscular markings, so that when the dog is viewed from behind they should appear to cover the sidelong view of the body. His hock, also, to be good, must be wide, and, like the knee, should be as low placed in the limb as possible; for on the extent of the angles formed between these several portions of the hinder limbs depends the extent of the space passed over at each bound. We would again refer for further exemplification of the rationale of progression, as connected with bodily proportions, to the *Exterior Conformation of the Horse*, p. 260.

1917. *The texture of the coat of the greyhound of the present day is*, with few exceptions, very soft and fine. We say with few exceptions, because some rough-coated dogs are still to be met with. Mr. A. Graham has bred these of such merit, that roughness of coat has ceased to debar from open meetings, or from most clubs. In 1835 his brindled rough dog Gilbertfield won "the Glasgow Gold Cup," contested by ninety-one dogs; and, next season, his brindled rough dog Goth, by Gilbertfield, won "the Clubs of Scotland Gold Cup," run for by eighty-seven. Gilbertfield, by thus winning in his fourth season, proves that speed, bottom, honesty, and truth may not only be possessed, but maintained, by a rough dog; and the continued success of his descendants shows that winning blood may be transmitted in a rough line.

1918. *The colour of the greyhound coat* is with some an object of importance, while others adopt the old adage, "that a good dog, like a good horse, cannot be of a bad colour;" and certain it is that there have been greyhounds of all the colours common to other dogs. It is thought that among the early races, fawn colour predominated; but at present it is not more common than any other, but, on the contrary, rather less so. The brindled or streaked dog is very generally slighted, as exhibiting the bull-dog cross of Lord Orford, or some other fancy breeder. Nevertheless there have been very excellent brindled greyhounds, of which Major and Sylvia, brother and sister to Snowball, are prominent examples, as are others also which figure in the pages of the *Stud Book.* Arrian was wholly indifferent to colour, and his eminent translator is inclined to the same opinion, coinciding with Tardif, *ex colore nihil certi ferè pronunciatur.* No positive dependence can be placed on colour. This indifference to the colour of the greyhound marks many of the older writers, both foreign and British, while the preferences of others are as fickle and fanciful as versatility and want of due experience could make them. Oppian reprobates white and black greyhounds, and would have them either red, russet, or fawn colour. What would he have said to the performances of Snowball, who, we know, was so named because he was as black as a crow? Turberville prefers a homogeneous colour, be it white, fallow, dun, or black; Pollux would mix a little variety with the tint; De Langley favours the "rede falow with a blak moselle." The *Suffolk Sportsman,* on this subject, says: — "I insist upon whole colours, save the throat or the breast. Black, red, fallow, dun, mouse-colour, blue, and the pure white; all with coats short, smooth, and soft as a mole's. The party colour I cannot allow, or the brindled. The highest title they can aspire to, in despite of their actions, is (in the florist's phrase) lurchers rectified. In each of these you observe the stand-up ear — watching, wandering eye — crossing the beat before the horses, and other explanatory symptoms. But the greatest criterion, and most valued by woodland hedge thumpers, is the feat curl at the end of the tail. These usurpers of title are great killers, and in a close, inclosed country, are very necessary for that purpose; but let them run under a proper name. After the first year few run home in a match, but lie back to take advantage at the turn from the leading dog. I have seen them (entire strangers to the place) run foul in the second course, and swerve directly for covert, intercepting at her meuse the good old hare that, at fair footing, would have beat them out and out. The true greyhound, besides in colour and coat, differeth also in make and behaviour when beating. He is longer in the leg and the back; not so wide in the loin, or thick in the gascoyn; his ears short and thin, lying close on his neck; his stern delicate, tapering, and (if in condition, and not under fear or in hand) projecting almost in a line with the back, three or four inches from its base, when it falls into a form, describing an arc of a large circle." (*Field Diversions*, p. 31.) Mr. Thacker does not appear slavishly attached to any colour, nor does he greatly object to party colours either, though he thinks that there are more good dogs of whole colours than of party colours. He also observes, that were he to choose a dog for a bitch from divers coloured dogs of equal goodness, he would avoid the brindled bull-dog colour, nor would he encourage the light dun. Our own experience as a breeder is limited, but the daughter of the Essex Millar, which we have mentioned as our own property, being blue and withal superexcellent, inclines us to think well of that colour; and the more so, as we have known several other good ones of the same hue. We are indebted to the industry of Mr. Thacker, for selecting from the *Stud Book* the proportions of winners of several colours: "Of 1,352 greyhounds entered in that work as winners of 1830 prizes, 617 were black, or black and white; 318 red and fawn, or those colours and white; 134 blue, or blue and white; 57 yellow, or yellow and white; 81 brindled, or brindled and white; 23 cream colour; 75 white; and 47 colour unknown. Of these 1,352 winning greyhounds, only 281 are party coloured, including those with white ticks amongst the uniform colours, as those white ticks are sometimes thought to be owing to there being ticks or fleas in the kennel when they were whelps." (Vol. ii. p. 85.) But there is no virtue in colour. It may indicate the particular lines of ancestry to which the several puppies of a litter take, but it forms no guide in entering or backing a dog for a stake.

1919. *The height, length, and weight of greyhounds differ considerably:* thus Mr. Hassell's dog Harold, a constant winner, Mr. Thacker tells us, was five feet four inches long, two feet two inches and an eighth high, and weighed, in coursing condition, sixty pounds. Harpalyse, an excellent bitch, and a winner, was five feet one inch long, two feet and one quarter of an inch high, and of fifty-six pounds weight. That length more than height is essential to speed is the opinion of many good judges. Mr. Thacker advocates the same position, and offers many anecdotical illustrations of its truth, to which we would refer the courser. As regards the general dimensions of the greyhound, in our opinion, neither great height, nor great length, is absolutely essential to make a killing dog, or a conqueror in competition. There are numerous instances of small dogs winning from large ones, but with equally good proportions, height, length, and substance, will preponderate. Sir William Clayton on this subject says, "I may, perhaps, in the opinion of some sportsmen, entertain an erroneous idea, but I cannot subscribe to that of the small greyhound being equal to one of a larger size. The medium is, in fact, the height to be desired; and I consider the superiority to be decided on mathematical principles. A given length must cover a given space of ground, and the short small greyhound must necessarily make more strokes than a larger one to cover the same space of ground, and, consequently, must be sooner fatigued. The great overgrown dog I equally exclude, for the bulk there counteracts itself, and the extreme length cannot recover itself to repeat the stroke, so that the ground covered by the length is then lost by a failure in the repetition of the stroke. On these principles I have seen small greyhounds that I received out of Yorkshire regularly beaten by my own." (*Treatise on Greyhounds*, p. 13.) Over light ground, such as downs and wolds present, in a give-and-take country, especially if of a hard dry soil, and among hills, small, light, muscular greyhounds generally do best; and over flats, more particularly if soft, heavy, and intersected with wide ditches, and on deep fallows, large, lengthy, powerful ones most frequently distinguish themselves. Yet Lord Eglinton's Blackbird, which was a mere dwarf in size, but a most beautiful bundle of symmetrical muscle in appearance, struggled unrivalled over the deepest fallow, and his large dogs, Waterloo and Dusty Miller, were equal to the smallest and most compact greyhounds in racing, turning, and lasting among the steepest uplands.

1920. *In the choice of a greyhound,* as in that of a horse, the nature of his work and the general features of the country he is to course over, should be somewhat taken into consideration. We do not here allude to the dogs of the match courser, for he usually breeds his own dogs, and consequently may be supposed to possess them in sufficient variety to suit every locality, as the hilly, the level, the open, or the inclosed; but we here more particularly have an eye to the dogs of those who pursue this sport as an innocent recreation, altogether excluding such as (*proh pudor!*) course because an eatable animal is in the perspective. For the courser we have in our eye a brace of middle sized dogs may suffice for his sportings in a country which presents only the usual variety of feature. A leash however, or two couple, are more effective numbers to guard against contingencies; and being so furnished, the size, form, and qualities, may be extensively varied in each dog, so as to comprehend the excellences of fencing, meusing, adaptation to acclivities, declivities, &c. &c. One may be good at a rush, and if he do not kill, then the hare is lost as regards his efforts; but being assisted by his less speedy but stouter mate, the caption is made in the end. One is ever ready at a turn, another not so quick, without false cunning, and not at all dishonest, yet avails himself of advantages as they occur with more tact than the other, and is therefore sure of his hare at last if he have open ground before him. We would ourselves, as far as simple amusement goes, prefer a brace of dogs of different qualities, both excellent, but each excelling in points contrary to those of the other. A contemplative sportsman, and a true lover of nature, may here, in the contrastings of character and varieties of operation, find a field for inquiry, and a pleasing employment for all his faculties, even when no currant-jelly sauce gilds the horizon as he returns. It is not fishing alone, but shooting, coursing, ay, and even hunting, that may be made a contemplative man's recreation. With a mind intellectually disposed, food for contemplation, interest, and instruction, may be drawn from one or from all.

1921. *Are bitches better for coursing purposes than dogs?* That they are so is an opinion held by many experienced breeders, though contradicted by others. Our own experience as a breeder is much too confined to enable us to make any allegation *pro* or *con;* the two best we ever possessed were females, and several of our coursing friends also incline towards the ladies; at the same time some other experienced coursers, we know, are sceptical on this point. Mr. Thacker, who must be considered as in himself a host, is very decidedly in favour of the superiority of bitches; and he decides the point, not by bare assertion, but on philosophic grounds:—"Good bitches are better than dogs in the same proportion as they are better made in their backs (*i. e.* stronger and wider), and their ribs better curved out; and further, because bitches are longer in their backs in proportion to their height than dogs." We should, however, incline to consider the inequality not very great; and even the *Stud Book,* in its list of winners, makes the proportions between the sexes as seven of bitches to six of dogs. Arrian says, "The greyhound bitch is fleeter than the dog, but the dog has more *bottom* than the bitch; and because he can run through the whole year, is a much more valuable acquisition: and as good bitches abound, but it is no easy thing to meet with a thorough good dog, the latter is on this account more precious: and again, it is fortunate if bitches preserve their speed to the fifth year, whereas dogs retain theirs even to the tenth." (P. 151.) Markham says, "It is an old received opinion that the greyhound bitch will beat the dog." Aristotle remarks of the Spartan tribe of dogs, that the bitches are the longest lived. It would seem that, in the same number, there are fewer bad bitches than bad dogs, and that a first-rate dog is superior to a first-rate bitch.

1922. *The qualities of the greyhound* may be said to be domestic and sporting: of the domestic qualities of the greyhound, as he now appears to us, the general opinion is that they are not of the highest order. In his early form, ere he was so artificial an animal as at present, he exhibited all the qualities, good and bad, which mark the dog generally. He was then bold, sometimes ferocious, but he was also brave, generous, faithful, and confiding, of which history has left us numerous notices. Of these none perhaps is more interesting than that which Arrian has left of his favourite Hormé. "He is," says this renowned Athenian, "for while I am writing he is yet alive, most gentle and kindly affectioned; and never before had any dog such regard for myself and friend, and fellow-sportsman, Megillus; for when not actually engaged in coursing, he is never away from one or other of us; but while I am at home, he remains within by my side, accompanies me on going abroad, follows me to the gymnasium, and while I am taking exercise, sits down by me. On my return he runs before me, often looking back to see whether I had turned any where out of the road; and as soon as he catches sight of me, showing symptoms of joy, and again trotting on before me. If I am going out on any government business, he remains with my friend, and does exactly the same towards him: he is the constant companion of whichever may be sick; and if he has not seen either of us for only a short time, he jumps up repeatedly by way of salutation, and barks with joy, as a greeting to us. At meals he pats us first with one foot and then with the other, to put us in mind that he is to have his share of food. He has also many tones of speech, more than I ever knew in any other dog, pointing out, in his own language, whatever he wants. Having been beaten when a puppy with a whip, if any one, even to this day, does but mention a whip, he will come up to the speaker cowering and begging, applying his mouth to the man's as if to kiss him, and jumping up, will hang on his neck, and not let him go until he has appeased his angry threats. Now really I do not think that I should be ashamed to write even the name of this dog, that it may be left to posterity that Xenophon, the Athenian, had a greyhound called Hormé, of the greatest speed and intelligence, and altogether supremely excellent." (P. 78.) As we see the greyhound at the present day, speaking generally, he is less amiable, and, if we may be allowed the term, less intellectual than most other dogs. Education and perfect domestication, it is true, will occasionally develop amiable and intelligent traits, which otherwise do not very naturally appear in such at least as are kennelled. Some extraordinary instances of the interesting and even noble qualities which mark the dog generally, have occasionally shone forth in the greyhound also; nor do we mean it in detraction, but in the spirit of truth, when we remark, that of these historical notices most of them relate not to the cultivated greyhound of our times, but to that breed which was used of old, at once as a personal guard and as the protector of fold and fence; which was possessed of courage and prowess sufficient to make him attack, as well the midnight human thief as the prowling or slinking bear. This dog, known as the powerful *celeres* of the ancients, or Irish or Scotch greyhound, had not been yet fined down to the elegance of person common to those of our times; but which, be it observed, has been done somewhat at the expense of their general mental intelligence. It would, we may add, be difficult to find a Gelert among these, whose worth we may be excused if we recall it to the recollection of the reader. Mr. Carr, in his *Stranger in Ireland*, relates the following circumstances, which he became acquainted with in his journey to that country: — "In the morning I wandered to a little church, which owed its elevation to this interesting circumstance, — Llewelyn the Great, who resided near the base of Snowdon, had a beautiful greyhound named Gelert, which had been presented to him by King John in 1520. One day, in consequence of the faithful animal, who at night always 'sentinelled his master's bed,' not making his appearance in the chase, Llewelyn returned home very angry, and met the dog covered with blood at the door of the chamber of his child: upon entering it he found the bed overturned, and the coverlet stained with gore: he called to his boy, but receiving no answer, he too rashly concluded that he had been killed by Gelert, and in his anguish instantly thrust his sword through the poor animal's body." The Hon. Mr. Spencer has beautifully commemorated the above event: —

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THE LOVING AND BELOVED HORMÉ.

"His suppliant looks, as prone he fell,
No pity could impart;
But still his Gelert's dying yell
Pass'd heavy on his heart.

"Arous'd by Gelert's dying yell,
Some slumb'rer waken'd nigh;
What words the parent's joy could tell
To hear his infant's cry?

"Nor scathe had he, nor harm, nor dread,
But the same couch beneath
Lay a gaunt wolf, all torn and dead,
Tremendous still in death.

"Ah! what was then Llewelyn's pain?
For now the truth was clear;
His gallant hound the wolf had slain,
To save Llewelyn's heir."

To mitigate his offence Llewelyn built this chapel, and raised a tomb to poor Gelert; and the spot to this day is called Beth Gelert, or the Grave of Gelert, "where never could the spearman pass, or forester, unmoved." A further instance of the attachment of the greyhound is to be found among the specimens of early English metrical romance, by George Ellis, Esq. under the article *Sir Triamour:* —

'The good greyhound, for weal ne wo,
Would not fro the knight go;
But lay and licked his wound.
He weened to have healed him again,
And thereto he did his pain;
Lo, such love is in a hound!'

He even scraped a pit for the dead body, covered it with moss and leaves, and guarded it with constant attention, except during the times when he was employed in securing his own subsistence. As his prey diminished, the length of his chase gradually increased; and at the seventh year, at the festival of Christmas, he suddenly appeared, gaunt with hunger, an unexpected visiter in the hall of the king of Arragon. Such an apparition excited general surprise, and particularly attracted the attention of Aradas: but the animal, with a gentleness of demeanour which belied his savage appearance, made the rounds of the tables and disappeared. He returned on the second day, again surveyed the company, received his pittance, and retreated. The king now recollected the dog, and gave orders to his attendants that, if he should return, they should follow him without loss of time, in the confidence that he would lead them to the place where Sir Roger and the queen were secreted. On the third day of the festival the hall was filled at an early hour, and Sir Mardock, for the first time, took his seat among the guests. The greyhound, too, did not fail to repeat his visits, and with the rapidity of lightning instantly sprung upon the murderer of his master: —

'He took the steward by the throat,
And assunder he it bote,
But then he would not 'bide:
For to this grave he ran.
The followed him many a man,
Some on horse, and some besides;
And when he came where his master was,
He laid him down upon the grass,
And barked at the men again.'

The crowd who had followed him being unable to drive him from the spot returned with the tidings to the king, who instantly comprehended the whole mystery. He directed them to dig for the body, which they readily found, and which had been miraculously preserved in such a state of perfection as to be easily recognised. It was then buried in holy ground with all due solemnity, and the faithful dog shortly after expired on the tomb which was raised in memory of his master." "The greyhound, be it remarked, in ancient times was considered as a very valuable present, and especially by the ladies, with whom it appears to have been a peculiar favourite: in a very old metrical romance, called *Sir Eglamore*, a princess tells a knight that if he was inclined to hunt, she would, as an especial mark of her favour, give him an excellent greyhound, so swift that no deer could escape from his pursuit: —

'Syr yf you be on huntynge founde,
I shall you gyve a good greyhounde,
That is dunne as a doo:
For as I am trewe gentylwoman,
There was never deer that he at ran,
That might yscape him fro.'"

1923. *Of the sporting qualities of the greyhound*, speed, stoutness, determination, and tact, are the most essential. Condition is equally important; but it must be considered as much a sporting quality of the trainer whose judgment brings his dogs into that state, as of the dogs who are the objects of it. The subordinate qualities are good turning, good fencing, good meusing, and handsome killing. Speed we consider to be dependent on a certain form, and mechanical placing of the different parts of the body; the duration or lasting of the speed is likewise dependent, partly on the formation, and partly on the quantum of excitation or nervous influence supplied, accompanied by that state of the whole, termed condition, which results from judicious dieting, exercising, &c. &c.

1924. *Turning is a most essential quality in a greyhound.* Though affected somewhat by practice and condition, it depends chiefly on a certain shape of body. To turn nimbly requires length and suppleness, accompanied with a very quick eye; and we presume we hardly need to state, that the exertion which forces the hare into a complete turn is much quicker and more forcible than that which forces a wrench or a rick, and, consequently, it takes much more out of a good dog, and is, therefore, very justly rewarded accordingly by the judges. The hare also suffers severely from a turn, and but little from a wrench, and still less from a rick. The rules, therefore, in favour of turning are evidently just; and the more so, as it is often seen that the dog, when inclined to run cunning, will rather wait the chance of his companion turning the hare than do much towards it himself.

1925. *A good fencer is very desirable in coursing,* nor is there any action of the greyhound more interesting than that of his gallantly topping a high fence or stiff hedge, without the momentary check or pause that marks low breeding and slack metal, and which, when it does occur, gives to both the fellow dog and the hare a slight advantage, amounting to half a go-by in our opinion. With a large dog fencing is preferable to meusing, as such an one may actually get stuck fast in attempting to dash through a small but thick-set meuse In some cases, also, there is reason to think that a very thin-skinned dog prefers taking the fence to forcing the meuse; in which instance the dog suffers the sad imputation of want of metal. We have, from our own observation, in some cases where this has been done, thought the object was not so much to spare the skin as to prevent being dissighted from the hare taking up the ditch instead of the open, when it has been wide and dry, and she herself much distressed; for it is evident the dog stretching over the top of a hedge, commands a better field of view than the dog who is forcing himself blindfolded through a small opening in the bottom of it. Fencing or topping, as it is sometimes called, is so desirable a quality that some breeders interpose a fence between their puppies and their food, over which they must leap to get to it. Meusing and topping characterise breeds.

1926. *Of the bad qualities of greyhounds* want of speed and durability stand foremost, and as they are in most cases irreparable, we shall waste no more time than is required to note, that whatever is done with such dogs do not breed from them, particularly if both defects meet in the same subject. In a case where only one of these defects exists, and is counterbalanced by any remarkable excellence, as, for instance, in a slow dog that is more than usually honest and determined, &c. &c. it would not be imprudent to breed between him and a bitch very lengthy and rapid, although less lasting. Lurching, known as the reverse of honesty, determination, and fair running for match coursing, is the very worst property a greyhound can be possessed of, as it robs the master of his time, his money, and his credit as a courser and owner of dogs. In coursing merely for exercise and amusement, without the stimulus of *matching,* the defect is great; for to see the willing dog killing himself by his honest exertions, while his idle lurching companion is only *waiting on,* and looking out for a chance that the hare may run into his mouth, must be galling to the generous sportsman and lover of fair play; for as Mr. Thacker says, "The waiting dog has not his lost ground to regain; the other turns the hare, and in that turn the waiting dog is brought even with his fellow, or perhaps put before him, or possibly the hare is brought back to him: at all events his lost ground is got up for him; this is repeated again and again, until at last a lucky chance throws the hare into the mouth of him who has done the least in the run." Lurching in a dog, however, requires a very quick eye to detect it in some cases, and even an honest dog may be taxed with it, when in fact he is in nature the very reverse; but being less ready at turning than his antagonist, although he is doing his best, without much discrimination on the part of those looking on, he is apt to be taxed with lurching. Sir Walter Scott's poetic pen almost glosses over this faulty trait, when we find it thus described: —

> "Experience sage the lack of speed supplies,
> And in the gap he seeks, his victim dies."

Subsect. 1. *Breeding, Rearing, and Feeding Greyhounds.*

1927. *As regards the breeding and rearing of greyhounds,* much of what has been stated on the subject of breeding, &c. of other sporting dogs will apply to them also. Such specialties as arise in consequence of their greater remove from a perfectly natural state, either in personal development, habits, or acquirements, it will be our purpose to inquire into. It must be apparent that the uses made of the greyhound differ as much from those of other hounds as the race-course practices of the race-horse vary from the road practices of the nag, or even the field practices of the hunter. The speed, the durability, and the determination of both the race-horse and greyhound have been brought to the greatest possible pitch of perfection by judicious culture. The experienced breeder selects his parents with judgment, remedying the defects of one by taking care to have a superabundance of excellence in that point in the other. Has he a dog somewhat flew or tender, although very stanch and true, let him choose a hard, muscular framed bitch on which to engraft the good qualities of the more tender dog? Has he a very light framed bitch, quick and nimble in the extreme, but so fine coated as to dread the smallest appearance of a gap, and one that would prefer risking her neck at a leap in preference to encountering the thorns of a meuse, let him look out for a notoriously hardy dog, and if he have a coarser coat than ordinary, let him not reject him on that account, for the next cross will bring him home, if he match his progeny with judgment, although he be in-and-in. The emulous exertions of the racer are well known; those of the greyhound also can now be reckoned on with so much certainty as to rank coursing among our permanent national sports: and if racing have its public courses, its annual calendar, its stakes, &c. coursing has also its stud-book, its meetings, and its prizes to contend for. Need we therefore wonder that the greyhound, to fit him likewise for his emulous racings, should require continued culture and systematic attention; and that breeding, rearing, feeding, and training instructions, are as necessary for him as for the racer. We again repeat that what may be called the artificial system of breeding, training, &c. of sporting dogs having been already fully entered into, we shall here only offer such remarks on the several matters which more immediately concern coursing as a distinct sporting practice, whether gathered by us from the accredited writings of our most eminent coursers, or from remarks made by ourselves at coursing meetings, or by observations made on our own dogs, and on those more extensive kennels of others with whom we used to enjoy the emulous feats of the long tails.

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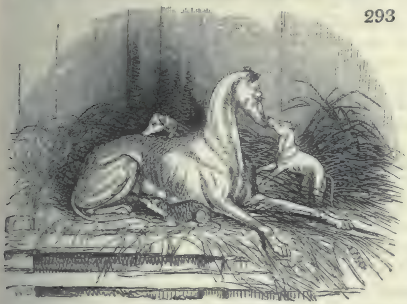

GREYHOUND AND PUPS.

1928. *The breeding of greyhounds* should be undertaken with much circumspection. In the first place, both parents should be perfectly healthy, and in the best condition. Should it so happen that the dog to be bred from has not been definitively chosen for the heated bitch, be careful to select such an one as by its general, as well as particular, excellence can amend any striking defect in either form or quality in the intended mother; and as no one is without some defect, by such selection it may be remedied in the breed to follow. Avoid any prejudices in favour of either your own breed or that of any other person: faults every dog must have; choose therefore that which has the fewest, and those of the least importance in your sporting engagements, provided you are a match courser. Every breeder almost has some favourite point in which he wishes to be considered as eminent; one breeds for height and size, another wishes his excellences to be wrapped up in the smallest possible compass. To gratify any particular *penchant*, of course the parents bred from must both possess the required qualities in a supereminent degree to insure complete success. He, however, is the most prudent who combines in his view the very best blood, and that general form which is most likely to be accompanied with speed, durability, and the minor killing capabilities: with such the breeder may say, " Laugh at us who can." Some breeders are particularly anxious for very large greyhounds; but we would beg to remind such, that it is not the largest horse that wins the stake; on the contrary, some of the best racers have been rather undersized, and the case is the same with greyhounds, as we have lately offered a proof of. Breed therefore for that form that contains within it the principles of progression in the greatest number and force. Other breeders refuse to rear any whelps that are not of youthful parentage; but there are reasons to doubt the propriety of a decided objection to such breeding. Some of our most successful breeders prefer to rear their dogs from fully matured parents. Among these we may particularly note Mr. Thacker, who has favoured the public with much illustrative matter on the subject. He informs us, that he only knows of one instance of a first-rate greyhound being bred from a young dog and bitch, while, on the contrary, from parents on both sides, eight, nine, and even ten years old, as the *Stud Book* annals testify, some of our most celebrated greyhounds have been bred. Burgundy, who started twenty-seven times, and won twenty-two out of the number, was bred from the get of Grasper, when he was nine years old. Mr. Hassal's Claret, Bergami, and Vengeance, were each of them bred from very old parents, and Mr. T. alludes to many other dogs and bitches of notoriety which were so bred: indeed, very many coursing sportsmen are now known to be in favour of breeding from well matured parents. As a further illustration we may add, it is well known that Lord Orford's famous bitch Czarina, who won forty-seven matches and never was beaten, did not breed until she was thirteen years old, when she had eight whelps by Jupiter, and, as is well known, they all proved excellent runners. Czarina was the dam of Claret, and Claret, we hardly need to remind the reader, was the sire of Snowball and Major. Such striking proofs that age in the parents is not inimical to the get of a good progeny, must tend greatly not only to disprove the former opinion in favour of young parents as essential, but also to induce us rather to adopt one directly the reverse. Those also who advocate the necessity, that at least one of the parents should be young, do not appear, from the results which have been noted, to be more correct in their conclusions than those who require youth on both sides. Markham says, " You shall observe to have your dogges and bitches of equal and indifferent ages, as about three or four years old at most; but in case of need, your bitch will endure a great deal longer than your dogge; and to breed from a young dogge and an old bitch may bring forth an excellent whelpe."

1929. *As to the age at which the youthful bitch may commence breeding*, no attempt should be made thereto until she is perfectly matured; and therefore, among greyhounds, the mother should never be too young; few good dogs result from early breeding on the female side. Mr. Thacker offers numerous facts illustrative of a similar opinion. The sire on the contrary, many breeders of greyhounds affirm, should be even of more mature age; indeed it would be better, in their opinion, that he should be what might by some be considered too old than too young. Mr. Bates's Burgundy, Mr. Layster's Lapdog, and Levite, all winners of prizes, we are told by Mr. Thacker, are the progeny of Grasper, an old dog. Arrian also has formed a similar conclusion; for he notices the third year as the earliest period she should be warded. We are of opinion that he also confines the continuance of the breeding to the ninth year; but we have just shown that this may with propriety be extended to perpetuate a valuable breed. Some breeders are favourable to in-and-in breeding, and having a good strain are anxious to perpetuate it; others, on the contrary, are decidedly against it; and among them one practical courser and writer, Sir William Clayton. Much has been written on the subject: our own opinions on the matter, which the more we see the more reason we find to adhere to, are fully stated both in our *Canine Pathology* and in this work (see *Breeding and Rearing of Hounds*, p. 411.); we shall not therefore repeat them here, nor dwell further on this subject, though a very important one, than to observe that facts, *pro* and *con*, placed in juxta-position, leave most of those who are entirely unprejudiced in uncertainty. Mr. Thacker, however, evidently inclines to an opinion that it is attended with few if any of the ill consequences attributed to it by the enemies of the system. Mr. Drake, of Norfolk, who was a most successful courser, principally ran in-bred greyhounds; and he continued the same plan for twenty years, it is stated, without losing bone, size, symmetry, or courage.

1930. *The time of the year* in which it might be desirable for the greyhounds to breed, should undoubtedly be an early one: but to gain this advantage we caution the sportsman against any attempt to force premature heat in a bitch, being confident, from full experience, that when this is done impregnation frequently fails; and that, when it does not, the progeny are seldom fine. The mother is also apt to lose her coat, and to be injured in her constitution by this forcing. Never run a bitch with her heat on her, nor when it is either approaching or going off; at all such times she is irritable and weak. The same caution, though less imperatively, will apply also to the dog as the intended sire; for not only does the present warding make a draw on his animal powers, but the feverish excitement kept up by the hope of its repetition, and by the tainted effluvia which will reach him a long way off, will weaken him likewise, and make him less alert on his coursing duties. It is from this circumstance that most experienced breeders are unwilling to employ their dogs in field and kennel duties at the same time; we cannot however agree with Arrian, that it requires sixty days to reinvigorate the stallion. On the general question of the most favourable breeding season, Mr. Thacker's opinion is comprehensively embodied in the following remarks: — "There are many questions dependent on the time of the year the puppies are born, and two especially: namely, the most propitious season for fostering and nourishing the whelps in their tender age; and, secondly, the time they are qualified to run as puppies, which, according to immemorial custom, depends on the time of the year they are pupped. Horses for racing take the date of their age from the 1st of May, unless an alteration in the rules of the turf has recently been made in that respect, whether they are foaled in January, February, March, April, May, or June; so it is the old custom for greyhounds to take their date from the 1st of January. Thus those pupped on the 1st of January are qualified to run as puppies until the 31st of December next but one, or till two years old within one day; while those which are pupped on the 31st of December, only one day older than the former, can only run as puppies till one year old, or until the following 31st of December." (Vol. ii. p. 198.) We take this opportunity of recommending, that when a bitch is to be *put by* from breeding that she may be fed low, unless her being *put by* is on account of her coursing engagements; in such case do not lower her condition, but give her cooling alteratives and full exercise. Should she have no engagement, besides low feeding, giving physic and exercise, bathe her teats with some discutient provided they swell, as is not uncommon, as the time arrives at which she would have pupped. (See this subject in our *Medical Treatment of Hounds*, p. 425.)

1931. *The majority of the dog*, like that of the horse, used to be arbitrarily dated from the commencement of the year, which led to unfair results in match coursing as in match racings. We own to the difficulties which present themselves to a more just regulation of the age in both animals, seeing that in both a few weeks only gives a very preponderating start in strength and size. The majority of the dog, as being of more rapid growth, is even more likely to give an unfair, or take away a just advantage It has been facetiously proposed to consider it to commence from the time he is first observed to lift his leg to water; but in such case from what period, or from what manifestation, are we to date that of the bitch? As the ladies among our own kind, at least, are somewhat precocious, it surely would be doing the lady dog no injustice to date the maturity of the sister from the day that the brother had signalised his majority. It is not now, however, the rule in all coursing meetings, that the greyhound's age is to be taken from the first day of the year; on the contrary, the conditions of entry are fixed in many at eighteen, and in some at twenty months old, as the subscribing parties agree. Consequently, whether a dog or bitch be pupped before or after the 1st of January is of no consequence; and a general understanding, we believe, now exists that no dog or bitch can qualify for a puppy cup, or stake, after becoming two years of age. It would be desirable, although not altogether under our control, that whelps should be littered at a seasonable time of the year. The older authorities recommend the spring months as the best for the purpose; and, could we order the matter, we would say let it be from the middle of February to the middle of March. The greyhound is the very child of the sun, and requires the fostering influence of his warmth as much as any animal whatever. When therefore a bitch whelps at an unpropitious time, she should be so placed as to obtain sufficient genial heat for herself, and also for her offspring when she is absent. The experienced and sensible breeder needs not this caution; but we fear that there are others who, although they may wish to possess good greyhounds, are yet thoughtless enough to settle the matter by thinking it is only a dog that is concerned, and, as "any thing is thought good enough for a dog," *proh pudor!* the unfortunate whelps are probably left to the tender mercies of a stable boy and the inclemencies of an outhouse. Exposure to cold, neglect in feeding the mother, &c. &c. bring with them certain consequences seen in a stunted ricketty race, which, fortunately for the owners, the distemper usually prevents reaching to maturity. Warmth, it may be observed, expands the frame — cold contracts it; and more than this, it forces the chilled litter to huddle together, and thus prevents their stretching their limbs, by which motions early and healthy extension is assisted. That whelping should take place early in the year, is desirable on other grounds than merely those of the young having the genial effects of spring to forward their growth; it is also desirable as it regards their future coursing operations, which Mr. Thacker clearly explains: — "If," he says, "they are whelped in February for instance, they have warmth from their dam for a good deal of the month, and without running out of doors, by which time the weather often becomes warmer; then the following February or March they will be old enough to have a trial of their speed, and with their general looks and shape, which may be judged of at that age, the breeder will be able to make up his mind which to draft, without being at the expense of keeping, the whole summer and autumn, such as are not worth keeping; for at thirteen or fourteen months old a dog, if he is not very large and loosely made, which of course can also be judged of at that age, will run one moderate course in a day without injury, by which you can judge both of his speed and stoutness; and a bitch at a lesser age." (Vol. ii. p. 201.)

1932. *The greyhound bitch*, while suckling her whelps, should be very liberally fed with mixed food, but the proportion of animal matter should predominate. To make it nutritious without being too heating or drying to the milk, farinaceous matter should constitute the vegetable part. Our own opinion leans to wheaten meal, where the expense is not an object; for we have seen blotches and a reddened skin spread over the younglings, when either oat or barley meal has been given too long and too plentifully. It is also prudent in all cases, for both mother and whelps, that the food be varied, and both will thrive better for it; in a state of nature carnivorous and herbivorous beasts seek a change of food, not only by choice, but also by necessity; it is therefore evident, that when such are living a life of art, the necessity for non-adherence to one kind of food is obvious. With the flesh given it is thought prudent to add a considerable portion of bone, under a supposition that the phosphate of lime, which forms the base of bones, may be taken up by the stomach of the bitch in such proportions as to deposit a superabundance within the cartilaginous base of the bones of the younglings, which will thus receive a more early and more plentiful supply of consolidating matter. While we do not deny the propriety of giving bones to dogs, but the contrary, we are not so certain, as some others, that new combinations do not take place in the assimilating organs of both mother and offspring, which may frustrate the accumulating any additional bony base by such means. For the sake of both the mother and offspring, bring the whelps as early as possible to take food; first offer the cow's milk, in which flour has been boiled with a little sugar; or bread soaked in boiled milk may be given. After a few feedings of this kind, intervene broth with flesh finely shred in it, until more solid substances can be taken. This plan will be attended with many advantages; it saves the mother, it assists the growth of the whelps, and it begets affection and a sense of dependence on those around them.

1933. *In the rearing of greyhound whelps* it is sometimes desirable, with very valuable breeds, when they exceed the determined number which the breeder allots to the mother, to rear them independent of her, either by foster parentage or by hand. Should a greyhound bitch be at hand who has not very long whelped, the supernumerary pups may be put to her. If such an one is not at hand, some maintain that a foster parent of any other kind than a greyhound should not be used, lest the qualities of the foster mother may pass, in a certain degree, with the milk to the fostered whelps. But it must be admitted that there are cases favourable to the opposite practice, as witness Mr. A. Graham's Anarchy, and Rifle-and-Pike, which were suckled on a bull-bitch, and have been more successful than those of the same litter reared by the dam. Mr. W. Sharpe's fawn dog, Hughie Graham, winner of last Waterloo Cup, was reared by a colly. Sir William Clayton offers us the following ancient illustration of the necessity of the foster parentage being confined to consimilars :—

> "La qual sempre a' suoi di s' imbriaco:
> Ond' egli ancor non stetti mai sul erio,
> Perchè sempre era cotto, e si beeva
> Che non Tiberio detto fu Biberio.
> Fagguioli."

1934. *How apt we moderns are to arrogate to ourselves what of human knowledge exists among us!* the practice of sprinkling the young stranger with the foster parent's milk was known and recommended by the author of the *Cynopsium*, and we believe it invariably succeeds. Animals, by nature, take cognisance of each other more by scent than sight.

1935. *Bringing up by hand is not difficult*, and is preferred by many to making use of a bitch of an adverse kind. Commence your wet-nurse operations by making a false breast and a false nipple. An Indian rubber globe may be employed, or the glass bottle used for infants, having a piece of linen wrapped round the neck, will offer both breast and nipple. Into either of these pour some warm milk, in which a little flour and sugar have been boiled; and should it be found to relax the bowels, a little starch or rice ground, in lieu of the flour, boiled in the milk, will answer the purpose of both food and medicine. We can assure the reader, that the employ of rearing the helpless progeny will soon become interesting; and we can equally assure him that, when judiciously conducted, complete success is almost certain. It will be prudent, after some days have been spent in giving milk diet, to alternate it with some nourishing soup thickened with either flour or other meal, adding eventually to it fine shreddings of meat, until the younglings will take the more solid parts, and even mumble the gristle from off the bones themselves. Mr. Thacker lauds Mr. Drewry as the best wet-nurse of greyhound whelps in the United Kingdom. We are afraid, however, this gentleman is only an amateur nurse, or we would, for the sake of the uninitiated breeder, endeavour to learn his terms per month, feeling confident that his "*breast of milk*" is of the best kind, for it must be "the milk of human kindness."

1936. *Selecting whelps from the litter* is so much a lottery that, where it can be done, it would be better to rear all the litter until the time of entry, when the draft can be made with certainty. As this plan, however, is not always convenient, how is the choice to be made with the greatest chance of success? Some choose their whelps by measure, and some by weight; and when it is done by measure, the length of the stern is considered as an indication of excellence. Mr. Thacker, if obliged to choose directly after birth, would save the heaviest, and we know several who advocate the same choice, whether dog or bitch. A method of admeasurement was shown to Mr. Thacker by a friend, who, in his last illness, and even on his death-bed, still displayed the ruling passion, by having the newly pupped whelps of two litters from his favourite breeds brought to his bedside, that two might be selected from each litter as a present to Mr. Thacker, which being done, "Now," said the sick sportsman, "I will show you how to choose whelps." He then took the whelps of each litter, and hung them by the claws of their fore-feet to the bedstead, and as they hung he selected those whose hind-legs reached the farthest down; thus making the parts which give the greatest length of stride his criterion, as represented in our cut (*fig.* 294.). Mr. Munday's plan is somewhat an improvement on this, for he allows the hind-feet to touch the ground, and then, by the fore-feet, he draws the puppies up the wall as high as he can stretch them out, without drawing them from the ground. Either of these methods is supposed to indicate the length of stride more correctly than by taking the height and length of the body either in the whelp or full grown dog. Choosing by weight is not so much the custom as formerly; on the contrary, though a few are still favourable to *weight*, as indicative of future size, strength, and hardihood, probably more incline to think the *lightest* of the litter promise most fair for speed and activity; but in such case use double caution in the selection of subjects symmetrically formed, however light they may be in weight or small in size :—

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MEASURING OF PUPS.

> "Pondere nam catuli poteris perpendere vires;
> Corporibusque leves gravibus prænoscere cursus."
> "By weight you may the puppy's power decide:
> A heavy body bodes a speedy stride."

Pliny of old condemned them. Markham would only save those that "were raw boned, leane, loose made, sickle or crooked hought, and generally unknit in every member, as ever likely to make the best dogges, and most shapely." Blome says, "In choosing a whelp, that which weigheth lightest generally proves the best and nimblest; also those that are raw boned, lean, loose made, and for the most part unlike in every joynt, do make excellent and well-shaped dogs; whereas those that, after three or four months, appear round, close, trust, fat, and well knit in every part, are scarce worth the rearing, seldom proving good, swift, or comely; and it is observed, that the bitches are commonly more swift and nimble than the dogs." During the first month, whelps generally show the shape they will have when full grown, as well as their temper and activity, and may be selected accordingly.

1937. *A kind and encouraging manner* is peculiarly required towards the greyhound. In this dog the intellect is not naturally very acute, and those who pay unprejudiced attention to this breed will find, that while kindness will develop his talents, and beget tractability and a confiding affectionate behaviour on his part, unkindness will invariably produce in him an untractable moroseness, and a headstrong resistance on all occasions. We were much pleased with this illustration of our position from Thacker, who says, "I have seen a litter of puppies not more than seven or eight months old, that, by kind treatment, and using them to be coupled together, if you opened the couples and showed them to the puppies, they would come straight to you, poking out their noses for the couples to be put round their necks." (Vol. ii. p. 273.)

1938. *Entering of young greyhounds* may be considered under two epochs: first, their entry in spring as saplings; and, secondly, their trial in autumn as puppies. It is evident that it is well for them, as early as possible, to be taught to know their game, and also how to extend themselves in the pursuit of it; but at this early age, were they allowed to follow it repeatedly, they would become strained, enfeebled, and would probably begin to run cunning ere they had seen three years' coursing. On this subject Mr. Thacker's remarks are well worthy of attention:—"Very early entries, as six or eight months old, are very likely to give dogs a disposition to stray; but if, on the contrary, you enter them to their game at twelve or fifteen months old, for instance, when they are become more settled in their dispositions, and accustomed to some control; and if it is made where you can rely on a short course with a kill at the end of it, which are very important matters, and in which Arrian's system is worthy of attention, though not within the means of every courser; yet if you can succeed in a short course and the kill, it arouses or awakens their natural instinct of enmity to their game; and by repeating these short successful courses, at intervals of two or three weeks for instance, between times, you keep that natural instinct of enmity alive and in increasing vigour, which imparts fire and courage, and excites and stimulates them to greater energy, and further progressively strengthens their frame: as they exert themselves in those courses, though short ones, more than in their own playful exercise, the whole animal fibre is on the utmost stretch, and all their physical powers in their full action; their future playful exercise will also be of better quality, by their increased energy causing greater exertion in their play. As they get older by three or four months, rather longer courses would be desirable, or two moderate courses in a day; but even then I would not have less interval between times than two or three weeks, as the greatest danger in an anxious courser is his not bridling or curbing his own inclination, to see his fine and beautiful puppies run too often." (*Ibid.* vol. ii. p. 270.)

1939. *The proper time to enter the young greyhound to his game*, therefore, must depend somewhat on circumstances. Arrian says, "Dog puppies should be two years old before they are taken out to course, because their limbs are not set until a later period than those of bitches." Bitch saplings are certainly in advance of dog ones, and the small of either sex are in advance of the large. A bitch sapling is as fit to be entered to its game at nine months as a dog at twelve; and a bitch puppy is as fit to run for a stake at fifteen as a dog at eighteen. Hence the institution of Derby and Oaks Stakes for puppies, that dogs may compete with dogs and bitches with bitches. Saplings may be entered in the end of March, and in April according to their age; but this should be done at no great distance from covert, and an old good killing dog should be held near covert ready to be slipped to shorten the course, and secure a death. Puppies may be run in September, and that early in the morning, if the weather is warm. If possible the trials should be over old turf, rather than over cultivated land, as such turf is softer and less liable to strain and injure the dogs. It is well to have an old dog in readiness to assist, should the course seem to distress the puppies, and disappoint them of a kill. Mr. Thacker thinks this of so much consequence, that he even recommends that two older dogs should accompany the young one, to make surety double. After the kill do not fail to make much of the young dog, and encourage him to mouth the hare, but of course without permitting him to break it. We need hardly hint to the courser that he should not enter his young dog to game without having prepared him by a moderate course of training.

1940. *Training of greyhounds*, like the training of race-horses, is the art of putting them into a state that fits them for making the best use of their powers in the active pursuit of their game. In both horse and dog the exertions required are somewhat unnatural. The race-course and the match-course can hardly be said to represent any scene that nature would offer, or any circumstance that would force either animal to such desperate exertions as are there made. The horse, in his wild state, without either Arab breed or English condition, could outstrip his enemies. The dog also, when gifted with scent, has but little necessity to run down his prey at one start. To perform exertions on the part of either beyond those ordinarily required of them, bespeak a necessity for some particular artifices on the part of the requirers. The horse and dog are both bred for the purpose, with lightened frames to fit them for rapid locomotion, and they are also put into a state of body called *condition*, to enable them to keep up this rapid progression beyond the ordinary limits of their capacities in a state of nature. It is only to unite the consideration of cause with effect, that we so often revert to the necessity there is that, when we require extra exertions, we must give extra powers. We therefore breed high and we feed high; and by training exercises we accustom the dog to exert his powers to the utmost, without injury to his wind or distress to his body generally.

1941. *Feeding of greyhounds forms an important part of training.* It should be regulated by common sense and not by whim — by attention to the state of each animal, and not by mere general theory. We shall not detail the various follies of fancy feeding, but, following nature, we decry reducing flesh to a jelly, and recommend giving bones to a dog, like gravel to a bird. An economical and effective system is — *Breakfast*, half a pound raw horse flesh by itself, and then a little ship biscuit. *Dinner*, two parts oatmeal and one part flour, stirred with strong jelly of ox or calf feet; or the meal and flour made into porridge, cut up, and given with the jelly. It may be varied thus: — *Breakfast*, broken down toasted bread (consisting of two parts flour, one part oatmeal, eggs, and aniseed), half a pound underdone steak of horseflesh, and jelly. *Dinner*, firm oatmeal porridge, well boiled barley and carrots; and the meat in which these were boiled broken up in the mess. Continue or change, increase or diminish, as the dog seems to require, till the last two days, when *breakfast* may be a quarter of a pound steak, with toast and jelly; and *dinner* oatmeal and flour, stirred with jelly. Beef or mutton may be substituted at the finish, as lighter than horseflesh, but they are not better for strength and courage. During a meeting a dog may require more full and strong feeding than it is prudent to give the day before its commencement; but he must not be fed too dry, nor with any excess of flesh, as the powers of his stomach may be weakened by the distress of his courses. We have seen a dog win a great stake, fed even more simply. After two doses of physic he had once a day, for ten days before the meeting, as much as he could take of oatmeal stirred with strong ox feet jelly, till it stuck like glue; and so during the meeting. He came out successfully on a plan more simple still. A basin of toasted oatmeal, and a bowl of fine spring water, were presented to him once a day, and, receiving no other food, he was fresh, spirited, and strong as a miller's dog. On other occasions he was trained on beef, mutton, and eggs, each of them along with bread and oatcake; and he won, and seemed to run equally well, on every system of feeding. But, be it remarked, that he was always well fed and lodged; that his stomach and bowels were always attended to before his training commenced; that his training exercise ten days before an engagement was always about ten miles walking one day, and twenty miles following a horse the next; and that he was always most carefully brushed and hand-rubbed, so that his skin, which might be lifted as if not attached to his body, felt thin as silk, and looked glossy and electric as a cat's. It may therefore be concluded, that how a greyhound is studied and managed in his feeding is of at least as much consequence during training as what he is fed on.

1942. *The meal that is given on the day previous to coursing* is differently ordered by different sportsmen with regard to the time, quality, and quantity. But the time is comparatively indifferent, as it should depend on the quality and quantity given, on the constitution of the animal, and somewhat on the hour the dog has been accustomed to. Strong food and a large meal should be given not later than noon; but a light and easily digested meal may be given as late as six or even eight in the evening. Probably the safest practice is to give breakfast rather heavier than usual at eight, a light dinner at three, perhaps a few laps of old buttermilk at eight in the evening; and, at eight in the morning of running, a thin slice of nice toast, cut into small bits and spread with fresh butter, or dipped into a beat-up egg. But the feeding for ten days before is of greater importance.

1943. *On greyhound feeding generally* we refer to what we have said as to hounds, p. 419. and to Mr. Welsh's 16th vol. of Thacker's *Remembrancer*. The best system of feeding, however, whether in general or during training, is greatly counteracted if dogs are allowed to be infested with worms. Therefore, when a dog passes worms, or stares in his coat, mash him for two days with light soft cooling food, such as well boiled porridge made of mixed barley meal, oatmeal, and linseed jelly, rendered thin with weak soup, or with broth composed of barley and carrots, or with old buttermilk. On the third day give him a ball consisting of half an ounce of turpentine soaked in flour, and immediately thereafter a tablespoonful of castor oil, or of linseed oil, or of syrup of buckthorn. See that he does not vomit the dose, and let it be worked off with weak soup, the dog being always allowed to run about immediately after getting a quantity of soup. Next two days give gentle exercise, and mash as before. On the third day repeat the worm dose. If not in training let the dog thereafter have his accustomed food and exercise: but, if in training, let him for two days have gentle exercise and soft nourishing food, and then, day after day, increase his exercise in length and severity, and his food in strength and quantity, till within three days of his engagement, when the exercise and food should be gradually lessened. We may add, that it is useful twice a week to mix a teaspoonful of sulphur among the food of any dog, whether he is being trained or not.

Subsect. 2. *Training Exercises of the Greyhound.*

1944. *The training exercises of the ancient coursers* offer no bad patterns for those of the moderns. Arrian says, "Four times a day, at least, take your dogs out of kennel to a level and open field, and there loose them from couples, to empty themselves, gallop, and run about; but if they have quite ceased coursing, let it be done more frequently. Slip them in pairs, a brace at a time, so that by contending and playing with each other they may enjoy their pleasure, and take their exercise together; but on no account let many loose at once, as they sometimes do great mischief by falling on each other." (P. 99.) Old Gervase in his *Countrey Contentments*, recommends that "every morning before sunrise, and every evening before or after sunneset," you train thus: "as soone as you have opened your kennel, and rub'd your dogge over with a cleane haire cloath, you shall let him play a little about you before the kennel dore, then take him up into your leashe, and walke him forth into the fields, where for the most parte are no sheepe or other smal cattell, which they may out of wantonness indaunger, and there let him loose, and give him leave to play and scope about you, so that he may skummer and emptie his body; which when he hath done sufficiently, you shall then take him up in your leash againe, and so walke him home and kennell him: this you shall doe after the same manner in the evening, and also if your dogge bee stronge and lustie, at night after supper, and then bringing him home, bring him to the fire, and there let him stretch and beake themselves, and with your hand grope and cleanse them from ticks and other filth, which done leade them to the kennell, and shut them up for all night." Mr. Thacker on this subject directs that the greyhounds in training "be taken out the fore part of every day (Sundays excepted) with a man on horseback (*fig.* 295.), he going a gentle trot, say six or seven miles an hour, for a few miles on the road and back again;" and says that "four days in the week will be enough for this sort of exercise; or on one of those four, a gallop of one or two miles with horses, or even one course for each brace of dogs, will tend to promote their future strength; but an interval of a day now and then from galloping will induce them to gallop more eagerly those days that they are loosened for that purpose." (Vol. ii. p. 344.) The late Lord Rivers attributed much of the condition in which his dogs were seen, to their having the advantage of the Newmarket Beacon Course to exercise on. "The feeder and manager," we are told, "mounted on horses to gallop on half a mile, while other men were holding the dogs ready to slip when the whistle was given, and away they went, the horsemen galloping forward till the dogs overtook them, by which they gave them a good stretching gallop as far as they thought ight." Daily rubbing or brushing is as "salutary for the greyhound as for the raceorse," Arrian says, "for it is conducive to the firmness and strength of his limbs, renders is hair soft and skin shining, and cleanses it from all foulness." (P. 96.)

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GREYHOUNDS IN TRAINING EXERCISE.

1945. *The kennelling of greyhounds* should equal that of foxhounds in amplitude, proporoned to the number of inmates, and in the conveniences afforded for the change of lodgingooms while one set is airing, cleaning, &c. The general temperature of the kennel for reyhounds should be somewhat higher than that for foxhounds, to keep them in that forced ate of capacity for extraordinary exertion which their competitions in the field require. toving, &c. will warm any apartments; but with warmth, be it remembered, full ventilation required for robust health. The greyhound kennel is apt to be not sufficiently ventilated, nd however well it may be flagged down, the transpirations from the bodily surface of the mates and from their lungs, even independently of their evacuations, would taint the air they breathe. But when to this source of impurity are added the ammoniacal gasses which escape from the excretions, it is no wonder that in some kennels the dogs lose their coats and condition too: neither can any dog so circumstanced run to win against one kept in a well ventilated kennel. To keep the greyhound apartments warm and yet sweet, they should be very lofty and ventilated upwards, so as to prevent the cold air from sweeping over the dogs, as is the case with common windows on the level. If the dogs are loose, which it is better for their healths that they should be, swing doors may be hung, so that they may go in and out to empty themselves, which they should be taught to do. If they must be chained up, the kennel should be freed from all filth every hour or two; but we again revert to the benefit of swing doors, to let the dogs go out into a small court at pleasure. It would be well, also, that a grass plat should be attached, into which the kennel tenants should be allowed to go for exercise and play. For the younger dogs this is more particularly advisable, as close confinement is apt to beget rickets in them, and also subjects them to fits, and to an early attack of distemper: or should they escape these evils, they will probably come out crook kneed and splay footed. Greyhound whelps, it may be observed, seldom have dew-claws; but as they are occasionally seen in some breeds, the litter should be examined, and if any such are found the third or fourth day after whelping, cut them off close.

1946. ***Warmth***, we again repeat, is essentially requisite to keep greyhounds in health and in blooming condition; but we have seen them kennelled without so much attention to due warmth as we think is necessary. Why not keep them artificially warm as well as race-horses? They want not heat when they travel slowly, as their body-clothes supply it, and in exercising their exertions afford it: but why not warm their apartments when not in exercise? and yet there are few greyhound kennels so warmed, although a genial warmth in the kennel may be excited readily and conveniently in various ways. When coursing dogs have been subjected to great fatigue, and perhaps to inclement weather, a little warm brandy-and-water made weak may be given with advantage; and on their return home a bath of ninety degrees of heat is a great restorer: but care must be taken to wipe the dog dry, as well as to swathe him in flannel afterwards, or to put on a dry body suit. Nothing tends to invigorate the frame so much as a warm bath, unless the exhaustion be extreme, when weak brandy-and-water is the most efficient remedy, poured down the throat in small quantities. We have had occasion to mention a blue bitch, a daughter of the celebrated Millar dog, and also of a very small black bitch, a winner at Swaffham. These ran a hare on the Essex marshes, a course computed by numerous witnesses to be considerably more than three miles. Neck and neck they reached a ditch and bank, which the hare had the moment before crossed. The ditch they rolled into, but neither could mount the bank; both lay gasping below, and as every one thought in an expiring state. We first drew a little blood from each; brandy was at hand, and water the ditch supplied; the leathern case of the bottle represented the drenching horn, and some was poured down the throats of each. They were then put into a well littered cart and taken gently home, more dead than alive; but the next day both were out of all danger. Here we think the abstracting only a very few ounces of blood from the neck vein of each dog relieved the overcharged lungs, and the brandy-and-water, exciting the languid circulation, set all the body works going at once. Perhaps the best arrangement is to have the kennels ventilated below as well as above, *i. e.* the floor to be of wood, and ventilated below, so that it may be as dry as an upper floor: and the upper ventilation to be effected by holes, a foot or so square, opposite each other in the highest parts of the gable walls; and the fire to be lit when the dogs are out, so that the kennels may be purified and comfortable when the dogs return.

1947. *Body-clothing is another mode of keeping up heat.* It should be used only in a strange kennel, or if dogs are cold; for when stripped, and having to wait some time before a hare is started, the dogs are liable to become benumbed, and probably by that alone are often distanced. Body-clothing for greyhounds is usually made of warm cloth of any colour, according to the fancy of the owner, and so fashioned as to slide over the head, fit neatly across the chest, being fastened underneath the body with tapes, as seen in *fig.* 296. The use of body-clothing for greyhounds is of great antiquity. The translator of Arrian informs us that Xenophon describes such clothing as in use for harriers in his time, and that it was kept in its place by broad straps. We are further informed, that the feet of the hunting dogs were also protected with shoes: — "*Canibus venaticis dorsum integunt pannis diversorum colorum, adversus frigoris injuriam, præcipuè leporariis; et pedibus adhibent calceamenta, quò facilius illæsi cursum exerceant.*" (They covered the backs of

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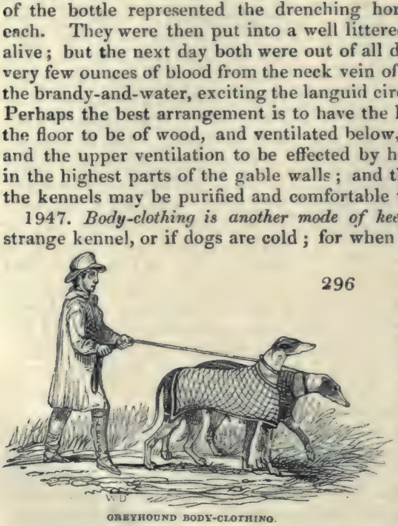

GREYHOUND BODY-CLOTHING.

the hunting dogs with cloth of various colours, to defend them against the bad effects of cold, especially in the warrens; and they put shoes on their feet to enable them with the greater certainty to pursue the chase uninjured.) "Beckman states that the dogs of Kamschatka are also furnished with shoes so ingeniously made, that the claws project through small apertures." (*Translation of Arrian*, p. 97.)

1948. *Collars and slips* are also parts of the greyhound's dress and appendages, and are of two kinds; a strong one attached to the slips, and a very slight one, of some fancy colour, worn during the course, to guide the judgment of the judge, when the colour of the dogs are not a sufficient distinction. The slips which connect and hold the greyhounds are important articles in coursing practices, inasmuch as upon the perfection of their mechanical action being such as to liberate both dogs at the same instant, depends their own value, and much of the value of the start. The collars to which they are attached are now of leather, as metal collars stained the neck. The Newmarket slips have long been in vogue, as not being liable to entangle the dogs with each other. (See *Coursing Slips*, p. 597.) The ancient slip or slippe, the translator of Arrian informs us, "was formed by a leading thong or lyam, passed through the ring of the dog's collar, the two ends being held in the hand of the slipper or keeper. When the dog was loosened, the slipper let go one end of the thong, and drew the other with his hand from the eye of the collar, whereby the dog was liberated with the collar on his neck, the lyam remaining in the slipper's hand." (*Arrian on Coursing*, p. 119.)

CHAP. II.

THE PRACTICE OF COURSING, ANCIENT AND MODERN.

1949. *The practice of coursing* may with propriety be divided into the ancient and modern. In olden times it was conducted with much ceremony, but with little fairness towards the pursued, against which every means, fair and unfair, was directed at one and the same time. Not content with a motley group of dogs of various kinds, the huntsmen were armed with bows, spears, darts, &c. Nets and toils were also carried, to make the work of destruction more sure: nor was it until the time of Arrian that coursing assumed the character of an organised and manly sport, in contradistinction to that of a murderous crew sallying forth, bent on destruction, let the methods or means be what they might. The modern practice, it must be allowed, is studiously framed to bring the pursuer and the pursued as nearly on a level as possible. All unfair means are reprobated among modern coursers; and now in private, as in public coursing, the taking of the hunted animal is not the chief object in view, so that the modern sport bears the character rather of a trial of the comparative merits of two competing dogs, apart from the beauty of the course itself, than of a pursuit engaged in merely for the destruction of the hare.

SECT. I. *The Practice of Ancient Coursing.*

1950. *The coursing of the ancients*, it must however be allowed, exhibited more masculine features than that of the moderns; for in early times it was not the hare only that was pursued with fleet dogs, but the stag, the wolf, the wild goat, the fox, and indeed every swift animal, was then an object for coursing. As civilisation progressed, field sports became more methodised; hare coursing, in particular, assumed somewhat of a select character, and became an organised and favourite sport, in which a certain variety of the *celeres* of the ancients, known even then as the *Canis Leporarius*, or type of the greyhound of our times, figured. As the elder Xenophon left us a full dissertation on hare hunting with hounds packed in numbers, which appears to have been in his time the method principally, if not wholly, employed; so Arrian, known as the younger Xenophon, has presented us with an excellent descriptive account of the greyhound and his performances, which had then become very popular.

1951. *Arrian's account of hare coursing among the Celtic Gauls*, with whom it would appear to have originated, draws a comparison between hunting and coursing well worthy the attention of the curious. Hunting, as it was conducted in Xenophon's time, employed the combined machinery of a diversity of dogs, some of which were swift of foot, and others keen of scent; it also included gins, nets, and ambushings. In coursing, on the contrary, "they neither ensnare the animals with toils, nets, or springes; nor employ, in short, any other tricks or wily inventions, but contend with them in a straightforward trial of speed. And to me the two spectacles appear nowise akin, the former being like thievish depredation, the latter like a battle fought out with main strength; the one class of sportsmen resembling pirates in their clandestine attack, while the other are as openly victorious as were the Athenians over the Medes in the naval engagement at Artemisium, or at Salamis and Psytalia, or again at Cyprus." (*Arrian on Coursing*, p. 129.) The more opulent Celts coursed after the following manner: — "They usually employed hare finders, but when this was not done, they went out commonly in a company on horseback, when they beat the likely grounds, and on starting a hare, the greyhounds were let loose after her: those who were more keen after the sport used to go on foot, and if any one accompanied them on horseback, it was his business to follow the dogs during the course. It is singular that, after the lapse of many centuries, the mode of beating for a hare, in coursing, should be now exactly what it was anciently. The company were drawn up in a straight rank, either horse or foot men, and proceeded at certain distances from each other, in a direct line to a given point, and wheeling round that they might not go over precisely the same track, they beat the ground regularly back. This practice is still continued. A person was appointed to take the command of the sport; if there were many dogs out, he gave orders that such and such dogs should be slipped, according as the hare took to the right or left, and these orders were punctually obeyed. The Gauls sometimes mixed and used finders with their greyhounds, and while these tried to find the hare, the greyhounds were led by the hand at a small distance, taking care, however, to lead them where the hare was most likely to come; and here the greyhounds pretty well supplied the use of Xenophon's nets. This method of coursing was deemed irregular, as the stoutest hares were so alarmed with the cries of the finders, that if they did not start a very considerable way before, they were sure to be killed. This method is very much practised in some parts of Great Britain, to the great consolation of those who think no course worth seeing unless there is a hare at the end of it. A young hare when found sitting was not disturbed, as it was considered unfair to run the greyhounds at her; but with the finders (who are said to have been very eager through hunger, and so desirous of eating up what they caught, that it was difficult to get them off, even by beating them up with sticks) the exercise of this clemency was impossible. On the whole, however, the Gauls were fair coursers."

1952. *The ancient British practice of coursing*, as we heretofore noticed, embraced the chase of deer and foxes as well as hares, and we have reason to conclude that the greyhounds employed were of a size and strength commensurate with the game they were to be entered to. In remote periods of our history, ancient legends glance at coursings of wolves, boars, and martens, which last appear to have been coursed in somewhat later times, since the *Mayster of Game* tells us that in coursing the wild cat "he hath devyllis spyryt."

1953. *Deer coursing was formerly in very high repute*, and history informs us that Queen Elizabeth, when not disposed to hunt, amused herself by witnessing from a convenient station, the coursing of deer with greyhounds. "At Cowdrey in Sussex, the seat of Lord Montacute, A. D. 1591, one day after dinner the queen saw from a turret sixteen bucks, all having fayre lawe, pulled down with greyhounds in a laund or lawn." "Deer coursing was divided into two sorts; the paddock and the forest, or purlieu. For the paddock coursing, besides the greyhounds, which never exceeded two, and for the most part consisted of one brace, there was the teazer or mongrel greyhound, whose business it was to drive the deer forward before the real greyhounds were slipt. The paddock was a piece of ground generally taken out of a park, and fenced with pales or a wall; it was a mile in length, and about a quarter of a mile in breadth, but the further end was always broader than that which the dogs started from, the better to accommodate the company in seeing which dog won the match. At the hither end was the dog-house (to inclose the dogs that were to run the course), which was attended by two men, one of whom stood at the door to slip the dogs, the other was a little without the door, to let loose the teazer to drive away the deer. The pens for the deer intended to be coursed were on one side, with a keeper or two to turn them out; on the other side, at some distance, stood the spectators. Along the course were placed posts; the first, which was next the dog-house and pens, was the law-post, and was distant from them one hundred and sixty yards, the second was the quarter of a mile, the third the half mile, the fourth the pinching-post, and the fifth marked distance; in lieu of a post was the ditch, which was a place made so as to receive the deer, and keep them from being further pursued by the dogs. Near to this place were seats for the judges, who were chosen to decide the wager. So soon as the greyhounds that were to run the

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DEER COURSING IN EARLY TIMES.

match were led into the dog-house, they were delivered to the keepers, who, by the articles of coursing, were to see them fairly slipt; for which purpose there was round each dog's neck a falling collar, which slipt through rings. The owners of the dogs drew lots which dog should have the wall, that there should be no advantage; the dog-house door was then shut, and the keeper turned out the deer; after the deer had gone about twenty yards, the person that held the teazer loosened him, to force the deer forward; and when the deer was got to the law-post, the dogs were led out from the dog-house and slipt. If the deer swerved before he got to the pinching-post, so that his head was judged to be nearer the dog-house than the ditch, it was deemed no match, and was to be run again three days after; but if there was no such swerve, and the deer ran straight until he went beyond the pinching-post, then that dog which was nearest the deer (should he swerve) gained the contest; if no swerve happened, then that dog which leapt the ditch first was the victor; if any disputes arose, they were referred to the articles of the course, and determined by the judges."

1954. "*In coursing deer in the forest or purlieu*, two ways were used; the one coursing from wood to wood, and the other upon the lawns by the keepers' lodges. In the first some hounds were thrown into the cover to drive out the deer, whilst the greyhounds were held ready to be slipt where the deer was expected to break; if the deer was not of a proper age and size, the dogs were not let loose; and if, on the other hand, he broke at too great distance, or was otherwise deemed an overmatch for one brace, it was allowable to way-lay him with another brace of fresh greyhounds. For the coursing upon the lawn, the keeper had notice given him, and he took care to lodge a deer fit for the purpose, and by sinking the wind of him, there was no danger of getting near enough to slip the greyhounds, and having a fair course." (*Rural Sports*, vol. i. p. 487—489.) Turberville, in "a short observation set downe by the translatour, concerning coursing with greyhoundes," attached to *The Booke of Hunting*, has given us his remarks on coursing deer, and the method of doing it in the olden time with *teasers*, "to start the deare from the whole heard, or make a low deare strain;" *side laies*, "to way-lay him by the midway;" and *back-sets*, or *receits*, to meet him "full in the face — to the end they may the more amase him." (See *Turberville's Appendix* to his translation of Fouilloux, and *The Governour*, b. i. c. xvii.) *The Booke of Hunting* has, "A red deare will beare sometimes foure or five brase of greyhounds before they can pull him downe: such wonderfull force he is of, and can so easily shake off a greyhound when he pincheth him." It is, however, added, "He that hath a good hare greyhound, shal do very evill to course a deare with him, for it wil both bruse him and make him lyther; and the course at the hare is much the nobler pastime." Notwithstanding which, it appears that our ancestors were extremely attached to deer coursing, and that they bred and trained up strong and swift dogs with great care for the purpose. One, whose occupation was demanded of him, replies, —"I am a hunter to one of the kings. How do you exercise your art? — I spread my nets, and set them in a fit place, and instruct my hounds to pursue the wild deer till they come to the nets unexpectedly, and so are entangled, and I slay them in the nets. Cannot you hunt without nets? — Yes, with swift hounds I follow the wild deer. What wild deer do you chiefly take? — Harts, boars, and reindeer, and goats, and sometimes hares," &c. Arrian also says, "You should course the stag, or any game of equal size, in the same way, by slipping high couraged hounds; for the animal is large, runs a long while, and is by no means safe to contend with; indeed, there is no little danger of a greyhound being destroyed by a stag. But where the plains are adapted for riding, as in Mysia, Dacia, Scythia, and Illyricum, they are in the habit of coursing deer with Scythian and Illyrian horses, which, though slow at first in pursuit, and utterly despicable as far as appearance goes, by the side of those of Thessaly, Sicily, or Peloponnesus, hold out to the last under the most severe work. On such occasions you will see the huge, swift, proud-looking horse flagging, and this lean and scrubby little animal at first passing him, then leaving him behind, and at last even driving the stag away from him. He holds on, indeed, until the stag gives out and stops, gasping with distress, when you may, if you choose, spear him at close quarters as if unfettered, or throw a noose over his neck, and lead him away alive. In Africa there is a mode of coursing on Libyan horses, called Nomades, on which the sportsmen, mounted, catch not only red and roe deer (for these are taken with little effort, and the horses are not esteemed good in consequence), but also wild asses, which excel in speed and power of holding out for the greatest length of course." (*Arrian on Coursing*, p. 127.)

1955. *Fox coursing is thus described by Blome:*—"In coursing the fox there is required no other art than to stand close and on a clear wind, on the outside of some grove where you expect his coming out, and then give him head enough, otherwise he will turn back to the covert, for the slowest greyhound will be swift enough to overtake him; and all the hazard of this course is the spoiling your dog by the fox, which ofttimes happens; and therefore you should not run any that are worth much at this chase, but such that are hard bitten dogs and will seize any thing." (P. 97.)

Sect. II. *The Modern Practice of Coursing.*

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GREYHOUNDS TRAVELLING TO COURSING MEETING.

1956. *The practice of modern coursing* may be dated from the time of Elizabeth. Under her auspices it became a fashionable pursuit; nor has time diminished the hold it took on the regards of the sporting public. To further, methodise, and give stability to its practice, a code of laws was framed by the Duke of Norfolk, himself a lover of the leash, that became the stock on which the rules observed at coursing meetings were ingrafted. From that time it became an organised pursuit, and was very generally encouraged. Among the eminent characters who, after the Duke of Norfolk, particularly patronised it, was the late Lord Orford, of Houghton Hall in Norfolk, who lent his whole powers to the promotion and improvement of it; particularly he had in view the improvement of greyhounds, both as regards their form and qualities. He commenced by crossing the breed with the lurcher, the Italian greyhound, and, as we have been given to understand, with the foxhound also, and lastly with the bull-dog. By the first cross he hoped to gain an accession of attention and teachableness. From the diminutive Italian greyhound he reckoned on increased delicacy of skin, lightness of form, and quickness of motion; and by what we deem the most exceptionable cross with the bull-dog, he expected to gain a small ear, a finely tapered tail, a sleek coat, and a savage determination to kill; and after seven removes he is said to have gained these valuable points. On these he had so set his heart, that he was blind to an alleged propensity introduced into the breed, when at all at fault or out of view, to stoop to scent. A prejudice also existed against this cross, from the disposition to brindled markings, which are considered as proofs of low breeding or stain in blood. However, some of the best dogs that ever ran have shown the brind — witness Major and Sylvia. Many dissentients, however, arose to these alleged improvements gained by the cross breedings of Lord Orford. Mr. Thacker does not even allow the originality of the idea, Markham having long before abused it. Mr. Munday, a very celebrated sportsman alleges, that he never yet met with a thoroughly good brindled greyhound. Lord Rivers likewise tried the experiment of breeding from a half bull and half greyhound bitch, whose progeny he recrossed for six or seven generations with his own greyhounds, but he found them getting worse and worse, and therefore abandoned them. Lord Orford must, however, be considered as one of the most zealous professors and experimentalists that this sport ever boasted of. His love of coursing was unbounded, and it remained with him to the last; and indeed he literally died in the coursing field, viewing the winning of his Czarina. The memory of the Earl of Orford, therefore, may with propriety be introduced as a toast at every coursing meeting, as the father of its sport.

1957. *The celebrated Czarina* was bred by this distinguished sporting nobleman, with whom she was a great favourite. The *Sportsman's Guide* says, " She won forty-seven matches without ever being beat; but what was equally remarkable, she never showed the genial desire till she had attained her thirteenth year; when Jupiter (belonging to Lord Orford) was put to her, and she produced eight whelps; they were all reared, and proved excellent runners; two of which, Claret and young Czarina, challenged all Yorkshire, and won their matches. In a short time after Lord Orford's decease, his greyhounds came under the hammer of the auctioneer; when Colonel Thornton, of Thornville Royal, Yorkshire, became the purchaser of Czarina, Jupiter, Claret, and most of the best dogs, giving from thirty to fifty guineas each; thus the select blood of the Norfolk dogs was transferred to Yorkshire. When, however, the Norfolk dogs came to be tried against the hares found on the Wolds of Yorkshire, they appeared to some disadvantage; for though their speed was unquestionable, yet as they had not been used to run in a hilly country, whenever the hare made a short turn by the side of a hill, they were unable to stop themselves, and generally lost the hare: nevertheless, it was unanimously admitted that they ran with amazing energy, and always at the hare; and that though beaten, they did not give in, or exhibit any symptoms of lurching or waiting to kill.

1958. *Claret was put to a favourite bitch* belonging to Major Topham, of the Wold Cottage, Yorkshire, which produced three of the best greyhounds ever seen before or since: viz. Snowball, Major, and Sylvia. Major was one of the two whelps sent to Colonel Thornton, as a sporting privilege for the use of the dog. Snowball and Sylvia were the property of Major Topham: all three won every match for which they ran. In some private trials, Major appeared rather superior in speed to Snowball; but the latter was admitted, nevertheless, to be the best and most perfect greyhound ever produced: all countries were alike to him; and though trained where fences seldom occur, his superiority was not less conspicuous when taken into the strongest inclosures; while he was equally remarkable for wind, and the power of running up long hills. He won ten large pieces of silver plate, and upwards of forty matches, having never refused a challenge, though many of the most famous dogs in Great Britain were brought to run against him; and at length he challenged the whole world, but found no one to accept it. He was a beautiful jet black; while Major, his brother, as well as Sylvia, was a brindled yellow. It is generally admitted that this first cross, uniting the Norfolk and the Yorkshire blood, was superior to any thing seen either before or since. Nevertheless, the progeny of the Snowball family, though perhaps inferior to their progenitors, are still much sought after, and allowed to be the first breed in the kingdom. Lord Orford once issued a general challenge, which Lord March (afterwards Duke of Queensbury) accepted, though he was not in possession of a single greyhound. This nobleman, however, applied to Mr. Elwes, of parsimonious memory, who recommended him to Captain Hatt, an elderly sportsman of Berkshire, who produced a greyhound that, in a common country, beat a dog which Lord Orford regarded as a phenomenon. Dogs will, almost uniformly, run the best in those countries where they have been trained; and most likely, had Lord Orford confined the trial to his own district, he would have won with ease. Snowball, however, as before remarked, was a remarkable exception, and in all places manifested a decided superiority. In thus distinguishing the Norfolk and Yorkshire greyhounds it must not be supposed, though they were acknowledged to be superior to all others, that they were the only dogs of this kind which merit distinction. Wiltshire, Derbyshire, and Lincolnshire have produced good greyhounds; and Mr. Chaplin, of the latter county, maintained some spirited contests against Lord Orford, but was in general beaten, upon a well founded opinion, that it was in consequence of taking his dogs out of a good country into a bad one; or, in fact, into a very different country from that in which they had been trained." (P. 138—140.)

1959. *Snowball for several years served greyhounds at 3 guineas each.* The first year he had ten, the second fourteen, the third eleven, and the fourth seven. Of these engagements two came from Wales, two from Scotland, one from Norfolk, and many others from distant counties. Young Snowball was first sold for 50 guineas, and afterwards for 100; and as plain prose may be too feeble for the task, Sir Walter Scott has thus immortalised the memory of this celebrated greyhound: —

> " 'T was when fleet Snowball's head was waxen grey,
> A luckless lev'ret met him on his way:
> Who knows not Snowball? He whose race renowned
> Is still victorious on each coursing ground;
> Swaffham, Newmarket, and the Roman camp,
> Have seen them victors o'er each meaner stamp.
> In vain the youngling sought with doubling wile
> The hedge, the hill, the thicket, or the stile;
> Experience sage the lack of speed supplied,
> And in the gap he sought, the victim died."

1960. *The southern parts of the kingdom* have also been enabled to boast of their hounds among the long dogs. Millar, belonging to Sir H. B. Dudley, possessed no small notoriety, and we ourselves once owned a daughter of this celebrated runner. She was blue in colour, of moderate size, perfectly formed, and when she came into our possession was beginning to run too cunning for match coursing; but for ordinary coursing it must have been a very extraordinary hare that could escape her even in her decline. " The sire of Millar was an Essex dog Tulip, by a blue Newmarket dog, and he was the produce of a bitch by a Lancashire dog, bred by the late Mr. Bamber Gascoigne. Millar was a large deep chested dog, of a fawn colour, and whilst young did not discover any pretension to his future reputation. He was afterwards tried in the Essex Marshes, and in a single day he beat no less than five of the first and best dogs in the field. His superiority continued for some years, and he won upwards of seventy matches. His stock also proved excellent runners, and Miss, one of his daughters, received the Bradwell cup from twelve opponents who had been run down to a brace." (*Pierce Egan's Book of Sports*, p. 390.)

1961. *The mantle of Lord Orford* rested on the shoulders of his friend Lord Craven, who was the patron and founder of the Ashdown Park Coursing Meeting at Lambourn, in Berkshire, where the most celebrated patrons of the leash were to be met. Lord Rivers must also be particularly noticed as an ardent admirer of the sport of the leash, which he greatly encouraged, as well by his influence and abilities as a breeder, as by his plentiful fortune and extensive domain. The late Duke of Gordon likewise was, in every sense of the word, a friend and an ornament to coursing.

1962. *Of female coursers* we have already brought forward one of royal dignity in the person of Queen Elizabeth; but we conceive that, in point of devotion to the sport, she even must yield the palm to Miss Richards, of whom, when residing at Compton Beauchamp, near Ashdown Park in Berkshire, some very interesting particulars are detailed in the *Stud Book*, to which we would refer the inquisitive reader for a full account of the peculiarities which marked her character. Although possessed of considerable personal charms, a strong mind, and large property around her, she preferred a state of single blessedness to connubial joys or toils, as the case might prove. By choice her own mistress, she divided her time between the management of her domestic affairs, the exercise of unbounded hospitality, and the rearing and training of dogs: to these, as objects of her especial regard, every thing and every person was forced to give place. It is however a redeeming trait in her character, that her prime favourites were the long tails, and her principal amusement the leash. "Not a day," says the accomplished editor of the *Stud Book*, "passed during the coursing season, fair or foul, on which this indefatigable sportswoman was not dragged in her coach and six to the downs, where, springing out on her native turf, she *coursed* on foot for the rest of the morning, sometimes walking a distance of twenty or twenty-five miles ere she re-embarked on board of the tub of state steered by an old body coachman, aided by assistant swabbers in full costume. Miss Watts, an adopted child, was left at her death conservator-general to the canine relics, whose aversion to the celibacy of their former mistress long continued to furnish the neighbouring kennel of Lord Craven with some of his best blood.

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MISS RICHARDS, THE COURSER.

SECT. III. *Match Coursing and its Localities.*

1963. *Swaffham Coursing Society*, we believe, claimed a priority in date of existence over every other coursing club in the kingdom, and in importance we believe it yielded to none. It was founded by Lord Orford in the year 1776, and from its commencement it was agreed that the number of its members was to be confined to the letters of the alphabet, and also that the letter which each member chose was to be the initial of his dog's name. It was necessary likewise for each member to assume a colour, and any vacancy which occurred among the members was filled up by ballot. At Lord Orford's decease, the addition of a silver cup to be run for annually was agreed on; and further, that the said cup was to be transferable after the manner of the whip at Newmarket. Previous, however, to starting for it in the year 1792, it was agreed that the winners should keep it, and that another of 50 guineas' value should be annually purchased and contested for by sixteen greyhounds belonging to the members. The coursing grounds were Westacre Field, Cockly Cley, and Narborough. We are happy to hear that it is in contemplation to restore this famous old club, and sincerely wish it success.

1964. *Ashdown Park Meeting*, established by Lord Craven in 1780, always congregated the stars of the coursing gentry, as well by the zeal and management of the noble founder, as by the peculiar nature of the country, which being almost entirely down land, offered every incentive to coursing. The early prizes were silver collars, which were continued until the death of Lord Craven about 1792, when annual cups were substituted for collars. From some particular circumstances the late Earl Craven becoming less friendly to coursing than his predecessor, destroyed the hares in Ashdown Park, which occasioned the meeting to be removed to Marlborough, where it was held for some years, until the noble lord was pleased again to encourage the breed of hares, and to invite the members back again. Mr. Goodlake observes of Compton Bottom, that it is peculiarly fitted to try both the speed and wind of greyhounds, being a carpet-like down with a gradual rise of a mile or more towards the rubbing-house, to which the hares always direct their course for safety. This locality appears to be equally favourable to the breeding of hares, as it is to their preservation, by the quantities of a course matted grass which cattle will not touch; consequently it forms a permanent protection to them. A flat near the rubbing-house is particularly calculated for viewing the sport, and here a large assemblage of elegant equipages graced with ladies is usually seen on the days of meeting. It was here also that Miss Richards, whose sporting mania we have noticed, was wont to exercise her favourites. Weyland Smith's Cave, noticed in Sir Walter Scott's *Kenilworth*, is a *lion* contiguous to this spot. Mr. Goodlake, whose reputation as a finished courser is well known, is here at home in every sense of the word, for his residence is near, and the coursing of the third day of the meeting takes place on Letcombe Bowers, which is a part of his property.

1965. *A sweepstakes of a novel character* has been occasionally got up here after the following manner: — A trap, containing a hare, was sunk in the ground, at a certain distance from which the dogs were stationed in a row, each held in hand by a servant, and each wearing a riband, of a determinate colour, to distinguish him by. The hare being started, the dogs were all at once let loose (*fig.* 300.), and the dog which first reached the hare was the winner. This hurry-skurry, as Mr. Goodlake observes, is well adapted to try the speed and determination of the greyhound; but however exciting it may be to some, we think it can have few charms for the lover of legitimate coursing.

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COURSING SWEEPSTAKES.

1966. *The Malton Coursing Meeting*, established in 1781, was limited to twenty members, and the meeting took place twice in the season. The first occupied a whole week in November, and the second commenced on the first Monday after the 15th of February. Silver cups were at first the prize contended for, next a goblet, and then a fifty guinea cup, which was run off in a class of sixteen dogs. But this meeting has now dwindled to a mere shadow of its former greatness, most of its distinguished supporters having paid the debt of nature, or withdrawn from public coursing. Like other exclusively agricultural districts, Malton has seen its sports transferred from the aristocracy of land to the aristocracy of commerce and manufactures in their own more immediate neighbourhoods. Our nation of shopkeepers are also a nation of sportsmen, whether on the turf, the hunting-field, or the coursing ground.

1967. *Louth Coursing Club was set on foot in* 1806. At first two annual meetings were held, and then one only took place on the third Monday in November. Open meetings were next held with much success: but, at present, public coursing is suspended there, and the public courser who now repairs to Lincolnshire must take, as trial-ground, the broad meadows and wide ditches presented at Barton-on-Humber.

1968. *The Newmarket Club* meet twice instead of thrice during the season as formerly, viz. in the favourable months for sport, of November and February. They are both open meetings, and the sport on each occasion extends over three or four days. We need scarcely say that the locality is most favourable, and the accommodation of the town unexceptionable. Chippenham Field, Exning Field, and Allington Hill, are the meets. At Newmarket, as over Wiltshire, Berkshire, and the Lincolnshire wolds, it is usual to slip a dog only once in a day, — a practice induced chiefly by the severity of the courses, and to be commended by all who wish to see greyhounds compete, as nearly as possible, on equal terms. A greyhound that wins his course over such truly racing countries, in a reaching run long enough to try the wind of a well-jockeyed thorough-bred while carrying the judge in view of its windings and stretchings, is entitled, by a due regard to the animal and the sport, to have one night's rest, before his gallant nature is challenged to give another demonstration of its unflinching and uncompromising heroism. A correspondence that took place in *Bell's Life*, at the end of 1857, disclosed the curious fact that the Newmarket meetings have been governed by antiquated rules, three only out of twenty-five being applicable to meetings at the present day.

1969. *The Cardington Club* holds a club meeting in November, and an open meeting in December. It enjoys the privilege of coursing over a country, rich to the eye of an agriculturist, lovely to the gaze of an admirer of cultivated beauty, and charming to the sight of a sportsman, who rejoices in a light soil spread out in extensive slopes. The courser may well for a moment forget his anticipation of the superior sport he is sure to enjoy as he draws near the meet at Cardington — a choice specimen of a sequestered village approached through an avenue of majestic trees!

1970. *Deptford Inn Coursing Club* was established in 1819, and has always ranked high in the coursing annals. Fisherton-de-la-mere is the scene of action; and the extreme care in preserving the game makes the hares as plentiful as the coursing ground is fine.

1971. *The Amesbury Champion Meeting* is held five days on Salisbury Plain, the third week in October, when puppies run for a cup for thirty-two, 10*l.* each; a *dog* stake for sixteen, 5*l.* each; and a *bitch* stake for sixteen, 5*l.* each; and all ages run for a similar cup, and two similar stakes. The testing arena of the Wiltshire Downs may be regarded as the Capital of Coursing, to which the most spirited Knights of the Leash repair once a year, to break a gentle lance for the palm of greyhound speed and endurance to be awarded in honour of England, Scotland, or Ireland. Captain Wyndham acts as secretary.

1972. *The Waterloo Meeting* takes place at Altcar near Liverpool at the end of February or the beginning of March, and lasts two days. At this meeting, not only all the crack dogs of England, but also of Scotland and Ireland, assemble to contend for the great prizes of the Waterloo Cup (established in 1836), the Waterloo Purse, the Altcar, and other valuable stakes. The Waterloo Cup, like the Derby or Leger of the turf, is the blue riband of the coursing sphere, and is as much prized by its possessor.

1973. *The Altar Club* was established in 1825 by the late Earl of Sefton, when Lord Molyneux. The Altcar meadows differ from the give-and-take country of the Berkshire and Wiltshire downs and Lincolnshire wolds, and from the ascending sweep of Newmarket Heath, in being a flat, intersected by large ditches, in which strange dogs are apt to plunge, and yield an easy victory to those of the district. A steam-engine pumps a great portion of the water up into the river, which bears it to the adjoining sea. The meadows are thus rendered dry enough for the judge to ride; and the spectators enjoy the sport either from the embankment along the river, or on the plain itself. The drenching which strangers frequently encounter in their attempts to leap the ditches causes many an uproarious laugh. Lord Sefton was a successful courser, and himself managed the field.

1974. *The Ridgway Club* was founded more than sixty years ago by Mr. Ridgway, and is one of the most flourishing one's of the day. Formerly it met only in the first week of December at Southport; but since it was joined by the Union Club, it holds three meetings, viz. one early in November, another early in December, and a third during the first week in February. This latter meeting is substituted for one that formerly took place in March. The Ridgway Lytham Spring Meeting takes place over the excellent grounds of Mr. Clifton. The Clifton Arms at Lytham is said to be one of the most comfortable and reasonable houses in the kingdom, a recommendation that we have the greater pleasure in repeating, inasmuch as some landlords seem to think they cannot be too exorbitant and imposing with sportsmen. At the Ridgway Meetings a cup and several valuable stakes are contended for; also the challenge cup presented by Mr. Ridgway, and any other prizes given to the club, as well as such stakes as may be made up. It is a distinction of this club that honorary and ordinary members are ever and anon generously encouraging the sport by some liberal gift of a purse, piece of plate, or picture. Some years ago Mr. Ridgway gave a splendid piece of plate, which was run for, and won, at one meeting; and he then presented a challenge cup, to be run for annually, the winner requiring to gain it three times. This was won, and he presented another. Mr. G. F. Cooke presented a painting, by Henry Calvert, value 100 guineas. The subject is "The Twelfth of August," and represents with great truth and fine effect an old gamekeeper with a setter and two pointers. It is to be run for once a year, and to be gained four times by one member.

1975. *There are few counties in England* that cannot boast of a coursing club. There are many clubs in Scotland, and they are increasing in Ireland. Open meetings have been established everywhere both for produce stakes, in which the puppies are entered at the end of the previous season, and for stakes, in which dogs of all ages are entered the day before running. It is becoming the custom for the stewards of coursing meetings to advertise under whose rules the meetings will be held, a practice that seems well calculated to obviate difficulties.

1976. *Steam Boats*, but, above all, railways, have lent a great impetus to coursing, enabling the owners of dogs to transport them from one part of the kingdom to another with certainty, ease, and comfort. These meetings bring into competition English, Scottish, and Irish dogs, belonging to coursers of every degree, transported without hardship or loss of time by railways and steamboats.

1977. *Unlimited Open or Champion Meetings* began in Scotland in 1835 by competing for the Glasgow Gold Cup. In 1836, the clubs of Scotland presented a Gold Cup, and in 1837, the amateurs of Mid Lothian gave a Silver Tureen. Then came the Lancashire Cup in 1838, and the Caledonian Gold Cup in 1839. It is matter of regret that the silversmiths being found to get the best of these prizes, the coursing champion is now the winner of an honourable subscription stake, rather than the bearer of an enduring trophy.

1978. *Public Coursers, Public Greyhounds, and Public Coursing,* have been immortalised in three pictures. Lancashire originated the idea, which Ansdell realised with Altcar Meadows for his scene, a mass of coursers for his human portraiture, and a selection of winning greyhounds, and coursing horses, for his animal representation. He repeated it in Scotland, by a view of the Caledonian Meeting at Ardrossan, washed on its shores by the expanding Clyde, overtopped by the noble mountains of Arran, and peopled with the *élites* of the country accompanied by their trusty servants, and successful greyhounds. And the Messrs. Barraud consecrated it, on the never-ending Downs of Wiltshire, before the mysterious pillars of Stonehenge, by canonising a host of the devotees of the sport. These were severally run for, and borne off to decorate the halls of the victors.

1979. *Mr. Goodlake's Courser's Manual and Mr. Thacker's Courser's Companion.* In our humble opinion no courser can do justice, either to his taste or to his reputation as a lover of the long dogs, who does not possess himself of both works. The former we recommend not only for its elegance and the interest it excites, by its varied information on what may, with a little latitude of expression, be called the statistics of coursing, but also by its connection with a valuable yearly supplement, or, as it is named, *A Continuation of the Courser's Manual*, which, like the *Racing Calendar*, carries down all the novelties in the sport, as new meetings, new practices, as well as the names of the great prize winners, &c. &c. Of Mr. Thacker's work we need say little more in its praise, than that we shall make it our *text book*. Coursers are indebted to Mr. Thacker for another valuable work, *The Courser's Annual Remembrancer and Stud Book*. It presents an alphabetical return of all public running, and the pedigrees of all winners and runners up. It commenced with a return of season 1840–41, and has been ably continued by Mr. Welsh since Mr. Thacker's death.

SECT. IV. *Coursing Rules and Regulations.*

1980. *Coursing rules are very important*, both to the practice of the sport and to the harmony which should subsist between the members of coursing clubs. The more clearly these rules are defined the better. "At present," Mr. Thacker observes, "the opinions as to which are the best rules as proper criterions for estimating the relative merits of the contending dogs are very various, not only in the minds of the owners and other amateurs, but also in the minds of the different judges who are appointed to decide the courses at different places. The many fortuitous circumstances there are in a course, the difference in the situation from which different persons view it, and the perpetual variation of the direction in which the dogs are running, tend to mislead; and though last, not least, we have such a variety of opinions on what principles or points courses ought to be decided, that the necessity for rules and principles on which they are founded, being generally established and uniformly recognised, is totally and unquestionably indispensable." (Vol. i. p. 31.) He further remarks, that "The fortuitous circumstances which occur in this sport being so numerous, and presenting themselves in such a variety of shapes, whether or not it may be contended to be the most simplified way to allow every dog the points and advantages he gains, whether gained by merit or by chance." Again, "If you allow chance equal advantages with actual merit, in such case the argument may be carried to such an extent, that it will come at last to that being the best dog which kills the hare, or runs first up to covert, leaving all the beauties of the course quite out of the question, and making a complete nullity of all the laudable endeavours to breed and train greyhounds to perfection, as well as rendering the diversion, now so lively and interesting, quite insipid and unworthy of notice." (*Ibid.* p. 137.)

1981. *The points are what are reckoned by the impartial judge.* Of points of merit Mr. Thacker says, "A go-by, a cote, a turn, a wrench, a tripping, a jerking, or a kill of merit, may be called the fundamental ones. Extra speed, a fair runner against an unfair one, a good fencer against an inferior one, giving a succession of turns or cotes, may be allowed as extra points. An unequal start, and inside turn from the hare running in a curve, not seeing the hare when slipped, or unsighted from other accidental causes, a fresh hare getting up, a third dog slipped, a dog rode over, or running against horses' legs, or other things in doing his duty, whereby he is disabled, are casualties that should be decided by the judge according to the circumstances of the case, and for which no specified rules can be provided, but must be left to his discretion." (*Ibid.* p. 138.) Infirmity of sight, as well as other infirmities, and even untractableness, whether from disposition or want of practice, are defects or demerits in the field, equal to a deficiency of breed, speed, or condition; and any one bringing such a dog to the slips must of course take the consequences of his demerits, for by the same rule that one dog wins by merit, another should lose by demerit. As however accidental circumstances often occasion great appearance of demerit, it requires great quickness in the judge to decide; and as these, like other doubtful cases, rest entirely with the judge's discretion, this is not only a difficult, but often a very unthankful office: it is, however, the only method of settling disputes, and it therefore follows that the more difficult the question is, the greater is the utility of having a competent judge to decide it; and it is clear that without a judge, those disputes would be endless, and the harmony of the meeting would be continually interrupted. But, as Mr. Thacker observes, "with a judge who acts decisively, the matter is set at rest so far as the general proceedings of the meeting are concerned; and the murmurs of the discontented being disregarded, they soon subside." These remarks of Mr. Thacker were made as precursors to the code of rules his mind was intent on framing, and they certainly present an excellent outline of the principles on which all coursing judgments should be formed, although given as outlines only, the inquisitive courser cannot do better than to make a careful perusal of the whole. His illustrative observations, also, the reader should attend to; and if he be led to think them somewhat redundant, let him at the same time well consider their sterling merit, and the quantum of sound argument to be met with throughout.

SECT. V. *Coursing Rules of the Duke of Norfolk with Annotations.*

1982. *We have already noticed the popularity of coursing in the reign of Queen Elizabeth,* who, by condescending personally to patronise it, still further increased its celebrity, and was the occasion of its more complete organisation into a system governed by laws and regulations. The formation of these devolved on the Duke of Norfolk, himself a zealous courser; and how fitted he was for the task we may judge, when we consider that with some not very important alterations, they have continued to guide the coursing practices to the present day. It would seem, however, that there have been two versions of these laws, an earlier and a later, and that the latter was a great improvement on the former; but as it does not appear that the existence of two codes was generally known, the different directions in one to what appeared in the other, occasioned confusion and mystified the practice, of which more anon from Mr. Thacker. Unfortunately, also, the revised code of the noble duke seems not to have been sufficiently promulgated, which neglect proved unfavourable to that early and general amelioration of the practice, which might have been otherwise expected. By presenting both, the reader may judge between them.

SUBSECT. 1. *The First Version of the Duke of Norfolk's Coursing Laws.*

1983. *The first version of these coursing laws* was entitled *The Laws of the Leash, or Coursing,* as they were commanded, allowed, and susbcribed, by Thomas, late Duke of Norfolk, in the reign of Queen Elizabeth, and which are as follow: —

1. Therefore it was ordered that he which was chosen fewterer, or letter-loose, of the greyhounds, shall receive the greyhounds matched to run together in his leash as soon as he came into the field, and to follow next to the hare finder till he came unto the form; and no horseman or footman, on pain of disgrace, to go before them, or on either side, but directly behind, for the space of forty yards or thereabouts.

2. That not above one brace of greyhounds do course a hare at one instant.

3. The hare finder shall give the hare three sohos before he puts her from her lair, to make the greyhounds gaze and attend her rising.

4. That dog that giveth the first turn, if after the turn be given, there be neither cote, slip, nor wrench extraordinary, then he which gave the first turn shall be held to win the wager.

5. If one dog give the first turn, and the other bear the hare, then he which bore the hare shall win.

6. If neither dog turn the hare, then he which leadeth last at the covert shall be held to win the wager.

7. If one dog turn the hare, serve himself, and turn her again, those two turns shall be as much as a cote.

8. If all the course be equal, then he only which bears the hare shall win; and if she be not borne, then the course must be adjudged dead.

9. If any dog shall take a fall in the course, and yet perform his part, he shall challenge advantage of a turn more than he giveth.

10. If one dog turn the hare, serve himself, and give diverse cotes, yet in the end stand still in the field, the other dog, without turn, giving, running home to the covert, that dog which stood still in the field shall be then adjudged to lose the wager.

11. If any man shall ride over a dog, and overthrow him in his course (though the dog were the worst in opinion), yet the party for the offence shall either receive the disgrace of the field, or pay the wager; for between the parties it shall be adjudged no course.

12. If one dog give both first and last turn, and no other advantage between them, that odd turn shall win the wager.

13. That a cote shall be *more* than two turns, and a go-by, or bearing the hare, equal to two turns.

14. Those who are chosen judges of the leash shall give their judgments presently before they depart the field, or else he in whose default it lieth shall pay the wager, by a general voice and sentence.

SUBSECT. 2. *The Second Version of the Duke of Norfolk's Coursing Laws.*

1984. *The second version of these coursing laws was thus entitled:* — "The following coursing rules were established by the Duke of Norfolk in the reign of Queen Elizabeth, and were subscribed to by the chief gentry, and thence held authentic: —

1. That he that is chosen fewterer, or that lets loose the greyhounds matched to run together into his leash, as soon as he comes into the field, and follow next to the hare finder, or he who is to start the hare, until he come into the forms; and no horseman or footman is to go before, or on any side, but directly behind, for the space of about forty yards.

2. You ought not to course a hare with more than a brace of greyhounds.

3. The hare finder ought to give the hare three sohos before he puts her from her seat, that the dogs may gaze about, and attend her starting.

4. They ought to give twelve score yards' law before the dogs are loosed, unless there be danger of losing her.

5. The dog that gives the first turn, if after that there be neither cote, slip, nor wrench, wins the wager.

6. If the dog give the first turn, and the other bear the hare, he that bears the hare shall win.

7. A go-by, or bearing the hare, is equivalent to two turns.

8. If neither dog turn the hare, he that leads last to the covert wins.

9. If one dog turn the hare, serve himself, and turn her again, it is as much as a cote, and a cote is esteemed two turns.

10. If all the course be equal, he that bears the hare shall win; and if she be not borne, the course shall be adjudged dead.

11. If a dog take a fall in a course, and yet performs his part, he may challenge the advantage of a turn more than he gave.

12. If a dog turn the hare, serve himself, and give divers cotes, and yet in the end stands still in the field, the other dog, if he turn home of the covert, although he gives no turn, shall be adjudged to win the wager.

13. If by misfortune a dog be ridden over in his course, the course is void; and, to say the truth, he that did the mischief ought to make reparation for the damage.

14. If a dog give the first and last turn, and there be no other advantage between, he that gives the odd turn shall win.

15. A cote is when a greyhound goeth endways by his fellow, and gives the hare a turn.

16. A cote serves for two turns, and two trippings or jerkings for a cote; and if she turneth not right about, she only wrencheth.

17. If there be no cotes given between a brace of greyhounds, and that the one of them serves the other as turning, then he that gives the hare most turns wins the wager; and if one giveth as many turns as the other, he that beareth the hare wins the wager.

18. Sometimes the hare doth not turn, but wrencheth; for she is not properly said to turn unless she turns, as it were, round; and two wrenches stand for a turn.

19. He that comes in first to the death of the hare takes her up, and saves her from breaking, cherishes the dogs, and cleanseth their mouths from the wool, is adjudged to have the hare for his pains.

20. Those that are judges of the leash must give their judgment presently, before they depart the field.

1985. *The propriety of some of these rules*, and the inconsistency of others of them, Mr. Thacker has been at much pains to point out. He commences by observing, that "The system here adopted of deciding courses by what each dog actually performs, is undeniably the safest and most proper mode of arriving at a true conclusion of which dog is entitled to win the wager. It furnishes a criterion for all descriptions of courses, in all their different ramifications and bearings; the exceeding short course, on which there is often as much difference of opinion as on longer ones; the moderate course, where the dogs are very nearly equal, and would give occasion for argument, as one would allege upon one description of performance being of more value than what the other dog performed, when probably by these rules they are found equal; and the long course, where one has a decided advantage at the first, and the other at the last part of it, whether from one dog being stouter than the other, or one a fair runner and the other an unfair one. It also furnishes a proper distinction between a real and proper turn of the hare, or an imperfect one; and reduces the whole into an arithmetical calculation of each dog's merit, which is so greatly preferable to an imaginary or fanciful conclusion founded on no certain premises. Rules upon this principle are not only more just, but more simplified and convenient; and it is, in some measure, immaterial whether you have two unfair running dogs, or two fair running dogs together, or one of each sort; whether you have two of the hard breed, or two of the soft, or one of each; or whether you have both aged dogs, or both puppies, or one of each of either of those breeds: the number of points gained by each will show their relative merits; and the only question which remains is, the apportioning a fair and equitable value, or number of points, to each performance, consistently towards each other.

1986. "*There being two versions of these rules* has increased the diversity of opinion amongst coursers generally very much, and has led to much confusion; and it appears to me, from many reasons, that the more imperfect, which is probably the original and unrevised one, has been in more general circulation than the other. (This is confirmed by the difference of expression in the heading of each version, and also in the difference of expression of many rules and their corresponding items). I found the revised one in an old pocket yearly calendar, of what year I have forgotten, which a person had preserved on account of some valuable instructions that calendar contained upon gardening: but all the copies of the laws of the leash, which I have elsewhere met with, are of that version which I consider the original and more imperfect one; the different writers who profess to know and to dilate upon the old coursing laws in the sporting periodicals, give evidence that they were governed by that version; a *Treatise on Greyhounds by a Sportsman* quotes that version; *Daniel's Rural Sports*, and others also; besides which, either by tradition or some other source, it has been generally known that there was such a coursing phrase as a *cote*, but not one courser in a hundred, or perhaps in a thousand, knows what was meant by it: I never was fortunate enough to meet with one that could give me any information what it was, and great numbers have made the inquiry of me without my being able to answer the question. If that version had been in as general circulation as the other, there would not have been that want of knowledge on the subject which there has been; but they know from that original version, because in the item corresponding to the 16th rule of the other version, a cote is mentioned as 'more than two turns,' whilst a go-by, or bearing the hare, s only equal to two turns. In the 16th corresponding rule, which, by the way, does not correspond further than being in the order of rotation, and alluding to a cote, it says, 'A cote serves for two turns and two trippings or jerkings for a cote;' but I hesitate not to say, that it is at least equal in importance, if not superior, to any one specified performance n a course, and is deserving of every attention being paid to it; and I have no doubt that greater and more real injustice has been done in deciding courses from the want of knowledge on the subject of a cote, than any other circumstance that belongs to the knowledge of coursing rules. A more full and explained account of it will be found in the note to my own 7th rule; but I may here add, that as it is explained by the 15th rule, that 'A cote is when a greyhound goeth endways by his fellow, and gives the hare a turn,' so is it the first performance which takes place, or can be expected to take place, after the dogs are slipped at the hare; one dog outruns the other, and turns the hare; he goes endways by his fellow, and turns the hare; and with a good hare, and one dog more speedy than the other, this is repeated many times in some courses: the last dog, when a turn is given, generally takes the lead after it, or if not so, it seldom happens but he is laid even with the other at the start for the next run up to the hare; then, if the other strips away from him again, and turns the hare, it is precisely the same as going together out of the slips: now giving many turns in succession indicates the dog doing so being possessed of the greatest essentials that constitute a good greyhound — speed, stoutness, and a good turner; speed to strip away from his fellow, stoutness to maintain that speed with the accumulating distress from giving the succession of turns, and he must be a good turner to start even with his fellow after each successive turn. Each of these turns has a right to be reckoned two points; but without understanding the cote, they are only allowed one point each; and, as actually was the case in the course before stated of the black dog and the brindled one, where there were many cotes given, and in many others that I have seen, and, in all probability, some thousands of courses that I have not seen, and in any course that may happen hereafter, where one is a waiting rascal and the other a fair runner, if the cote is not reckoned great injustice is done, and the merit of possessing the three greatest essentials constituting a good greyhound is thrown away and lost; it is allowing as much for a turn gained without superior speed, as you allow for one that is gained by superior speed."

1987. *The original version*, it will be perceived, is by no means so full or so explanatory as the latter. Mr. Thacker observes that "It is deficient of six items to correspond with the rules, or explanation of terms, contained in the revised version, namely, the 4th law for a hare; 7th, a go-by; 15th, a cote; 17th, 18th, and 19th, which are more explanatory; the 18th, of a turn; and that item corresponding with the 16th rule, is also deficient of explanation of a turn, which the 16th rule itself gives. It would be superfluous to analyse the whole code; but the lameness or inconsistency of the 5th, 6th, 9th, 10th, 12th, 14th, and 17th, either towards each other, or towards those which are in themselves good, ought to be noticed; the 5th rule gives the course to the dog which gives the first turn, providing no cote, slip, or wrench, is given; so that, as there expressed, a wrench bars the first turn from winning; and a wrench, by the 18th rule, is equal to only half a turn, or two wrenches for one turn, whilst, by the 16th rule, a cote stands for two turns, and the first turn generally is a cote. Again, by this 5th rule, a go-by, or bearing the hare, is not mentioned as barring the first turn from winning; yet, by the 7th rule, a go-by, or bearing the hare, is equivalent to two turns; also, by the 6th rule, bearing the hare bars the first turn from winning, which is no bar by the 5th; the 5th rule is therefore evidently inconsistent with the 6th, 7th, 16th, and 18th rules, as well as with some others. The 6th rule is in itself lame; bearing the hare is there a bar to the first turn winning, yet the dog that gives the first turn may turn the hare into the other dog's mouth. The first turn also may, or may not, be a cote; yet there is no distinction in that respect, any more than there is as to whether the bearing of the hare is a kill of merit or not; both of which ought to be especially provided for.

1988. "*The 9th and 10th rules have the same sort of limping gait as the 6th rule.* The 9th rule is, if one dog turn the hare, *serve himself*, and turn her again, it is as much as a cote, and a cote is esteemed two turns. The 15th rule says, 'A cote is when a greyhound goeth endways by his fellow, and gives the hare a turn;' so that in one rule there are two turns in a cote, and in the other rule only one. The expression of a dog *serving himself* is not explained in any of those rules, and can only mean giving two turns in succession without being served, or assisted by his fellow dog taking the next turn in the regular order; yet a dog may take two turns in succession, and gain three or four points instead of two, according both to the letter and spirit of this same code of rules. A dog may, and often does, turn the hare, and his fellow start even with him after it; then if he outruns him and turns the hare again, he gives a cote, which, added to the former turn, makes three points instead of two for 'turning the hare, serving himself, and turning her again;' but in giving the first of these turns, the other may take the lead after it, and suffer a go-by; in which case the other dog gains two turns and a go-by, or four points; or if he gained both those turns by superior speed, he gains four points; but if he gain the first turn by extra speed, then give a go-by and turn the hare again, he gains five points instead of only two, which might be inferred from this rule as therein expressed. The intention of this 9th rule is obviously right, as two turns are equal to a cote; but leaving it without the necessary qualification of 'if not gained by superior speed,' it is robbing the dog of his just claim, supposing he does gain them by superior speed. Like the 12th, and some other rules, it is the discrepancy of the expression which makes it liable to a wrong construction. By the 10th rule it would seem that the kill is only meant to reckon where an extra point is necessary to decide the course, whereas by the 6th rule a kill is more than equal to the first turn, which may be a cote or two points, and consequently is lame. If the 12th rule specified that the dog standing still in the field was through cunning, it would not be so objectionable, but as it is expressed it is totally inadmissible; however, as it is in a measure unconnected with the other rules, I will reserve my remarks upon it for the note of my own 16th rule on this subject. The 14th rule is an *odd one* indeed; it is, 'If a dog give the first and last turn and there be no other advantage between them, he that gives the *odd* turn shall win.' Its intention may be quite correct, but oddly expressed; by 'no other advantage,' we should naturally infer that the dog which gave the first and last turn gave two turns, instead of an odd turn; it may, however, mean that they took turn for turn, without any advantage of speed, or killing the hare, or other contingencies; and that the same dog which gave the first turn gave the last also; in which case he would have a balance of one, or, as they express it, of an *odd* turn. The 17th rule is, 'If there be no cotes given between a brace of greyhounds, and that the one of them serves the other as turning, then he that gives most turns wins the wager. And if one give as many turns as the other, he that beareth the hare wins the wager.'

1989. "*In this 17th rule*, as well as in the 10th, *bearing the hare* is evidently meant to reckon only as a casting point, whilst in the 6th rule it is more than equal to the first turn, and in the 7th, bearing the hare is equivalent to two turns, which is a glaring inconsistency. By the former part of this 17th rule it would seem as if one dog turning the hare twice in succession constituted a cote; the same as may be inferred from the 9th rule; so that both the 9th and the 17th rules are inconsistent with the 15th, and it should be remembered that the 15th rule is wholly an explanation of what *does* constitute a cote; and that such explanation is clear and satisfactory. Without going further into the particulars of these old rules, to show their impropriety in some instances, it is plain that they are not approved of generally by the coursing world, by the new rules recently promulgated by the Ashdown Park Coursing Club, expressive of the principles on which they wish to have their courses decided. But from these new Ashdown Rules it does not appear certain whether they are intended as an entire code, or only as riders to the old ones, or whether as merely serving temporary purpose; the latter conclusion seems the most probable from the total want of rovision in them for many occurrences which are continually taking place, and some of hem of an important nature. This conclusion seems warranted by a passage in the *Courser's Manual*, wherein it says, 'If these, or any others that were thought by the leading clubs to e more perfect, were adopted generally, much advantage would accrue; this is well worthy he consideration of the members of different clubs.' I will therefore add these Ashdown Rules, with a few brief remarks to each of them as they appear to me to require; leaving he more particular elucidations of those parts of them which are irreconcilable with strict ustice, to be added with the notes of explanation attached to those of my own rules bearing n the same subject. If my own rules are thought too long and complicated, these Ashdown Rules are in the opposite extreme, being too short and not sufficiently explanatory, nor roviding for many contingencies which are constantly arising. 'Brevity,' they say, 'is ne soul of wit;' but brevity may be carried too far, and especially where the subject-matter as been but ill understood, and imperfectly analysed and investigated; and such has been e source of much inconvenience and confusion from the want of explanation of principle framing the old laws of the leash." (*Courser's Companion*, vol. i. p. 124.) It certainly not possible to have visited even one coursing meeting without being fully impressed ith a conviction that, to the well ordering of the sport, and to the maintaining of its aracter, the practices there entered into should be based on rules and principles founded strict equity towards all the parties concerned, as the sportsmen, their dogs, and the hares ey intend to course. Consequently, it is imperatively necessary that all should act under e guidance of judicious rules and laws, clearly defined and implicitly obeyed. The diffi- lty, however, is to make laws to regulate such a fluctuating thing as a course.

SUBSECT. 3. *Ashdown Park Coursing Rules, with Mr. Thacker's Remarks thereon.*

1990. *General rules* for the guidance of umpires in deciding courses, and other laws of e leash, sanctioned by the members of the Ashdown Park Coursing Meeting, present at ambourn, on the 7th of February, 1828:—

1. A brace of greyhounds only to be slipped after a re.

N.B. The slipper should be a horse's length in vance of the beater; and when a hare is started, should quicken his pace, that the dogs may both e sight and pull in the slips before he looses em. It is necessary that good law should be given, it materially assists the umpires in case of a weak re.

. If a second hare be started during a course, and hares divide, the course to be given to the dog t follows the slipped hare.—This rule Mr. Thacker nks altogether objectionable, and refers to a note his 20th rule, among his amended rules, for his sent.

. If there be only one turn and a kill in the course, dog that gives the turn shall win, if it be a fair t.—"This rule is not sufficiently qualified. If turn be given in consequence of superior speed, the kill of no merit, the rule is right; if the kill be one of merit, and the turn by superior speed, it ought to be undecided; but if the turn be gained by the advantage of being inside when the hare is running in a curve, and the kill be a kill of merit, the kill ought to win."

4. If there be no turn or kill in the course, the dog that gets first to the covert shall win, for a cup or sweepstakes.—"This rule requires a revision. If he gain the covert first by superior speed, and not by the advantage of an inside turn, he ought to win, whether for cup, sweepstakes, or match; for superior speed ought to be considered a point: and if there be none shown, it ought to be undecided for a match, and toss up for, if for a cup or stake, when the regulations will not allow it to be run again."

5. If there be many turns in a course, a go-by shall be equal to two turns of the hare. The lead up to the hare from slips and the first turn, shall be equal to two after-turns of the hare. Two wrenches of the hare, provided the dog make them following, without

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losing the lead, shall be equal to one turn. The turn (*fig.* 301.) when the hare is leading to the covert, shall be considered more than the turn when she is leading from the covert, provided the number of turns be equal. If a dog fall in the course when he is leading, he shall be allowed a turn more than he gives.—" To the first section of this rule it may with propriety be asked, why not a go-by be equal to two turns when the turns are but few, as well as when they are many? The second section requires revision, the same as the 4th rule; it, in fact, is a cote, if gained by superior speed; and to say that it shall be allowed two points, would be better than two after-turns. See note to my 7th rule. The third section has a proviso too much; for why should not one only be allowed as equal to half a turn, or two wrenches one turn, whether made in succession, or other turns between them. If the dog does not distress himself so much as by giving a complete turn, he distresses the hare, and alters the direction she is making for covert, and probably gives his fellow dog the advantage of an inside turn, by which he takes the lead, and thereby loses his own opportunity of giving two wrenches in succession. The fourth section is improper, either as a positive or a casting point, which latter it appears to be intended for, by the proviso of the 'number of turns being equal.'—The reason for adopting it no doubt is, that a hare is well known sometimes to go a waiting pace from covert, and her best pace towards it; but it does not therefore follow that the dogs are going a waiting pace from covert, especially a fair running dog. A waiting, cunning rogue may, and very likely will, and equally likely to go his best pace towards the covert; it is then that they make their push. We may easily decide the principle of this section, by supposing a very simple case: suppose a fair and an unfair running dog were slipped at a racing red-necked kicking hare, who led the dogs a dance from covert, by way of showing them that she was nowise afraid of them, she will then go a waiting pace I will allow, and with the view of flinging the dogs so much farther in her rear when she doubles back towards covert; the fair running dog goes his best pace, and fetches her back, and overshoots her in the turn very considerably; the waiting dog is ready for her as she makes for covert; he does not overshoot his ground, and he succeeds in turning her, we will say, only once, and then she gets the covert. In such a case the dog who turned her going from covert ought to win, instead of the way this section adopts, of giving it to him who gave the turn going towards covert. I have seen the last dog, when going from covert, have a start of forty or fifty yards of the other in the race towards covert; and it equally applies if there were many turns. Of the fifth section," Mr. Thacker says, "I adopted the expression in my own rule, in the former edition, preferring it to the rule in the old laws of the leash, and the only rule of my own which I altered after meeting with these Ashdown Rules; it, however, so happens, that it is the only rule of mine which has been pointed out to me as wrong, and that by different amateurs of experience from different parts of the kingdom; and I am satisfied that the distinction 'when he is leading' is an improper alteration. See my 12th rule, and note upon it."

6. If one dog follow the hare home, and the other stand still when the hare is in view, the course shall be given to the dog that runs home, though he had not the advantage in running. If both dogs stand still in a course, it shall be adjudged to the dog that runs longest after the hare.—"This is not due reward to the dog with that innate courage which the high-bred greyhound should possess, preferring death to relinquishing the chase." (See *Stud Book*, p. 19.) "This is adopting the very worst rule, or the most lamely expressed, contained in the old laws of the leash, unless attended with the proper and indispensable proviso, or distinction of dependency, upon whether the dog stood still as cunning rogues will do, or whether he stood still through distress. A real good honest-running greyhound, that has been doing far the greatest part of the work, and will run till he drops, to be decided against because the other has been waiting, and saving himself in the meantime, and can therefore run longer, is contrary to all reason, justice, or humanity; and this 6th rule leaves it open to such a decision. The reader will find some further remarks upon the 12th rule of the old laws of the leash in the note to my 16th rule."

7. If both dogs be unsighted, owing to the hare running through a bush or bushes, furze, or plantation, so as to impede the course, the course shall be deemed to end there. If only one dog be unsighted from such a cause, it would be proper for the course to end there.

8. If the owner of a dog or his servant ride over the dog of his opponent in the course, he shall lose the course. —" Unquestionably very proper."

9. If a third dog get loose, and join in the course, the course shall stand good and be decided, and the owner of the third dog shall be fined, according to the rules of the club. —" If by this rule is meant that the remainder of the course, after the third dog has joined in it, shall be taken into the reckoning, there probably would be great difficulty in making a proper decision upon the course." (See 20th rule of Mr. Thacker, and his note upon it.)

10. The umpires shall give their judgment promptly, before they converse with others in the field: if they be divided in opinion, they shall ride apart from the rest of the company, until they have consulted a third person, who shall be chosen in all courses for cup and sweepstakes. —" Very proper."

11. If the dogs be slipped at a hare, and they are unsighted, and before they are taken up another hare start, so that the dogs are fairly laid in, it shall be deemed a course, as though the dogs went from slips. —" This may cause a dispute, but it cannot be avoided without a greater evil, for they cannot be stopped; and if the course should not be decided, and be for a cup or stake, whichever dog wins the next course will run his subsequent tie to a disadvantage against a dog that has run only one course."

1991. *Mr. Thacker sums up his criticisms on these rules* by remarking, that " There are many contingencies not provided for by them, some of which are very important. The kill," he observes, " is very imperfectly provided for — nothing said of a cote, perhaps from only being aware of the original version of the old rules, which may also account for the omission of *trippings, jerkings*, and so forth. It is not, however, by an imperfect set of rules, providing for only a few particular cases, even if those provisions were right and proper, that the dissatisfaction arising from decisions upon courses is to be removed; it must be by having a full and perfect code of laws, thoroughly explained, and such as will be uniformly established and recognised by all public meetings; till that is done, the dissatisfaction so prevalent hitherto at coursing meetings *will never cease.*"

1992. *High however as these rules rank* in the estimation of coursers, it has, nevertheless, been objected to by them, that they are too short, are not sufficiently explanatory, and that they do not provide for contingencies which are frequently occurring. These objections certainly have some foundation; nevertheless, as a comprehensive code they are generally well received; nor were they when first promulgated stated to be imperative, or not subject to revision or alteration. The omissions in them are certainly numerous and important; that was much to be regretted, because it delayed the spread of a general understanding with regard to fixed principles of action in match coursing meetings, which the acknowledged celebrity of this club might with much propriety have dictated. Such a proceeding would have gradually acquired weight in the eyes of the patrons and professors of match coursing universally, and have prevented the feuds and contentions too apt to take place where the weight of authority has not already settled the contended points. That a code of well digested rules should be laid down and generally agreed on, is absolutely necessary to the permanence of the sport of match coursing; for so numerous are the contingencies which occur, that when there is any disposition to cavil, some opportunity will arise to indulge in it, unless restrained by the authoritative decision of the acknowledged code. Well considered rules, formed on just principles, will eventually be the general guide, and o reward the best dog according to his merits, the leading feature in all decisions. And when these merits in the dogs are so nicely balanced that it appears impossible to decide in favour of either dog over the other, although we have nothing to say in favour of its gentility, let a *toss-up* rather than a *knock-down* decide the matter: even the *brutum fulmen* we would eschew, nor tolerate aught but harmony among coursers. Decisions made by ossing up, drawing lots, or by any other chance, should not however become too frequently ractised. Mr. Thacker very justly observes, — "To decide equally the same, whether gained by chance or by merit, may, at first sight, appear the most eligible as a matter of onvenience; yet no one will doubt that merit is the proper principle."

SUBSECT. 4. *The Duke of Norfolk's Coursing Rules, as amended by Mr. Thacker.*

1993. *These rules, we believe, are considered to be very judiciously framed.* That many oursing meetings are wholly guided by them is certain; nor is it improbable that they will ventually supersede most others. On each rule Mr. Thacker, in his work on coursing, ffers important annotations and illustrations, which we strongly recommend to the attention f the courser of every degree of standing; but to the tyro more particularly. We also dd a few practical remarks of our own as they occur to us after each rule: but the merit f them is mainly due to this gentleman, for his forcible exposition will, like the steel, raw fire from the cold and senseless flint. Neither should we ourselves be doing justice to ur subject, nor the particular claims of Mr. Thacker as a celebrated coursing judge and amer of rules for the guidance of others who are called on to decide on the merits of the ontending dogs in a course, were we to rest satisfied with this acknowledgment merely, ut we have also to thank him for an amusing and interesting account of the cirumstances which led to his framing a code of rules that should be co-extensive with the any changes and chances likely to take place in this ever-varying sport. The task was erculean, but, like Hercules, he exerted his great abilities (as the other exerted his great rength) in overcoming the difficulties which lay in his way. Mr. Thacker's attempts, owever, and the success which has attended those attempts, have made the subject so teresting to every courser, that we cannot refrain from accepting his permission to make ublic a letter to ourselves, detailing the circumstances which first prompted him to frame code of coursing rules, and to his appending thereto a general treatise on the sport itself, ot more useful than interesting; of which letter the following is a copy: — "Dear sir, — I ish to put you in possession of a few facts to make use of or not as you think proper, in hich a brief history of what led to my *treating on coursing* may not be out of place. The porting Magazines before 1820 did not, to the best of my recollection, contain any articles the decision of courses; when such articles commenced under a curious coincidence. In convivial party, one evening, I was asked if it was not considered to be 'the best dog at killed the hare?' The wine operating, I answered by an impromptu: —

'Give me the dog that runs the most fair,
Performing the most *towards killing* the hare.'

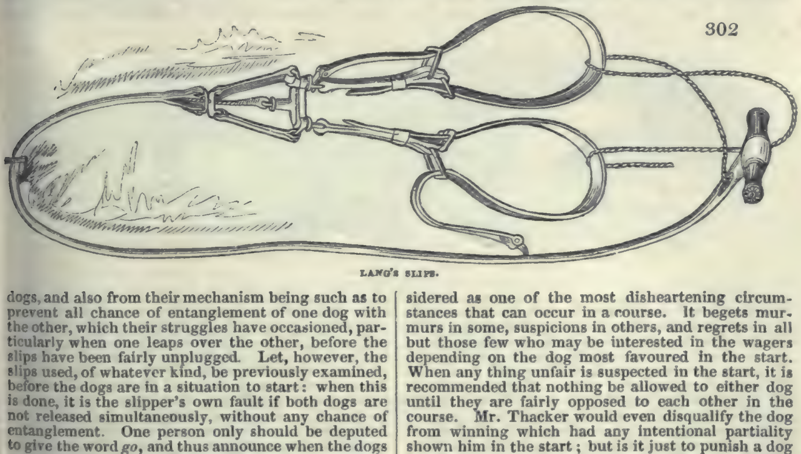
was on this occasion I first became possessed of the Duke of Norfolk's amended rules, fore which I had not even heard of them, or of the other version. The next month's agazine contained an article from Nimrod, who had been at the Amesbury Coursing eeting in company with a Mr. Davis, who then officiated there as judge. Nimrod professing 'not to be at home on coursing ground,' inquired of Mr. Davis 'on what he decided?' The answer was 'on the dog that ran the fastest, and the most honest, and, in short, that did the *most towards killing the hare.*' (I quote from memory.) In consequence I sent an article for the next magazine, signed 'John Bull,' giving the above impromptu, and pointing out its coincidence with Mr. Davis's opinion. The following month another article appeared; the editor wishing to hear again from the poetical John Bull, in consequence of which a series of articles appeared and continued for a few years. How far these caused the Ashdown Park Rules to be framed I do not know, but their appearance and the proceedings which followed at coursing meetings settled my mind to the necessity of a separate treatise on the whole subject. You will observe that the Duke of Norfolk's Rules came down to us without any explanation why any one rule was so framed, or of any principle on which the whole was founded; yet there is such an uniformity of principle seen to run through the most important of the rules, that I conceive the framers of them acted on a settled principle, and that it was on a *good* one. Nevertheless, the want of that being fully set forth and explained, has given rise to a diversity of opinions, and a variety of interpretations to several rules, added to the inconsistency of some rules compared with others, that it has led to innumerable disputes, although it has still remained in every courser's mouth — 'the want of principles on which courses ought to be decided;' yet, when any attempts were made, scarce any two agreed upon the same principle. This has led to a multiplicity and variety of disputes, and to so prevailing a dissatisfaction at decisions, that the jealousy of partiality being shown, had rendered such jealousy and discontent at coursing meetings almost proverbial. To remedy this, and strike at the root of the evil, I conceived would be to remove the doubts and uncertainty entertained, and the want of knowledge upon the subject which there seemed to be in the majority of coursers, by framing an exposition of what I considered the true principles, in order to create a greater uniformity of sentiment amongst them. I have not been disappointed in my expectations. The former jealousy and discontent has gradually given way to the harmony of coursing meetings becoming *the order of the day.* I would beg to ask to what else are we to attribute the increased spirit with which coursing is now followed, running for so much larger stakes, 300*l.* 500*l.* (800*l.* now contending for at Liverpool) than was ever known to be contended for by greyhounds before, than the confidence parties feel in having justice done to them; and, in short, knowing better what they are about than formerly? In this view of the case, I feel that I have not been working in vain for the good of the coursing community, and raising up the spirit of its votaries, for the last twenty years, first by the *Sporting Magazine*, and next by my own publications. The Ashdown Park Rules made their appearance in the *Sporting Magazine* just, I may say, in the nick of time for me to insert comments upon them in the proper place; *i. e.* to follow the Duke's Rules and my comments, just when that part of my first, or small book, published ten years ago, was printing. Although they had six months, or one season's start of mine, mine appears very soon to have given them the *go-by.* I would here beg to ask, supposing I had sent out my rules *only*, *without* note or comment, would they not have created the same or similar diversity of opinion, which has always attended the Duke's Rules? I cannot refrain from thinking that the explanation has done more than the rules in giving confidence to coursers, and in creating harmony at the meetings. The meeting at the Thatched House Tavern, I am happy to say, has not had, at least in any considerable degree, the effect of lessening the popularity of my rules; indeed, I cannot see how they could, for of the thirty-three rules made at this meeting one only, the fourteenth, which might be supposed to be taken from my sixteenth, has any thing to do with the decisions of courses, &c. We believe that Mr. Thacker regarded the framing of this code as personally levelled at him, or rather at his rules, which we think is very unlikely, seeing they are so universally popular; indeed, he allowed that several meetings had, since the promulgation of the *Thatched House Rules*, agreed to abide by those of his framing altogether. Mr. Thacker was much respected among sportsmen of all kinds, but particularly among those whose predilections led them principally to patronise coursing. "His peculiarities might give offence," said an influential and first-rate practical courser to us; "but Mr. Thacker's decisions were *mostly* judicious, and were *always*, as I believe, intended to be strictly impartial, which (added he) is more than I can say for all the decisions I hear at some meetings." We now proceed to give Mr. Thacker's coursing rules: —

1. A hare ought to be coursed with not more than a brace of greyhounds. — We would have the individual (for we cannot call him a courser) who would run more than a brace of greyhounds, shut out from the notice of every true sportsman. He is almost unfit for a pot-hunter. One only is often found more than a match for a hare; and when two are used, it is more to observe the manœuvring between the trio, as well as to determine the superiority between the dogs: thus in match coursing the odds is imperative. — Editor.

2. She ought to have four or five score yards' law before the dogs are loosed from the slips, if the nature of the ground will admit of it, without danger of losing her. If she lose the dogs after they have run her some time, the course to end there, though she or another may start before the dogs are taken up, and they run her again. — "Whoever," says Arrian, "courses with greyhounds, should neither slip them near the hare, nor more than a brace at a time; for though the hare be remarkably swift footed, and have often beaten many dogs, yet, being

just started from her form, she cannot but be fluttered at heart, and terrified at the hallooing, and the hounds pressing close upon her. and in this way many a noble hare has often ignobly perished, without an effort, showing no diversion worth mentioning." Nor can we but admire his descriptive powers of pen in what follows: — "Let the hare, therefore, creep away from her form, as if unperceived, and recover her presence of mind. And then, if she be a racer, she will prick up her ears, and bound away from her seat with long strides; and the greyhounds, having capered about as if they were dancing, will stretch out at full speed after her. And at this time is the spectacle worthy indeed of the pains that must necessarily be bestowed on these dogs." The law given to the hare in match coursing should unquestionably be well understood and imperative. In private coursing, although fair law should always be given to the hare where it can be done, yet circumstances must be taken into consideration, as the distance from covert, with many others. Twelve score yards, as directed by the old Norfolk code, would in an inclosed country lose three out of every four hares that were coursed. Nor could such a distance afford a good opportunity of judging of the relative speed of the two dogs, or of detecting any latent tendency to dishonesty or lurching in either. When the inclosures are not large, it is often found that a hare will reach a fence, or the limits of *sight*, before any correct judgment can be formed on the relative speed of the dogs engaged. Sometimes, therefore, these limits are narrowed by mutual consent, and with much propriety. — Editor. We should do a palpable injustice both to the judgment and humanity of Mr. Thacker, were we to omit this portion of his note on the above rule: — "The law allowed the hare before the dogs are loosed from the slips is not all the protection she is entitled to receive at the hands of sportsmen; she is in a defenceless and unassisted state of danger throughout the course; when the dogs are loosed they are under no control but their own natural propensity to take her, and they ought to be equally unassisted as the poor hare. They are allowed to be hallooed, so as to lay them in view of her; but a great hallooing and noise whilst they are running is very foul sporting, and very unfair towards the poor hare; it terrifies and confuses the naturally timid animal, and frequently causes her to be killed before the dogs have had a fair trial, and injures the sport. (Vol. i. p. 160.)

3. The slipper ought to have only one person to obey when to slip them, and let go immediately as that person gives the word *go*. He ought always to be ready provided with collars of contrasting colours, to put one on the neck of each dog, when brought to the slips, when the two dogs are of the same or similar colour, for the judge to distinguish in his decision to which dog he awards the course. If the owner of either refuse to have a collar on his dog, he ought not to be allowed to be put into the slips, but the other dog to run a bye. The same penalty ought to attach to him if he refuse to allow his dog to be taken to the slipper by the person appointed to do so, to prevent the judge knowing the dog by knowing the servant.— A delay in slipping the dogs in some meetings very strictly subjects the slipper to a forfeit, which is intended to insure regularity, as well as to prevent any fraud being practised in favour of either dog. It is needless, we presume, for us to recommend, that none but spring slips be employed, as those of Newmarket, or of Lang, in the Haymarket, London. Either of these slip the dogs readily and simultaneously. Those of Lang (*fig.* 302.) we believe are becoming popular, from the ready liberation of both dogs, and also from their mechanism being such as to prevent all chance of entanglement of one dog with the other, which their struggles have occasioned, particularly when one leaps over the other, before the slips have been fairly unplugged. Let, however, the slips used, of whatever kind, be previously examined, before the dogs are in a situation to start: when this is done, it is the slipper's own fault if both dogs are not released simultaneously, without any chance of entanglement. One person only should be deputed to give the word *go*, and thus announce when the dogs may be slipped; but the slipper, who must be quick-eyed, active, and trustworthy, should not then let go, unless he be satisfied that both dogs see the hare. When the matched dogs are similar in colour, the one should wear a red, and the other a white, collar; or the one on the left should be marked on the head, shoulder, back, left side, and hocks, with chalk of a colour different from that of the dog on the right. Chalk-marking is safer than a collar where there are hedges. — Editor.



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LANG'S SLIPS.

4. The judge ought to be in a situation to see if both dogs go together out of the slips; and he would be the fittest person to judge of the distance the hare is from the dogs, and to give the word *go*. — Mr. Thacker very properly remarks on the importance of a strict observance of this rule, that, as the first run up to the hare usually affords the best opportunity of judging which dog has the most speed, so it is of consequence that the judge should see that they were simultaneously started by the slipper, and that each then saw the hare. — Editor.

5. The slipper ought to run forward with the dogs when a hare gets up, so that they will bear steadily against the collar; otherwise, one or both may be struggling and turning round, with his head from the hare, when the word *go* is given.—A foul start should by all means be avoided, and indeed it may be considered as one of the most disheartening circumstances that can occur in a course. It begets murmurs in some, suspicions in others, and regrets in all but those few who may be interested in the wagers depending on the dog most favoured in the start. When any thing unfair is suspected in the start, it is recommended that nothing be allowed to either dog until they are fairly opposed to each other in the course. Mr. Thacker would even disqualify the dog from winning which had any intentional partiality shown him in the start; but is it just to punish a dog for the dishonesty of the slipper? — Editor.

6. When a hare is found sitting, she ought to be distinctly *sohoed*, so that the dogs may be alive to her getting up; and, for the same purpose, she ought to be hallooed when started; the latter ought to be only by one or very few persons; as, if by many, the hare will be beside herself from being frightened, and spoil the sport by her not going straight away. The hare finder should give such a *soho*, that all those principally concerned may be prepared; and, at the same time, if there be any particular direction that it is desired she should take, let all the company be directed to make way. The dogs will naturally look towards the halloos which succeed her being started; which make it clear that they should be given by *one person* in preference to *many*, who being probably wide apart, may so distract the attention of the dogs as to make them lose sight of her altogether, as we have seen happen. Mr. Thacker says, very justly, that the proper person to halloo the hare is the hare finder, he being nearest to her in the start, and consequently his voice is most effective in drawing the eyes of the dogs towards her. He also says, that, "Should a hare get up without being previously *sohoed*, the company ought immediately to make a clear way for both the slipper and the judge in the direction she is taking," who will act accordingly.

7. A cote to be reckoned two points. A cote is when two dogs start even together, and one outruns the other, and gives the hare a turn or wrench; but if the hare take a circuitous route, and the dog which runs the outer circle gives the turn, it is reckoned three points. —The cote may truly be called a mystical term, from the numerous inquiries which have been made of its derivation, and the contradictory opinions entertained on its precise meaning. The arguments which have followed the different explanations given, have been very interestingly illustrated by Mr. Thacker, who cites many olden authorities to show that it is a term almost wholly confined to coursing, and certainly it appears to have been appended to it from the earliest descriptions of the sport in our own language. (See vol. i. p. 113. 117. 150. 168.; see also his long instructive explanation of Rule 7., extending from p. 168. to 183.) — EDITOR.

8. A turn to be reckoned one point; but if the hare turn not as it were round, she only wrenches; and two wrenches are equal to one turn. A wrench is when she strikes off to the right or the left, at about a right angle. Any thing short of that in a forward direction, is only a rick or whiff, for which nothing ought to be allowed.—Wrenching and turning are by no means synonymous, although many young coursers consider them such; and many others also are by no means well informed on the true importance of each. Independently of the clear wording of Rule 8. Mr. Thacker further explains his meaning by observing, that, "The reason why a distinction is made in the old rules betwixt a turn right about and a wrench, is obviously a very just one. In wrenching the hare, a dog neither distresses her, nor contributes so much towards the killing, nor does he reduce his own powers so much as he does by what is called fetching her *back again*, or, as Turberville has it, setting her about; in addition to which it is generally seen that a waiting dog gives wrenches more frequently than turns, while a fair runner gives turns more frequently than wrenches." Every little whiff or rick which the hare makes, undoubtedly ought not to be allowed; much less should taking a curve line or serpentine direction (probably made from instinctive remembrance of her former paths), be taken into account. A direct angular turn only ought to stand good, as it plainly bespeaks the pressure of the dog on the hare; but, on the other hand, it ought not by any means to reckon, as it does with some, as a direct *turn about*.— EDITOR.

9. A go-by to be reckoned two points; but one dog being behind the other, and then getting first, by the hare running in a curve, or any way but in a straight forward stretch, or by superior speed, when both are fairly on their legs after a turn, is no go-by: if a dog give half a go-by, to be allowed one point for it, unless that half go-by forms part of a cote, in which case it should be reckoned in the cote. —The importance of the go-by is further exemplified in the author's notes to this rule, where it is stated that it is the principal, though not the most important, feature by which we are to measure the superior speed of the dog who gives it. It is also very properly observed, that what frequently stands with some for a *go-by* is only an advantage gained by the dog's taking the inner circle, which may show *tact*, but is no demonstration of *speed*, the quality here sought for as the subject of remuneration. — EDITOR.

10. Killing or bearing the hare to be reckoned two points, if it be a kill of merit; but if one dog turn the hare into the other dog's mouth, or the hare being taken by other casual circumstances, wherein there is no merit in the dog, to reckon nothing; but there may be a kill which has not the first degree of merit in the dog, yet not without merit, wherein the judge should use his discretion in allowing one point for it. — The *kill* (*fig.* 303.) in the estimation of some coursers, ought not to stand for much; others would reckon it as nothing, alleging that it is usually the worst dog that kills the hare. But as this is by no means always the case, something at least should be allowed for the kill, otherwise it stultifies the principle that the best dog is that which does most towards killing the hare. Nor is it unreasonable to hold that a brilliant *kill* is one of the finest points in a course, whether by a gallant rush from the slips, or by an unswerving run up in a desperate effort at the close of an exhausting contest. To witness either over the Wiltshire Downs, where the law is justice to the hare, and the course is often judgment to a dog, may tell what is the chief end of a greyhound, and therefore what is one of his cardinal virtues. While this sinks still lower the value of a chop or accidental *kill*, it will prove that such noble finishes bespeak the highest merit in a greyhound, akin in grandeur to the unerring swoop of a hawk, and the fatal descent of an eagle. Even in private coursing, there is sorrow for a fall by misfortune, and a cheer for a glorious end.— EDITOR.

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11. A tripping or jerking the hare is to be reckoned one point.

12. If a dog take a fall in a course whilst performing his duty, to be allowed one point for it; if he fall from pressing the hare closely, or flinging himself to take her, and causes her to turn about, he is entitled to two points, one for the fall and one for the turn; or, if the turn were by superior speed, he gains three points, one for the fall and two for the cote; or if a circuitous cote and fall, four points. —This rule is connected with the seventh and eighth rules, which see.

13. If one dog see not the hare when slipped, by any accidental occurrence, not his own fault, to be deemed no course; but if, owing to his untractableness or infirmity of sight, or the fault of his owner or servants, the dog that follows the hare to win, and the judge to decide whether his not seeing the hare was accidental or the fault of the dog. If he afterwards join in the course, it must be in the discretion of the judge, if he deem it no fault in the dog's not seeing the hare when slipped, to give it *no* course, or decide it according to the merits of the dogs when running together, allowing for the distance or number of turns given by one while the other was absent from it, and comparatively not so much at work. But if his not seeing the hare when slipped was his own fault, or that of his owner or servant, the course to be given against him.

14. If there be no turn or other point gained, an equal start, and the hare run in a straight direction, the dog leading first to the covert to win. If one dog lose ground at the first start, and afterwards evidently gain upon the other by superior speed, though he does not pass, or get even with him, yet, if there be no turn or other point gained between them, he ought to be deemed the winner; either dog leading first to the covert by an unequal state an inside turn, or other occurrence where there is no superiority of speed shown, the course to be adjudged dead; but if the unequal start were the fault of that dog which lost ground by it, and who does not regain that loss by superior speed, he ought to forfeit the course for his own untractableness. But if a dog lose his start by the slipper standing still, instead of running forwards for the dogs to press against the collar, and in his natural struggling to get to the hare when he

sees her, has his eyes in a contrary direction when loosed, it ought not to be deemed his untractableness, but the slipper's awkwardness.

15. If a dog lose ground in the start by any untoward circumstance, not his own fault, and yet maintain equal speed with the other, if that other give the hare a turn, or gain any other point, but the course end immediately by the hare gaining covert, sough, squatting in turnips, or other brush, except killing her, that turn or point not to be allowed for, but the course to be adjudged dead. If that turn were gained by the advantage of an inside turn, the hare running in a curve, without any superiority of speed being shown, to be adjudged dead. If the course continue longer, and other points are gained, that first turn or point to be taken into the account; and if that unequal start were owing to the dog's untractableness, or otherwise his own fault, the turn or point gained by the other dog to entitle him to win.

16. If a dog wilfully stand still in a course, or depart from directly pursuing the hare, or to meet her, the points he has gained to be reckoned only to the time he stood still, or left the course, though he may afterwards join in it. If the points he has gained up to the time he stood still, or departed from the ordinary course, should equal what the other gained in the whole course, his standing still, or leaving the course, to give the casting point against him. If both dogs wilfully stop, with the hare in view, to be decided by the number of points each gained; and if they are equal, to be decided by a toss-up, though one run longer than the other. If one or both dogs should stop, with the hare in view, and relinquish the pursuit through utter inability to continue it, the course to be decided according to the number of points each dog gained in the whole course, and not to that dog which ran the longest, though he continue the pursuit to the covert.

17. If a dog refuse to fence where the other fences, his points to be reckoned only up to that time, though he may afterwards join in the course. If he do his best endeavour to fence, and is foiled by sticking in the meuse, or the fence being too high to top it, whereby he cannot join in the rest of the course, such course to be deemed to end at that fence. Should the points be equal between them, to be undecided; but if one be thrown out by being a bad fencer, and yet the points be equal, a good fencer to have a casting point over a bad one.

18. If a fence intervene in a course that the judge cannot get over, and thereby lose view of the remainder of the course, the course to end at that fence.

19. If a dog be rode over, or disabled, so that he cannot continue it, or by other accident not being the fault of the owners of either of the dogs or their servants, the course to be decided up to the time the accident happened; but if through the fault of the owner of either dog, or his servant, the course to be given against him. Or if either dog be unsighted during a course, the course to end there, unless it is but for a very short time and he joins the course again, in which case it must be in the judge's discretion to decide the whole course, or only up to the time the dog was unsighted.

20. If a fresh hare get up during a course, and one of the dogs take after her, the course to be decided up to the time she interfered with it. If a third dog get loose and interfere with the course, to be decided up to that time, unless the third dog is the property of the owner of one of those engaged in the course, in which case the course shall be given against him.

21. If the points are even between two dogs, and one evidently shows most speed, that extra speed to entitle him to win; but where a dog has a balance of one point, and the speed of the other is only a trifle more, the point to win. If very few turns or wrenches are given, and one dog has a balance of only one point, and the other a great degree of superior speed, that speed to win. If the points be equal, and one has most speed at the first part of the course, and the other at the last part, if in equal proportion to the last turn, or kill, the course to be adjudged dead; but if the points are equal, and speed also, up to the last turn, and one shows more speed than the other in the run up to cover, that extra speed to win. If two dogs are slipped even, the course straight, without a turn, and one shows most speed at first, and the other at the last part, so as just to get even with his fellow, and no more, the course to be adjudged dead.

22. The next brace of dogs to be taken to the slipper immediately on his loosing the other dogs, that he may have them ready in the slips when the judge returns from the preceding course; but they ought not to be slipped at a hare until both the other dogs are taken up, for fear of their joining in the fresh course.

23. Some one should be appointed to receive the judge's decision; also to communicate any directions to him upon the orders of the field. No other person ought to interfere or say a word to him during the time the business of the field is going on, as it is his place to judge upon the points of the course, as well as the casualties that may have occurred in it. Should the owner of either dog engaged, or their servant or partisan, make any remark to him, either directly or indirectly, before he has given his decision, he ought to forfeit the course, though it may be that his dog was entitled to it.

24. A judge ought to have a quick eye, a clear head, and a retentive memory; he ought to give his judgment promptly and decisively, but not over hastily. No one ought to ask him why he decided on such a dog, or ought he to answer him if he does ask without first applying to the stewards, who ought not to suffer the judge to be annoyed with questions which they think unnecessary.

25. The judge's decision to be final and binding on the parties to whomsoever he delivers it, unless he decides by the name of the dog or that of his owner; in which case his decision to be void, and the course to be decided by reference to other parties agreed upon by the majority present. The judge ought to decide by the colour of the dogs, or of their distinguishing collars, the largest or smallest, or by some other convenient way which does not indicate a knowledge of the dog, or of his owner.

1994. *On the latter rules* we regret that our limits compel us to abstain from an individual examination of the contents. The length of most of them, indeed, renders much elucidation unnecessary, as in general each of the rules embodies most of that it is intended to enforce. Mr. Thacker, however, has added very explicit and copious annotations thereon, to which we would refer the reader. Since the above was written, still further modifications of the coursing rules have been agreed on by a large body of influential coursing amateurs. We may presume on their excellence; but Mr. Thacker's copious annotations had almost left this a barren subject.

Subsect. 5. *The New Laws of Coursing, as promulgated in* 1838.

1995. *The new laws of coursing* were drawn up and agreed upon at a meeting of noblemen and gentlemen, members of established clubs in England and Scotland, held at the Thatched House Tavern, in St. James's-street, on Saturday, the 3d day of June, 1838; the Earl of Stradbroke in the chair. They are intended as the groundwork of an uniform code of laws, and are recommended for general adoption in all coursing societies, in order that the owners of dogs may, as in racing affairs, be governed by the same regulations, whether running in the north or in the south. To make the rules as complete and as generally applicable as possible, it was intended to have an annual meeting at the above tavern, at two o'clock on the Saturday, in the Ascot race week, when propositions for adding to or altering, such of them as might appear defective, were to be taken into consideration. On the evening of such a meeting there was to be a dinner at the Thatched House, to which members of all established coursing clubs were to be invited. We would venture a remark, that in so fertile a subject as coursing, fertile from its extreme versatility, no two courses being exactly like, it is not to be wondered at that new rules should seem to be required to meet these contingencies. But the continual alteration of old laws and framing of new ones would unsettle every thing. Hence there are none of the proposed annual legislative conclaves; and hence the appointment of a judge, who enjoys public confidence, is regarded as the best means of affording general satisfaction. A man of this sort, aided by the Laws and Rules, and Coursing Commentaries (Stonehenge upon Welsh, and so on), will generally carry matters through.

The New Laws of Coursing of 1838.

1. Two stewards shall be appointed by the members at dinner each day, to act in the field the following day, and to preside at dinner. They shall regulate the plan of beating the ground, under the sanction of the owner or occupier of the soil.

2. The time of putting the first brace of dogs in the slips shall be declared at dinner on the day preceding. If a prize is to be run for, and only one dog is ready, he shall run a bye, and his owner shall receive forfeit; should neither be ready, the course shall be run when the committee shall think fit. In a match, if only one dog be ready, his owner shall receive forfeit.

3. The judge ought to be in a position where he can see the dogs leave the slips, and to decide by the colour of the dogs to a person appointed for that purpose; his decision shall be final.

4. The judge shall not answer any questions put to him regarding a course, unless such questions are asked by the committee.

5. If any member make an observation in the hearing of the judge, respecting a course during the time of running, or before he shall have delivered his judgment, he shall forfeit one sovereign to the fund; and if either dog be his own, he shall lose the course. If he impugn the decision of the judge, he shall forfeit two sovereigns.

6. All courses run at this society shall be from slips.

7. No person shall run a greyhound by a name different from that in which he has appeared in public without first giving notice of such alteration, under a penalty of five sovereigns.

8. Any member of this society, or other person, running a greyhound at the meeting, having a dog at large which shall join in the course then running, shall forfeit one sovereign; and if belonging to either of the parties running, the course shall be decided against him.

9. No greyhounds shall be entered as puppies, unless born on or after the 1st of January, of the year preceding the day of running.

10. If in running for prizes the judge shall be of opinion that the course has not been of sufficient length to enable him to decide as to the merits of the dogs, he shall inquire of the committee whether he is to decide the course or not; if in the negative, the dogs shall be immediately put again into the slips.

11. When a course of an average length is so equally divided that the judge shall be unable to decide it, the owners of the dogs may toss for it; but if either refuse, the dogs shall be again put in the slips, at such time as the committee may think fit; but if either dog be drawn, the winning dog shall not be obliged to run again.

12. In running a match, the judge may declare the course to be undecided.

13. If a member shall enter more than one greyhound, *boná fide* his own property, for a prize, his dogs shall not run together, if it be possible to avoid it; and if two greyhounds, the property of the same member, remain in to the last tie, he may run it out, or draw either, as he shall think fit.

14. If a greyhound stand still in a course when a hare is in his or her sight, the owner shall lose the course; but if a greyhound drop from exhaustion, and it shall be the opinion of the judge that the merit, up to the time of falling, was greatly in his or her favour, then the judge shall have power to award the course to the greyhound so falling, if he think fit.

15. Should two hares be on foot, and the dogs separate before reaching the hare slipped at, the course shall be undecided, and shall be run over again at such time as the committee shall think fit, unless the owners of the dogs agree to toss for it, or to draw one dog.

16. A course shall end if the dogs are unsighted from any impediment, after being fairly in with the hare.

17. If any member or his servant ride over his opponent's dog when running, so as to injure him in the course, the dog so ridden over shall be deemed to win the course.

18. When dogs engaged are of the same colour, they shall each wear a collar.

19. It is recommended to all union meetings to appoint a committee of five, consisting of members of different clubs, to determine all difficulties and cases of doubt.

Local Rules.

1. The number of members shall be regulated by the letters in the alphabet, and the two junior members shall take the letters X and Z if required.

2. The members shall be elected by ballot, seven to constitute a ballot, and two black balls to exclude.

3. The name of every person proposed to be ballotted for as a member, shall be placed over the chimney-piece one day before the ballot can take place.

4. No proposition shall be ballotted for, unless put up over the chimney-piece, with the names of the proposer and seconder, at, or before, dinner preceding the day of the ballot, and read to the members at such dinner.

5. Every member shall, at each meeting, run a greyhound, his own property, or forfeit a sovereign to the club.

6. No member shall be allowed to match more than two greyhounds to the first class, under a penalty of two sovereigns to the fund, unless such member has been drawn or run out for the prizes, in which case he shall be allowed to run three dogs in the first class.

7. If any member shall absent himself two seasons, without sending his subscription, he shall be deemed out of the society, and another chosen in his place.

8. No greyhound shall be allowed to start, if any arrears are due to this society from the owner.

9. Any member lending another a greyhound, for the purpose of saving his forfeit (excepting by consent of the members present), shall forfeit five sovereigns.

10. Any member running the dog of a stranger in a match, shall cause the name of the owner to be inserted after his own name in the list, under a penalty of one sovereign.

11. No stranger shall be admitted into the society's room, unless introduced by a member, who shall place the name of his friend over the chimney-piece, with his own attached to it; and no member shall introduce more than one friend.

12. The members of the —— clubs shall be honorary members of this society, and, when present, shall be allowed to run their greyhounds on paying the annual subscription.

13. Messrs. (three or five members, including the secretary for the time being), shall form a committee for managing the affairs of this society, and shall name a person, for the approbation of the members, to judge all courses run in this society, and all doubtful cases shall be referred to them.

14. This society to meet on the in and course on the following days.

Sect. VI. *Coursing, Simple or Unmatched.*

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UNMATCHED COURSING.

1996. *The practice of coursing* was originally thought sufficiently interesting of itself, without requiring the additional stimulus of matching the dogs of different individuals against each other, and rewarding the victors with prizes. Ovid thought the subject of a single handed course sufficiently attractive to call forth the powers of his pen, in language equally descriptive and poetical. Coursing thus pursued is not fettered with difficulties of awards displeasing to individuals, nor of the loss of the credit of a favourite dog being made public. It contains within itself sufficient interest to be undertaken alone, and it also affords amusement for several where the liberal principle is acknowledged, that pleasure is increased by being shared. It is an old adage, that, " Whatever is worth doing at all, is worth doing well." Thus private coursing, equally with public or match coursing, should be conducted in a true sportsmanlike manner; and even where a strict attention to *minutiæ* is dispensed with, yet all essential points, as the goodness of the dogs, their condition for running, &c. should be attended to. Nor should private coursing ever be conducted with less fairness towards the game than is allowed in match coursing. It should not be said of any one that he waged war on unequal terms against an inoffensive animal by *short law*, or by using more than a brace of greyhounds. We have heard of a leash so employed, which cannot be considered either fair or sportsmanlike. Turberville even says, " That (three greyhounds to one hare) is seldom seene, and a brace of dogges is enow for such a poor beaste." He also requires fair law for the hare, as " twelve score yards, or more, according to the ground or country where she sitteth." Listen to this, brother coursers, and stain not your hands with innocent blood, for unfair sporting is a sort of murder — it is at least malice prepense; and if this serious charge will not prevent you, let the odious name (accursed among true sportsmen) of *pot-hunter* deter you from any unfair practices. When a hare is found on her form, would it not be disgraceful to put her up without withdrawing the dogs to a fair distance; for without a fair start the match between the dog and his game is unequal. He is all expectation, the poor hare is " all in a maze," and we well know that she cannot, as Paddy would say, at once know how to " handle her legs." A gravid hare can often get away from harriers, but her chance is small against greyhounds: such a course therefore would savour of poaching, or at least of a total disregard of fair play. To keep up the reputation of a truly fair sportsman, no animal should be pursued, except such as under a natural state of the objects, *i. e.* the pursuers and the pursued, are nearly on a par. It is admissible, on the part of the sportsman, by the exercise of his *intellectual powers* to increase the chances in his favour, by cultivating the *natural powers* of the animals he calls in to aid him in his pursuit; but to go beyond this is certainly disgraceful to his character and to the sport itself. Fearing that these remarks may be considered as affected on our parts, and be said to savour of a pseudo humanity, we request the reader's attention to Arrian on the same subject, as quoted by Mr. Thacker in Rule 2. p. 596. The generous Patlander says, " fair play is a jewel," and he is right; in all our dealings with our friends, or with those creatures Providence has given us rule over, let no unfair advantages be taken against them. We challenge the candour of the sportsman, did he ever at all entrench on this principle without some compunctious feelings, and severe ones too. To enter further into detail on the practice of simple coursing we deem unnecessary, as in every essential it is the same with that we have already described. The courser either enters the field with his dogs only, himself being mounted or dismounted, or he may have a friend or two in company; in which latter case they separate, and carefully beat the ground over, being followed by the dogs. Some take a servant with them, who has the dogs in slips, which he does not loosen until called to by his master, whose call is made sooner or later, according to the nature of the ground, and the proximity or remoteness of cover. Others in their private coursings employ a hare finder, who having noted one, two, three, or more hares in form, the master either alone, or accompanied by friends and neighbours, sets forth pretty certain of sport. There may be luxury in this, and it may suit the idle; we, however, appeal to the feelings of most of those sporting readers who may honour these pages with their perusal, whether they enjoy the *kill* of a hare when found *for them*, half as much as when, in the true character of sportsmen, they have gone forth, and having found their own hares, have *fairly* coursed them down, or have seen them escape, to offer diversion for another day.

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COURSING.

PART VI.

FALCONRY, OR HAWKING.

1997. *This sport* was once the all prevailing pursuit of kings and princes, and no less so of ladies "fair." The enamoured knight, in times gone by, was wont to woo with his hawk on his hand; and the gift of one of these birds was a pledge between high-born lovers. The knight of chivalric fame would sooner part with his life than his hawk; and a cast of noble falcons was equal to a king's ransom. On account of historical associations, if for no other reason, we hope that we need no apology for any zeal in favour of falconry, or for our detail of its practice which is to follow.

1998. *Falconry and hawking are almost synonymous terms;* yet it is hardly possible to separate them, or to exclude either without injury; so that were we inclined to hinge our matter on one of these names only, it would require a more erudite head than our own to decide on which the lot ought to fall. The term *falcon* is apparently of French derivation; that of *hawk* is probably Saxon, and both are expressed in the Latin by *accipiter*. Falconry! the very sound of the word is lofty, and it really has the savour of high breeding about it; for not only were its winged agents the chosen companions of kings, princes, and nobles, but nature herself had already stamped them, ere the selection was made, with distinctive characters of prowess and high bearing. Hawking! This term is certainly less sonorous, but it appears to have equal claims with its partner to the "rust of time," those high prized crumbles that give inestimable value to a *mite* with an *eruginous* crust (what would not be given for a veritable *obulum* that had crossed the palm of Belisarius?), and raise the value of the autograph of some ancient worthy beyond the promissory note of any man *alive?* The terms *hawk* and *hawking*, having been much more extensively and more significantly, although sometimes erroneously used, than those of falcon and falconry even, imperatively forbid our omission of them, notwithstanding the more aristocratic claims of falcon and falconry. In the popular portions of our descriptions, both of falcons and hawks, as well as when we treat of the practice of falconry, we shall employ the phraseology common among falconers, and use hawk and falcon as synonymous. But in our systematic descriptions of these birds of prey we shall nevertheless endeavour to rectify the real misnomers, and to place the several individuals in the situation assigned to each by naturalists.

1999. *The connection between the sports of the field and the feathered races* which are found there, is too intimate not to make the study of their forms, habits, and properties, highly interesting to the sportsman, exclusive of the amusement which the pursuit of them affords. Nor is it difficult to prove that only a moderate acquaintance with ornithology would double his pleasures and lighten his toils.

CHAP. I.

THE SYSTEMATIC HISTORY OF BIRDS.

2000. *System forms the best foundation for every superstructure which the human mind builds.* The systematic arrangement of twenty-four letters forms the medium of communicating all that is known. Systematic zoology is the A B C of him who wishes to acquire a competent or a communicable knowledge of the living objects around him; and ornithology is that branch of zoology which treats on birds.

Sect. I. *The Progress of Ornithology as a Science.*

2001. *To enumerate all the writers on ornithology,* would force on us the notice of every one who has signalised himself as a writer on general zoology, from Aristotle to the present day. We shall, therefore, briefly glance at the labours of such only as have especially furthered the particular department of Natural History which treats on birds.

2002. *Aristotle himself notices birds as carnivorous, granivorous, and polyphagous.* He also tells us that some take their food on land, and some on the water. His observations also extended to their migrations, their habitations, food, and manners; but the sum of his writings can be considered as little more than an incentive to future labours in the same field. Pliny, as an author, was fanciful and interesting in the extreme; but as he wrote all that he heard, as well as all that he saw, few of the present day venture to repeat after him. In 1556 Belon of Mans, a native of France, published his systematic arrangement of birds, founded on their forms, properties, and modes of subsistence, and sprinkled also with some anatomical comparisons between their structure and that of *Mammalia.* His arrangement of birds of prey is excellent, and is even yet followed; but he was led into some incongruous grouping, by classing some of them according to the position, form, and material of their nests. Aldrovandus added something to the common stock, as did Gesner also. Johnson chiefly compiled from others.

2003. *The Ornithologia of Willoughby is principally grounded on external characters,* among which the forms of the beak and feet furnished him with lines of division: he also followed Belon in grouping them from their habits and their methods of subsistence, He classed birds into twenty divisions, eighteen of which are composed of terrestrial birds, and two are the aquatic. Ray, in his *Synopsis,* principally adopts the divisions of Willoughby; he however enlightened the subject by some valuable remarks on the internal structure of birds, and he likewise formed some new characters from the number of feathers in the tail.

2004. *The Linnæan system of ornithology* succeeded to that of the contemporaries of Ray, and by its fascinations of exhibiting the affinities which unite the larger groups of animals, for some time it threw a shade over the more *natural* methods of investigation; which methods, however, if pursued with extensive research, and if accompanied with copious induction, certainly lead to the acquirement of knowledge beyond all others. But, on the contrary, should the natural method lead to a total neglect of that precision apparent in Linnæus, which at least made his *indices* the grammar of zoology, then future naturalists will stand in the predicament of one who observes for himself alone, and who, without any direct medium of communication with others, can neither receive nor impart knowledge.

2005. *The names of Buffon and Pennant,* as interesting writers, must not be passed over; and if it was not their fate to add much to systematic ornithology, yet it must be allowed that one, by the warmth of his descriptions, and the other, by his method of rivetting the attention, have each acquired a fair claim to be considered as an ornament to his own country. Mr. Pennant, with some trifling alterations, has adopted Ray's scheme of arrangement.

2006. *Dr. Latham* also ranks as a zealous ornithologist, and his *General History of Birds*, which consists of eleven quarto volumes, with plates etched and coloured by himself, affords ample proof of his industry and attachment to the subject. This patriarchal naturalist is only lately deceased, at the advanced age of ninety and odd years. Dr. Latham's classification was essentially Linnæan.

2007. *Colonel Montague's Ornithological Dictionary offers*, likewise, one of the best illustrations of the knowledge which may be gained by the exertions of one individual, and the interest which may be excited in others by the observations made by what has been expressively called an "out-door naturalist." This respectable writer, without being a slave to the trammels of system, has added much to our knowledge of birds; and the second edition of his work, published two or three years ago, under the editorship of that accomplished naturalist, Mr. Rennie, will still further add to our stores. In our humble opinion the introductory matter prefixed to the work presents a well arranged outline of the past and present state of ornithology. We need not, we presume, remind the reader, that it was to this gentleman we are indebted for those interesting little tomes in the *Library of Entertaining Knowledge*, under the title of *The Architecture of Birds*. The names of Shaw, Albin, Donovan, Lewin, Turton, Lacépède, Duméril, Blumenbach, Vaillant, Edwards, Bewick, Selby, Griffith, Vigors, Fleming, Swainson, Wilson, Jardine, &c. &c. stand also as eminent contributors to this branch of zoology. As regards the graphic display of the natural figures of birds, we recommend attention to the masterly work of Mr. Audubon, which has been so highly eulogised by that accomplished and critical naturalist, Mr. Swainson. It would also be a signal injustice to our subject, and to writings at once popular and inductive, were we to omit the mention of those of Mr. Mudie, whose felicitous method of instruction is strikingly apparent in all he has written on the matter in hand. Nor can we refrain from particularly noticing the late instructive volumes on ornithology in the *Cabinet Cyclopædia* of Dr. Lardner, from the pen of William Swainson, Esq. as invaluable additions to science.

SUBSECT. 1. *The Cuvierian Division of Birds into Orders with Subdivisions and Examples of Species belonging to each.*

2008. *We have heard it objected to*, that as a bird is only an animal that flies, whereas beasts walk and run, that therefore there is little room for much systematic arrangement of them. The naturalist, on the contrary, encourages a very different sentiment; he regards them as the tenants of the skies, and as exhibiting in their aërial voyaging a specialty of structure that no artifice of man or beast can imitate. Cuvier has given to the study of ornithology a new spur, and has paved the road to it with new incitements, while these oviparous vertebrated animals, having both a double circulation and a double respiratory apparatus also, excite our admiration, and increase our wishes to become more intimately acquainted with their relative location in the ornithological scale of this great master.

I. With strong hooked beak and claws :—

Birds of prey	1. Flying by day. — Example: eagles, hawks, vultures, &c. 2. Flying by night. — Example: owls, &c.

II. With two toes or claws before and behind: — Example: climbers — woodpeckers, cuckoo, parrots, &c.

III. With a strong thick bill, nostrils large, and covered by a cartilaginous scale, and toes partly united at their base: —

Gallinaceous	Example: peacocks, pheasants, common fowls, partridges, pigeons, &c.

IV. Without the characters of any of the preceding :—

Passerine	1. With the beak notched on either side	butcher birds, flycatchers, chatterers, thrushes, nightingales, warblers, &c.
	2. With the mouth opening very far back	swallows, goatsuckers, or rather night-jars, larks, titmice, buntings, linnets, starlings, rooks, hooper, creepers, humming birds, kingfishers.

V. With long naked legs: —

Waders	1. With wings unfitted for flying	ostrich, emeu, cassowary.
	2. With very short or no hind toe	bustards, plovers, lapwings.
	3. With a long, broad, strong, and generally sharp beak	cranes, herons, storks, spoonbills, &c.
	4. With a long, slender, curved beak	curlews, snipes, woodcocks, &c.
	5. With very long toes, bordered by membrane	rails, water-hens, coots, flamingoes, &c.

VI. With webbed feet: —

Swimmers	1. With the legs very near the tail	divers, auks, penguins, &c.
	2. With very long, powerful wings	petrels, albatrosses, gulls, pelicans, cormorants, &c.
	3. With a large fleshy tongue, and a thick beak, covered with softish skin, and finely notched at the edges.	swans, geese, ducks, &c.

Subsect. 2. *The Linnæan Arrangement of Birds.*

2009. *Birds form the second grand division of the Linnæan system of the animals;* and are characterised by having the body covered with feathers. The Linnæan orders are six: —

1. Accípitres (*accipiter*, a hawk; hawk kind, or birds of prey). Bill and claws strongly arched (*a*, *fig.* 306.).

2. Pìcæ (*pica*, a magpie; magpie kind, or peckers). Bill compressed, a little curved (*b*).

3. A′nseres (*anser*, a goose; of the goose kind). Bill obtuse at the end (*c*); feet webbed (*d*).

4. Grállæ (*grallæ*, stilts; stalkers). Legs very long (*c*)

5. Gallìnæ (*gallus*, a cock; pheasant kind). Bill convex, the upper mandible arched (*f*); toes connected by a membrane at the bottom (*g*); tail feathers more than twelve (*h*).

6. Pásseres (*passer*, a sparrow; sparrow kind). Bill conic, pointed; nostrils oval, broad, naked (*i*).

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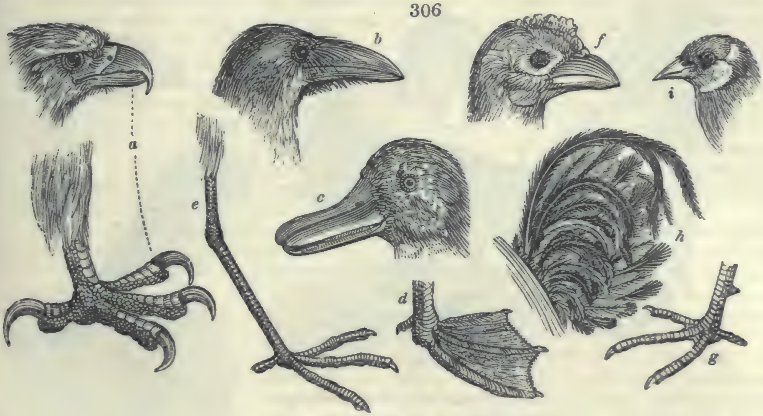

LINNÆAN ARRANGEMENT OF BIRDS.

2010. *Pennant arranged birds into two divisions,* viz. land birds and water birds. These he subdivided into nine orders, of which the land birds formed six, viz. rapacious, pies, gallinaceous, columbine, passerine, and struthious; and the water birds three, viz. cloven-footed or waders, pinnated-footed, and web-footed. Brisson arranged birds into two grand divisions, viz. cloven-footed and web-footed. In the first are 17 orders and 85 genera; in the second, 9 orders and 28 genera. Dr. Latham's arrangement is as follows: — First division: Land birds, Terréstres. — Order 1. Accípitres, or rapacious; 2. Pìcæ, pies; 3. Pásseres, passerine; 4. Colúmbæ, pigeons; 5. Gallìnæ, gallinaceous; 6. Struthiònes, struthious. Second division: Water birds, Aquáticæ. — Order 7. Grállæ, waders; 8. Grállæ-pinnatípedes, waders with pinnated feet; 9. Palmípedes, web-footed. The number of genera in the Linnæan arrangement is 78, and of species 930. The species described by Dr. Latham amounts to about 5000. The number of Dr. Latham's genera is increased by his having divided some of the genera of Linnæus into two or more genera." (*Magazine of Natural History*, p. 121.)

◆

CHAP. II.

THE STRUCTURE AND FUNCTIONS OF BIRDS.

2011. *We cannot but suppose that the sportsman,* who receives so much pleasure from bringing these animals to bag in the field, does occasionally also, when dismembering them at his table, feel some curiosity with regard to the construction and functions of the several parts of the body of the bird as they appear before him. Nor can we doubt but that the parallel we have already drawn, between the framing of the winged race not only with his own but with that also of quadrupeds and reptiles, must awaken a wish to inquire into this wonderful harmony in the scheme of nature, that creates living creatures so apparently discordant on one common model. Should these hints at all tend to engage our sporting friends in such an inquiry, we will not pay either them or ourselves so bad a compliment as to suppose that they will stop short of accompanying us throughout our ornithological detail, which, however it may leave much untold, shall at least point out where all the rest may be obtained.

Sect. I. *External Parts of the Body of Birds.*

2012. *The external parts of birds are feathers, horn, and some naked skin.* Our detail of the external anatomy of animals generally has already described the cuticular and membranous expansion, called the skin of birds; it also noticed the feathers, bills, claws, and spurs, as integumental appendages. Feathers being, however, the distinguishing character which separates birds from all other animals, will engage a little more of our attention as soon as we have introduced the conventional terms used in the study of ornithology.

2013. *Terms used in ornithology.* To a ready understanding of this branch of Natural History, and of the works treating thereon, it is necessary that a table of the terminology made use of in the descriptions of birds should be laid before the reader (*fig.* 307.).

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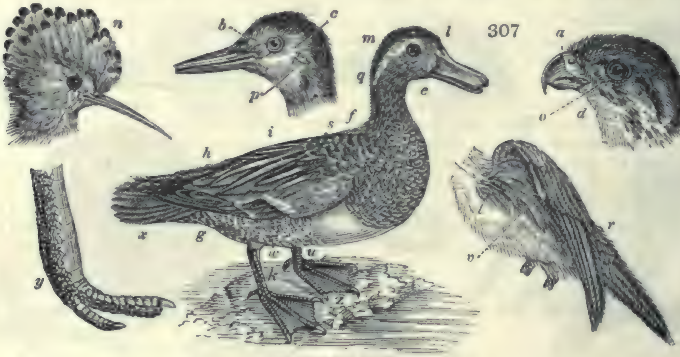

TERMINOLOGY OF BIRDS.

Terms used in Ornithology.

Càput, the head.
Róstrum, the bill.
Nâres, the nostril.
Cêra, wax on the bill (*a*, *fig.* 307).
Língua, the tongue.
Capústrum, the face.
Lòrum, the lore (*b*).
Témpora, the temples (*c*).
Bárba, the beard (*d*).
Gùla, the chin (*e*).
Hùmeri, the shoulders (*f*).
Críssum, the vent (*g*).
Téctrices, the wing coverts (*h*).
A'lula spùria, bastard wing (*v*).
Spéculum, the wing spot (*w*).
Scapuláres, scapulars (*i*).
Caúda, the tail.
Téctrices caudæ, the tail coverts (*x*).
Crùra, the legs (*k*).
Fémora, the thighs.
Tridáctyli, three-toed.
Didáctyli, two-toed (*y*).
Pes, the foot.
Natatòrius, palmated feet (*z*).
Frons, the forehead (*l*).
Vértex, the crown.
O'cciput, the hind-head (*m*).
Crísta, the crest (*n*).
O'culi, the eyes.
Supercília, the eyebrows.
O'rbitæ. the orbits (*o*).
Gènæ, the cheeks.
Aúres, the ears (*p*).
Cóllum, the neck.
Nùcha, the nape (*q*).
Júgulum, the throat.
U'ropygium, the rump (*r*).
Interscápulum, between shoulders (*s*).
Axíllæ, axillaries (*t*).
Hypocóndriæ, hypocondriæ (*u*).
Córpus, the body.
Dórsum, the back.
Péctus, the breast.
Abdòmen, the belly.
Ambulatorii, walking.
Scansòrii, climbing.
A'læ, the wings.
Réctrices, the tail feathers.
Armillæ, bracelets.
Dígiti, the toes.
Gressòrii, leaping.
Prehénsilis, grasping.
Lobàtus, lobed feet (*a*, *fig.* 308.)
Pinnatus, pinnated (*b*).
Calcària, the spurs (*c*).
Carunculæ, wattles (*d*).
Ingluvies, the crop.
Semipalmàtus, semipalmated feet (*e*).
U'ngues, the claws (*f*).
Cornua, the horns.
Saccus juguláris, the pouch.

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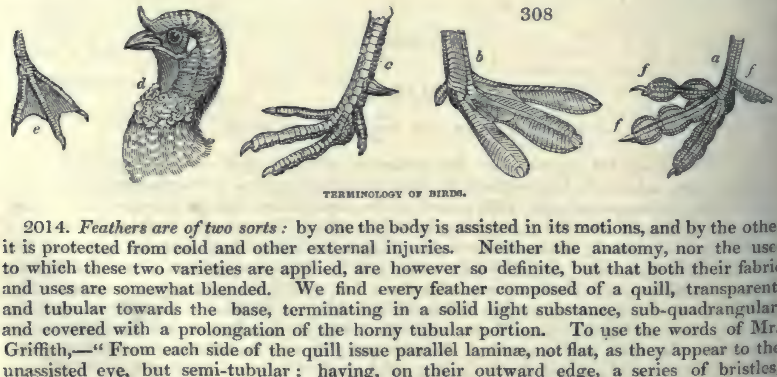

TERMINOLOGY OF BIRDS.

2014. *Feathers are of two sorts:* by one the body is assisted in its motions, and by the other it is protected from cold and other external injuries. Neither the anatomy, nor the uses to which these two varieties are applied, are however so definite, but that both their fabric and uses are somewhat blended. We find every feather composed of a quill, transparent, and tubular towards the base, terminating in a solid light substance, sub-quadrangular, and covered with a prolongation of the horny tubular portion. To use the words of Mr. Griffith,—"From each side of the quill issue parallel laminæ, not flat, as they appear to the unassisted eye, but semi-tubular; having, on their outward edge, a series of bristles, set in pairs opposite one another, which clasp with the bristles of the approximate laminæ, and cause that adhesiveness observable between the several laminæ of the vane, and that readiness to reunite after they have been forcibly separated. These bristles are not of the same form on each side of one lamina, the lower tier forming a simple and slight curve, while the upper terminates with three or four little hooks, which serve to catch the simple corresponding bristle of the next lamina." (*An. King.* vol. vi. p. 105.) It must be evident that this infinity of minute tubes, when filled with air, must have a direct tendency to render the bird buoyant. This effect is also greatly assisted by the placing of the feathers on the body, which Mr. Mudie, in his *Natural History of Birds*, observes, "is such as always to present a smooth surface upwards and forwards, so that the animal can move in either of these directions, with very little resistance from the friction of the air. When it moves in either of them, the resistance of friction does not increase so rapidly as the rate of motion, because the pressure smooths the feathers, and causes the air to take less hold on them. This property, which arises in part from the texture of the upper surface of the feathers, but chiefly from the way in which they are formed and placed, is of equal service to birds, when they must perch, or otherwise remain at rest, so as to abide the blast, as when they fly exposed to it. When either perching or flying, a bird in the wind always faces the current, and so offers the least resistance to it, both by its form and its feathers." (P. 37.) Thus, when the wind is high, the gunner steals up-wind on the wood-pigeon, who, in such weather, always perching in face of the blast, is insensible both to the sound and scent of his enemy. It is this arrangement of the feathers, likewise, which makes it so difficult to shoot wildfowl, whose plumes, being both thick and numerous, are almost impenetrable unless they be struck from behind.

2015. *The feathers designed principally for clothing*, however varied they may be in form and placing to those we have just described, yet exhibit an equal capability of adaptation to the purposes we have hinted at. They may be said to be set in an imbricated manner over the body, the termination of one forming the basis of two others, as seen in *fig.* 309., at the same time having their outer surface laminated, but their under surface downy. It is, however, necessary to do justice to the subject to observe, that the skin itself under these feathers is likewise studded with fine plumose particles of a downy texture, with which the like surface of the clothing feathers unites and adheres, so as to form together a wrapper warmer than the finest lamb's wool dress. To complete this admirable tunic the *coverts* (feathers so called) are seen curving around the body, so as to perfectly deny access to either wet or cold. We cannot help requesting the reader again to look over this account, and to apply the remembrance of it to every bird he meets with; and if he be at all alive to admirable design, he will see it here; and, so observing, can never forget either the bird or the maker of that bird. It is needless for us to remark much on the tints which present themselves in the clothing feathers of birds, they being so varied as to defy critical description: we shall, however, just observe, that a metallic lustre is frequently seen over the surfaces, and most on those most exposed to the action of the elements. The feathers of birds of every kind are, indeed, to a certain degree waterproof; but those of aquatic birds are more decidedly so. An oily secretion in them, particularly, is pressed from orifices near the base of the tail, which being forced out between the mandibles, is passed over the feathers by the same means; and the oil thus partially smeared, is spread more evenly over the body by means of the head. This process, called *preening*, every one who has ever watched ducks by the side of a pond, must be familiar with; and the matter offers us another opportunity of pointing out how simply, but how effectively, all the wants of animals are supplied. The feathers of birds differ extremely in many respects from each other: in birds of prey they are strong and decided, yet each year varies their colour, though it leaves the peculiarity of figure nearly the same. There are considerable differences observable also between the feathers employed in protecting the body from cold, and hence called clothing feathers, and those by which flight is operated. These latter are much longer and stronger, as well as more structurally perfect, as on them the most important actions of the life of the animal depends. By them it extends its flight in search of food; by them it pursues its prey, or retreats before a stronger foe. Most birds own three varieties of feathers: first, those which are concealed from sight, of a downy texture, and well fitted to sustain the heat of the body; second, those more external, which we have just exhibited as imbricated in their placing; those which sustain the body in its flight form the third variety, and are seen fully developed in the wings and tail. Each of these feathers are composed of a downy portion close to the insertion of the feather into the body; and of a second kind, which is webbed or laminated; third, of a pointed hollow portion, known as the quill, and which is inserted into the body. Almost the whole feathered portion, which is not immediately exposed, is white, while the exposed parts are diversified in their colourings.

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IMBRICATED FEATHERS.

Subsect. 1. *Technical Terms used by Ornithologists in their Descriptions of the external Parts of Birds.*

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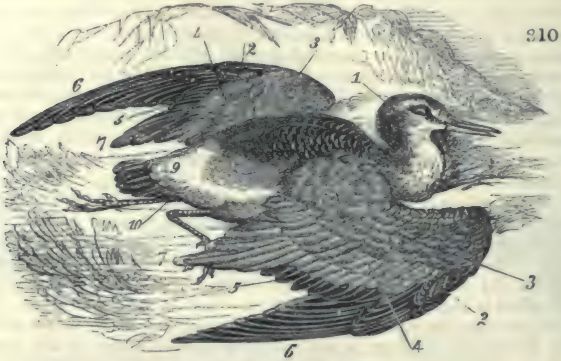

TECHNICAL NAMES OF FEATHERS.

2016. *The feathers, which cover the body* receive appellations according to their situation as follows, are exemplified in *fig.* 310. on the body of a snipe: — 1. *Auriculars*, feathers which cover the ears. 2, 2. The *bastard wing*, covered with three or five quill-like feathers, placed at a small joint rising at the middle part of the wing. 3, 3. The *lesser coverts of the wings*, small feathers that lie in several rows on the bones of the wings. The *under coverts* are those that line the inside of the wings. 4, 4. The *greater coverts*, the feathers that lie immediately over the quill feathers and the secondaries. 5, 5. The *primaries*, or *primary quills*, the largest feathers of the wings; they rise from the first bone. 6, 6. The *secondaries*, or *secondary quills*, those that rise from the second bone. 7, 7. The *tertials*. These also take their rise from the second bone at the *elbow joint*, forming a continuation of the secondaries, and seem to do the same with the scapulars which lie over them. These feathers are so long in some of the *Scolopax* and *Tringa* genera, that when the bird is flying, they give it the appearance of having four wings. 8, 8. The *scapulars*, or *scapular feathers*, take their rise from the shoulders, and cover the sides of the back. 9. *Coverts of the tail.* These feathers cover it on the upper side at the base. 10. The *vent feathers*, those that extend from the vent, or *anus*, to the tail underneath.

Sect. II. *The internal Structure of Birds.*

2017. *The bones of birds*, as of quadrupeds, sustain the soft parts, and will therefore first engage our attention. The general composition of bones, and the nature of their connecting *media*, have been already noticed. Their integuments and external appendages have likewise engaged some attention in our sketch of the *External Anatomy of Animals generally*, p. 169.

2018. *The air cells* in the bones of birds constitute a peculiarity which distinguishes them from the cellular receptacles of marrow in the bones of quadrupeds. The bones of birds may indeed be said to receive air in two ways; those of the head are filled by the mouth and nose, whereas those of the trunk and extremities are inflated from direct communications with the lungs. In their long bones an orifice for the purpose may be usually seen at the extremity of the bone. It is very apparent in *fig.* 311., where a bristle is inserted to mark it. These receptacles answer important purposes; they are aërial reservoirs to supply the waste of air made while the bird is singing on the wing, or when rapidly flying; they also are stores for the separation of oxygen; and further, they greatly add to the buoyancy of the body, and which, in our opinion, was the chief office designed for them by the Great Architect of nature. Our description of the mechanism of the feathers shows them to be so formed and so placed that they offer but little resistance to progression; and, when we further add the admirable contrivance of rendering the whole mass more buoyant by inflation, and the admitting air throughout the cavities of the bones also, our surprise lessens at the phenomena of flight. It is the absence of these structural peculiarities in ourselves that effectually binds us to the earth. Mr. Mudie, in his *Nat. Hist. of Birds*, p. 40., notices a would-be human flier, who, in attempting to use a pair of artificial wings in descending from a barn escaped with his life, but with a full conviction that his frame was not essentially volant, even with the aid of artificial wings.

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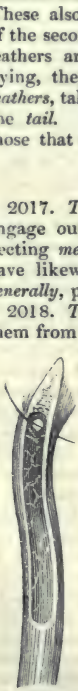

AIR CELLS.

SUBSECT. 1. *The Skeleton of Birds.*

2019. *We have previously had occasion to remark on the uniformity of the general assemblage of bones in birds* compared with that of the other classes of vertebrated animals. The uniformity in the skeletons of birds, as respects one another, is even more remarkable. Our exemplar (*fig.* 312.) is a portrait of the bones of a falcon, and was chosen by us as the most appropriate effigy to illustrate a treatise on hawking. The skull: — *a*, the frontal bone; *b*, the parietal; *c*, the occipital; *d*, condoloid portion of the occipital bone; *e*, the orbit; *f*, the nasal bone to which the bill is attached, and at which part the upper portion of the bill is movable from the nature of its connection with the nasal frontal and ethmoid bones; *g*, the zygoma, or cheek bone; *h*, the os quadratum, or square bone, by which the lower jaw is articulated with the skull; *i*, the superciliary process and bone peculiar to the *Accipitres*, or birds of prey; *k*, cervical vertebræ; *l*, the dorsal vertebræ; *m*, *n*, the pelvis; *m*, iliac portion of the pelvis; *n*, ischiatic portion of the pelvis; *o*, pubis, or share bone; *p*, caudal or tail vertebræ; *q*, the last caudal vertebræ; *r*, the furcula, or fork-bone, vulgarly called merry-thought, a bone peculiar to birds; *s*, the sternum; *t*, the ribs; *w*, the clavicle, which, slender as it appears, is yet an important appendage to the skeleton, as without it birds that use the true walk would move with difficulty.

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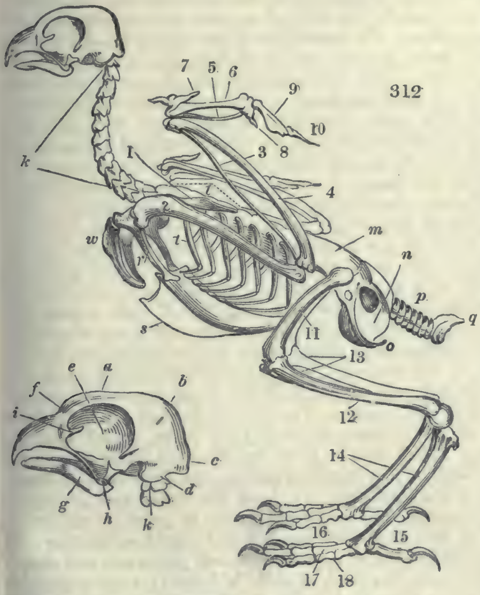

SKELETON OF FALCON.

2020. *The wing, or upper extremity, is numbered as follows:* — 1, scapula, or shoulder-blade, attached to a part of the clavicle; 2. humerus, or great arm bone; 3, and 4, radius and ulna, the two bones that form the fore-arm, which serves for an attachment to the secondary quill-feathers; 5, the carpal, or wrist bone; 6, the thumb; 7, metacarpal of the little finger; 8, metacarpal of the great finger of the wing; 9 answers to the metacarpal of the little finger; 10 marks the first and second phalanx of the great finger. It may be well to observe, that it is between the radius and ulna, and also between the two great metacarpal bones that ligatures are placed to save the lives of birds whose blood-vessels have been divided, the method of doing which will hereafter be fully explained. We shall again recur to the wings, as compared with the human arm, and also to the osteology of the falcon's wing as an organ of offence as well as of powerful flight.

2021. *The leg, or lower extremity* (11, *fig.* 312.), the femur or thigh bone; 12, the tibia; 13, the rudiments of a fibula; 14, the metatarsal bone, — the hock of quadrupeds being wanting in birds, its place is supplied by the upper part of the head of this bone; 15, the hind claw, or great toe; 16, 17, 18, the second, middle, and third toes.

2022. *The skull of birds*, it may be observed from *fig.* 302., instead of being divided by sutures, has its different bony pieces consolidated, as it were, into one. In oviparous animals it is evident there was no necessity of sutures, to enable the head to accommodate itself to the passage through which it first entered the world, and consequently there are none. To give great freedom of motion to the head there is only one long protuberance, or condyle, to the occipital bone. The orbits (*e*) in birds, it will be observed, are of a remarkable size, and are separated from each other, either by a membranous, or by a thin bony septum, as the case may be. The superior maxilla, or jaw, which, it is well known, is immovable in quadrupeds, has, with few exceptions, some slight motion in birds. In the parrot tribe it is an individual bone, distinct from the rest of the skull bones, and is furnished with an articulation, by which means all the members of this vast family are seen to elevate the upper half of the beak, or bill, without displacing the lower. Here is seen an ingenious departure from a common model, to meet particular habits in the animal concerned.

2023. *The horny bill or beak of birds* is a very important organ, as we may be assured, by the great diversity of forms it assumes in different genera. Our leading line is worded

" the *horny* bill," but it must be taken into the account, that to every bill there is an osseous part also; a kind of bony core or base, formed by an elongation of the bones of the jaws. Bill and beak, as names, are by many used synonymously; but Mr. Mudie very properly observes, though all beaks may be called bills, all bills cannot be called beaks. We acknowledge the truth of this, though we may not, for the sake of general convenience, slavishly adhere to the distinction in our descriptions. The mandibles of falcons, hawks, and parrots, may justly be called beaks, from their solid texture, and from their general figure being adapted to the breaking of hard substances. The mandibles of birds of prey, as *true beaks*, will be more fully exemplified when we treat on them as connected with the practice of hawking. The *bill*, properly so called, is more diversified in figure, size, and substance, than the beak, because its adaptations are as numerous as the varieties of food which furnish support for different classes of omnivorous birds are multiplied. These diversities, in the form of the mandibles of birds, are of use also to the naturalist, as serving to furnish him with distinctive characters necessary to the classification of the objects of his study. How much also must these diversities inspire us who behold them with admiration, at so perfect an adaptation of form to the varied wants of the feathered tribes which use them! How few actions are there that the human tongue, teeth, and lips, can perform, that cannot be done also by means of the mandibles of a bird! " Instead," as Paley remarks, " of the fleshy lips and teeth of enamelled bone, there is to perform the office of both a hard substance (of the same nature with that which composes the nails, claws, and hoofs of quadrupeds) cut out into proper shapes, and mechanically suited to the actions which are wanted. The sharp edge and tempered point of the sparrow's bill picks almost every kind of seed from its concealment in the path; and not only so, but hulls the grain, breaks and shatters the coats of the seed, in order to get at the kernel. The hooked beak of the hawk tribe separates the flesh from the bones of the animals which it feeds upon, almost with the cleanness and precision of a dissector's knife; and by it the butcher-bird transfixes its prey upon the spike of a thorn, and then uses it in dexterously picking the flesh from its bones. In some birds of this class we have the cross-bill, *i. e.* both the upper and lower bills hooked, and their tips crossing. The spoon-bill enables the goose to graze, to collect its food from the bottom of pools, or to seek it amidst the soft and liquid substances with which it is mixed. The long tapering bill of the snipe and woodcock penetrates still deeper into moist earth, which is the bed in which the food of both is lodged; consequently in figure this is exactly the instrument which these birds wanted. They did not want strength in their bills, which would have been inconsistent with the slender form of their necks, as well as unnecessary for the kind of aliment upon which they subsist; it was only length t reach the object that was wanted by them in this extension of their mandibles." Sir Charles Bell, on the same interesting subject, has something to the following purport: — " If w look to the bill of a bird, we shall find that it is withal a fly-trap; hence its motions mus be rapid, and the velocity is increased by the most obvious means imaginable, that is, b giving motion to both mandibles, instead of to one. When a dog snaps, he throws bac his head, and thereby raises the upper jaw at the same time that the lower jaw is dropped but these are slow and clumsy motions, pertaining to the muscles of the neck as well as o the jaws; and the poor hound makes many attempts before he catches the fly that teaze him. But a swallow or fly-catcher makes no second effort, so admirably suited is th apparatus of prehension to the liveliness of the eye, and to the instinct which directs th motions of its prehensile organs. The adaptation of the instrument consists in this, tha the muscles which open the lower mandible, by the same effort, open the upper one also A process of the lower mandible, projecting much behind the centre of motion and th muscle which is attached to it, opens the bill; but, at the same time, the lower mandibl presses upon the bone, the *os quadratum*. Now, there is attached to this bone, projectin forwards, with its anterior extremity fixed against the upper mandible, a shaft or process bone, and this receives the pressure of the *os quadratum* when the muscle acts; so that, bein thrust forwards like a bolt, it opens the upper mandible which moves upon the skull. Her then, is a piece of mechanism as distinct as the lock of a gun, which is for the purpose, we have said, of giving rapidity to the motions of the bill. Is it nearer the truth to consid this as a new apparatus, suiting the necessities of the creature, or an accidental result of th introduction of a bone, which, in its proper office, has nothing to do with the jaw? Without doubt, this admirable mechanism is the work of Nature's Grand Mechanist, an thus so readily fulfils its purposed intention.

2024. " *The bill of birds*," says another eminent comparative anatomist, " may be co sidered, in some degree, as supplying the place of teeth. It consists of a bony fibro matter, similar to that of the nail, or of proper horns; and is moulded to the shape of t bones which constitute the two mandibles, being formed from a soft vascular substan which covers these bones. In fact, it is evident that the figure and dimensions of t mandibles in birds are as intimately connected with the habits and general character of t bird, as those of the teeth are in quadrupeds. They are of extraordinary hardness those which first bill and then tear their prey, as in eagles, or in those which have to brui hard fruits, as parrots, as well as in those which have to penetrate the bark of trees, as the woodpecker, nuthatch, &c.; but they are soft in such as obtain their food in mud or water, as in ducks, woodcocks, snipes, &c. Many birds, especially birds of prey and the gallinaceous tribe, have the base of the bill covered with a soft skin, called *cere* (*a*, *fig.* 307.), the use of which, however, is not clearly understood. When the cere extends to the eye, it is called *lores*. As the bill of birds is at the same time the organ of prehension and manducation, it has an important influence on their character and habits; *cæteris paribus*, there is greater strength in a short than in a long bill, in a thick and solid than in a thin or flexible one; but the general form produces infinite variety in the application of force. A bill hooked at the end with sharp edges characterises birds of prey, whether those which prey on the smaller birds and quadrupeds, or those which prey on fishes, as the albatross, the petrel, &c. The former have a shorter beak, and proportionately greater strength. A tooth-like process on each side adds greatly to the strength of such a bill; hence the birds which are provided with these processes are considered more noble and courageous than the birds of prey which want them, as will be more fully exemplified hereafter. The shrike, which possesses them, scarcely yields in courage to the larger predacious birds, notwithstanding its small size, and the weakness of its wings and feet. When the hooked bill tapers towards the end, it approximates to the knife-shaped bill, which is peculiar to semi-predacious birds, birds of carrion, crows, pies, &c. The knife-shaped bill indicates a character similar to that of aquatic birds, such as the grebe, gull, &c. The bills of ducks, which are in some degree flattened, the more conical ones of geese and swans, and that of the flamingo, of which the upper mandible crosses the lower, have all transverse laminæ ranged along their edges, that, when the bird has seized any thing in the water, give passage to the superfluous fluid: thus all these birds are aquatic. In the goosander, which in other respects partakes very much of the nature of ducks, these laminæ become small, conical, tooth-like processes, well adapted for holding fish, of which the goosander destroys great numbers. Wholly different from these are the long, thin, soft bills, peculiar to birds which derive their food from animals contained in mud or stagnant waters, adapted to their several purposes: they are straight and long in the snipe, hooked towards the end in the curlew, and towards the top in the avocette." (Notes to second edition of *Blumenbach*, by Messrs. Lawrence and Coulson, p. 58.) The skull of birds of prey is short and broad, the orbits large and separated by a bony septum, the nasal cavity is large, and the auditory also.

2025. *The spinal column in birds* presents some important variations from that of quadrupeds. The cervical vertebræ (*k*, *fig.* 312.) are remarkable for their number, which varies with the kind from nine to twenty-three, and being articulated by means of cylindrical eminences, they allow of great extent of motion; a few of the upper pieces only bend forwards, while the remainder can move in any direction; but they do it backward with most ease. Were there not great flexibility in the neck, birds could not repose as they usually do. Indeed, it is from the mobility of the head and neck that most of their operations are so effectively performed. The vertebræ of the back (*l*, *fig.* 312.), on the contrary, are most of them anchylosed, or, as it were, soldered together, by which they present a firm support for the blade-bones, which in birds are very large, and, unlike those of quadrupeds, lie nearly parallel to the mesial line of the spine. A little reflection will therefore show, that, without a stiffened backbone, the wings would be liable to suffer dislocation, and that this specialty was intended for this purpose of fixed support is evident, for in such birds as do not fly, as the ostrich and cassowary, the spine is flexible. The number of vertebræ in the tail (*p*, *fig.* 312.), differs; in such as move it forcibly they are numerous, in the rowing and sailing tribes, as will be noticed hereafter. The vertebræ in the *Rapaces* are cervical, usually twelve; dorsal, nine; united lumbar and sacral, eleven or twelve; caudal, eight, sometimes nine; the last large and cultiform.

2026. *The ribs of birds* are fewer than those of quadrupeds; it is said they never exceed ten pairs, while small intermediate bones unite the true ribs to the sternum: birds of prey have only seven true ribs, the remainder are directed upwards and backwards.

2027. *The pelvis of birds* (*m*, *n*, *fig.* 312.) presents a solidified mass of lumbar vertebræ connected with two broad ossa innominata, or haunch bones, and the sacrum. The pelvic basin opens ventrally, where the symphisis pubis occurs in quadrupeds: it is, however, closed in the ostrich and the cassowary, by which an additional support is afforded to their legs in running, the size and extraordinary exertions of which require it (*z*, *fig.* 312.).

2028. *The sternum or breast-bone of almost all birds is keeled*, but its ridge is more prominent in some than in others. In birds of prey, and in most of those with great powers of wing, it is particularly so; in them it is deeply concave also, to lodge the very massive and powerful pectoral muscles which act on the wings; and thus it is that in the ostrich and cassowary, who do not fly, there is no christa or keel to the sternum. As an addition to the strength of the sternum of birds of prey, and the same with some others which have vast powers of wing, the sternum is ossified throughout, and also nearly solid, exhibiting only two small openings near its posterior angle."

2029. "*The wings*," observes Blumenbach, "are connected to the trunk by means of three remarkable bones. The clavicles, which are always strong, constitute straight cylindrical bones, the anterior extremities of which are connected to the sternum by means of a bone peculiar to birds, viz. the fork-like bone, or, as it is more commonly termed, the merry-thought (*furcula*, or *os jugale*, in Latin; *la lunette*, or *fourchette*, in French). The ostrich and cassowary have, indeed, no separate furcula; but on either side of the front of the chest is seen an elongated flat bone, consisting of a rudiment of the furcula, with the clavicle and scapula consolidated into one piece." These parts receive a further illustration from Mr. Macartney, thus, — "The point of the fork-like bone is joined to the most prominent part of the keel of the sternum; and the extremities of its two branches are tied to the humeral end of the clavicles and the front of the scapula, just where these bones join each other, and are articulated with the humerus. Hence it serves to keep the wings apart in the rapid motions of flying." "As a general observation it may be stated that the fork is strong and elastic, and its branches wide, arched, and carried forwards upon the body, in proportion as the bird possesses strength and rapidity of flight; and accordingly the struthious birds (ostrich and cassowary), which are incapable of this mode of progression, have the fork very imperfectly formed. The two branches are very short, and never united in the African ostrich, but are anchylosed with the scapula and clavicle; the cassowary, indeed, has merely two little processes from the side of the clavicle, which are the rudiments of the branches of the fork. In the New Holland ostrich there are two very small thin bones, which are attached to the anterior edge of the dorsal end of the clavicles by a ligament; they are directed upwards towards the neck, where they are fastened to each other by ligamentous union, and have no connection whatever with the sternum." In birds of prey the clavicles, like the whole of their osteology, are very strong, and the furcula or merry-thought bears the same masculine stamp. In its branchings it forms a resemblance to the letter V, by which figure it is enabled to offer the resistance of an arch to the great forces applied to it. The furcal-bone (*r*, *fig.* 312.), as is well known, varies greatly in figure in different birds, but it will always be found most arched where the flight is the most powerful and extensive. All its other peculiarities, also, are suited to the particular purposes of the species it belongs to.

2030. *The bones of the wings and legs of birds* are more simply framed than those of man or quadrupeds. A general resemblance to both, however, is apparent. In the wing, the humerus (2, *fig.* 312.), is the longest and strongest bone in the limb, and the lengths of the others diminish in the proportion of their other dimensions, so that thereby, when the wing is moved, the different parts move with velocities proportional to their distances from the centre of action; yet the velocity of the entire is uniform, and the whole under surface of the wing strikes the air with nearly equal force. The wing bones are much varied in different subjects to suit their several purposes, of which the penguin is a striking instance. This bird has two supernumerary bones at the elbow, while that which should correspond with the habits of the bird and the general fin-like form of the organ, plainly shows that it was more intended to act in water than on land. The humerus and cubitus, or first and second wing bones of birds of prey, are elongated and very strong. We have already stated that more analogy exists between the wing of a bird and the arm of a man, than a hasty observer would suppose. Mr. Swainson's scientific elucidation of this matter will bear out our assertion.

2031. "*The joints of the wing*," he observes, "correspond with, and are analogous to, those of man and of quadrupeds; yet they are so singularly modified, that an ordinary observer would not perceive their mutual relation." In the annexed cut (*fig.* 313.), which represents the outlines of both, *a a* is the ***humerus*** or ***brachium***, *b b* the fore-arm or ***cubitus***, and *c c* the carpus, or hand. This latter, in man and in quadrupeds, is divided into fingers or claws; but in birds, according to M. Cuvier, there is only one small bone representing a finger, with the vestige of two others. If, therefore, the human arm was also an instrument of flight, it would present the appearance of the two fingers, blended together as in the cut. The absence of digits or fingers to the carpus or hand is, however, supplied in birds by the longest and most powerful of all the wing feathers, which bring the wings of both, however differently constructed, nearly to the same shape. (*Cabinet Cyclopædia*, vol. lxxxiii. p. 80.) We cannot pass over any opportunity of noting the *Harmonies of Nature*, which have been so well written on by a well-known author. This resemblance between the arm of man and the wing of bird is striking when displayed, although not even suspected until then.

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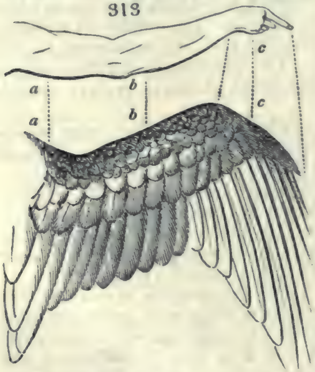


ARM AND WING COMPARED.

2032. *In the lower extremities of birds*, likewise, variations from a common type are me with, corresponding with the habits of the wearers. The femur, or thigh bone, is moderately long and strong in birds of prey, and in them a patella is seen, as well as in the winged grebe and a few others also. In the waders, as the stork, heron, &c. and in the runners, as the ostrich and cassowary, the tibia and the bone common to the tarsus, or, more properly, to the metatarsus, are long, and thus adapted to elevate the one in the water, and to assist the other in running. A slender fibula exists in most, if not in all, birds, although its existence is denied by Blumenbach. It is distinct in the predacious birds, and in some others also; in many, however, it is not distinct, but united by anchylosis with the tibia. The metatarsal bones in most birds of prey are short and strong; in a few only they are slender and not abbreviated: the hinder toe in these birds articulates with a small distinct bone, and has two phalangeal portions; the second toe has three, the third four, and the fourth five; at least such is the case in the specimens that usually come under notice.

SECT. III. *The Brain and Organs of Sense in Birds.*

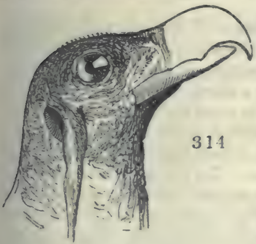
2033. *The brain of birds* does not appear, at first sight, to materially differ from that of man and quadrupeds; it however, when studiously examined, evidently descends in the scale of structural development. It may be remarked of it, likewise, that although it presents three principal divisions, as in *Mammalia*, the relative situations of these divisions differ somewhat in being placed rather below than behind each other. There is a remarkable discrepancy, likewise, in the relative proportion of brain to the rest of the body in different birds. Carus found it in the eagle at $\frac{1}{160}$, in the siskin at $\frac{1}{231}$, in the pigeon at $\frac{1}{90}$, in the chaffinch $\frac{1}{19}$ of the weight of the body. The spinal marrow or spinal brain of birds presents a minute canal, as in quadrupeds. There is also a similar division of its substance into columns; and the spinal and cerebral nerves are given off in the same manner as in quadrupeds, and present also, as in them, the different nerves of sensation and motion, and the same sympathetic communication between all the important viscera of the body.

SUBSECT. 1. *The Senses of Seeing, Hearing, Tasting, Smelling, and Touch in Birds.*

2034. *The importance of eyes to birds* is marked by the circumstance, that whereas among all other animals there are some which are either altogether or partially blind, it is observed that no bird whatever is doomed to grope its way through life in total unconsciousness of light. The value of light to birds is further inferred from the size of the organ receiving it, which is considerable in all, but in the rapacious tribes it is more particularly so. The ball of the eye is sunk in a bony orbit of great size, the sides of which furnish four straight and two oblique muscles to operate its various motions. Posteriorly the globe is hemispherical, anteriorly a bony circle, composed of minute laminæ, inserted between the sclerotic coats, contracts its figure to that of a short cylinder, to which the cornea is attached as an interior and smaller hemisphere. This peculiarity of structure is important to the vision of birds; in some the axis or depth of the eye-ball is lengthened or diminished by different portions of the sclerotic coat, by which admirable contrivance the action of the four muscles we have noticed, is rendered more effective in altering the focal angle. Birds, after the manner of the higher orders of mammiferous animals, have three eyelids; but it is to be noted, that their nictating membrane, or third eyelid, extends completely over the globe. Another peculiarity in the eye of birds is the *marsupium*, which is a corrugate membrane covered with a black pigment, which probably absorbs superfluous rays.

2035. *The vision of birds is acute in the extreme*, and exceeds that of quadrupeds almost beyond comparison. What language can express our wonder at the telescopic eye of some birds, which is able to discover a dead carcass when flying a mile perpendicularly above it; and yet such appears to be the fact. The powers of adjustment in their eyes is also a most interesting subject, and is thus remarked on by Mr. Mudie, — "A bird must often strike its prey without any time for adjustment, and therefore the distance from the eye to the bill may be taken as the ordinary short focal length; but call it microscopic, and the magnifying power in line being inversely as the focal length, the lineal dimensions of an object, seen by the long-tailed-tit, will be to that of the same seen by the human eye, as 5 inches to $\frac{4}{10}$ of an inch, or as 12½ to 1. The surface will of course be as the square, or as 156¼ to 1; and the body, or solid of an object, as the cube, or 1953⅛ to 1. Thus an aphis, or any other small insect that can come wholly within the field of vision, will appear very nearly as large to the long-tailed-tit, as two thousand of the same would do to the human eye. The microscopic power of the eyes of those little birds which seek for minute prey on the bark of trees is, therefore, as wonderful as the telescopic range of the eyes of the eagles and other birds which soar aloft, and scan an horizon of miles; and not the least wonderful part of the whole matter, is the ease with which the changes from telescopic to microscopic vision are effected; it is instantaneous, and no less quick than critical. How often have we watched a parent robin feeding its young, alternately moving far and near in search of some animal matter, and in no instance returning without the object espied. The eye of the eagle, which can discern the motion of a small quadruped at the distance of more than a mile, can shorten its focus so as to be keen and perfect at the distance of a few inches; and the tit, to whose near vision the eggs of flies must appear as large as musket-balls do to us, feels no difficulty at seeing a bush at the distance of more than a hundred yards." For this extraordinary power of vision in birds, some structural specialties were required in their eyes; and our anatomical detail elsewhere has shown that it has been provided for in the osseous but flexible rim or hoop, which bounds the anterior part of the organ. This, by confining the action of the muscles to that part, elongates its axis, and, by so doing, fits it for viewing minute objects, though within a few inches or even lines of its beak. The marsupium on the contrary, it is probable, embraces the lens, and by drawing it backwards, so alters the focus of the organs as to enable it with equal precision to take cognisance of very remote objects also. To assist the comprehension of the doubter on this subject, we would only request him to consider how wondrously his own vision is increased by the magnifying powers of the telescope made by human hands. Can he not, therefore, suppose what may be done by nature's God for the benefit of these his humble children, but no less his children because small and humble. "Not a sparrow," &c. &c. In fact, to use the descriptive words of Mr. Griffith, — "This great extent of the visual power is accompanied with a precision equally great; for the organ being at once both extremely supple and extremely sensible, the eye grows round or flat, is covered or uncovered, contracts or dilates, and speedily and alternately assumes all the forms necessary to adapt itself to every degree of light or distance." Of the latter the following anecdote is an illustration: — "In the year 1778, Mr. Baber, and several other gentlemen, were on a hunting party in the island of Cossimbuzar in Bengal, about fifteen miles north of the city of Murshedabad. They killed a wild hog of uncommon size, and left it on the ground near the tent. An hour after, walking near the spot where it lay, the sky perfectly clear, a dark spot in the air at a great distance attracted their attention; it appeared to increase in size, and move directly towards them: as it advanced, it proved to be a vulture flying in a direct line to the dead hog. In an hour seventy others *came in all directions*, which induced Mr. Baber to remark, 'this cannot be smell.'" (*Home, Comp. Anat.* vol. iii. p. 216.)

2036. *The sense of hearing is also sufficiently acute in birds*, and the action of the sonorous waves on the nervous expansion within the ears does not apparently differ, in either cause or effect, from what we have already noticed in quadrupeds. The want of external ears in birds is compensated for by an arrangement of feathers, closely folded around the opening of the *meatus auditorius*, which is supposed to assist in catching the sonorous waves. Night birds are observed to have this structural peculiarity very much developed: thus the peculiar expansive circle of feathers, seen in the head of the owl, is supposed to be a kind of external ear, funnel, or trap, for sound. Mr. Mudie, however, regards it more in the light of an assistant to the vision than to the hearing of the owl; for, by producing a convergence of the rays of light, it may, he thinks, assist their crepuscular sight; but such a mass of soft feathers, he justly observes, must prove but very indifferent conductors of sounds. We much admire Dr. Farrar's investigations on the varied placings of the auditory tube of quadrupeds; but we are constrained to doubt whether owls purposely perch aloft, that the ascending sounds from their prey below may reach "the arched, overhanging, and concave external bony structure of the ears." We do not mean to deny the advantage of any structural peculiarity in the ear of the owl; if we had ever doubted it, the dissections of Mr. Macgillivray, and his correct engravings therefrom, must have convinced us: but we have watched these nocturnal prowlers so closely, that we are of opinion, while light remains, they depend on their visual more than their auditive organs for the discovery of their prey; but when light is departed, then the acuteness of hearing takes the place of vision, and the slightest rustle of the field-mouse among the leaves serves for its detection. Neither do they appear to us to watch much for prey when *perched*, but to actively search for it on the wing, and that principally during twilight and moonlight. From our own observations, we are nevertheless led to allow to nocturnal birds of prey a superiority of quickness in the discrimination of the nature of sounds, and an intensity of power in receiving every sonorous pulse, whether great or small, whether proximate or remote. The owl is a familiar instance of this; one which we tamed used to amuse and interest us and our friends greatly, particularly towards the evening, when he was more on the alert and on the look out for prey than at any other time. A small piece of brown paper crumpled up, and gently moved along the floor by means of a thread, instantly attracted his attention, and occasioned a pounce on the moving fragment. That in doing this his ears were the active agents we proved, by using tinted paper that closely assimilated with the colour of the carpet, the slightest rustle of which immediately arrested his attention; whereas a large moving mass passed unheeded. In the day he was sluggish and but little inclined to prey except the room was darkened, when he was all on the alert immediately. M. De Blainville endeavours to show that the ear of birds presents almost all the structural peculiarities of the human ear, except that the chain of small bones in man is represented by correspondent cartilaginous portions in birds; the incus only of the human ear finding in birds no corresponding type. Other continental comparative anatomists have also of late endeavoured to draw a close analogy between the structure of the ear of birds and that of our own. The absence of an external ear is supposed to be general among birds; but this, like other rules, admits of an exception, though probably a solitary one. Mr. Swainson in his late admirable work on birds has depicted the l' oricon of Vaillant, a large species of vulture, native to Southern Africa, which, as will be seen by *fig.* 314., has a long external ear, that is "not only bare of feathers, but the orifice appears to have a prominent rim, lengthened into a wattle, which hangs down on each side of the neck." He also observes on the ears of birds generally, that, excepting those of the owl, they "exhibit to outward appearance very little variation. M. Cuvier remarks, that nocturnal birds alone have a large external ear, which, nevertheless, is not so prominent as that of quadrupeds. This statement is so vague as to require some explanation. The ears of a sparrow, or a hawk, are just as external as those of an owl, seeing that in neither of these birds can they be discovered, unless the feathers are carefully removed; whereas, when we speak of an external ear, we annex the idea of its being prominent, like that of the majority of quadrupeds" (p. 47.), or like that of the l'oricon.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EAR OF L' ORICON

2037. *The hearing of birds*, Sir Charles Bell thinks to be very acute. "The slightest noise," he says, "alarms; and the nightingale, or other bird of song, in a summer evening will answer to the note of his rival when he is out of our hearing." We have next to observe the imperfection in the organ — the want of an external ear, which, were it present, would be at variance with all that we have most to admire in the shape of the bird and the direction of the feathers, as conducing to its rapid passage through the air. With this obvious defect of the external ear, can we admit that the internal ear is also imperfect, notwithstanding the very remarkable acuteness of hearing, which we know to result from this internal structure, and from it alone? Now we do, in fact, find a different structure in the ear of birds, but yet nothing is wanting. The columella will be seen to be a shaft of bone of exquisite delicacy, extending from the outer membrane of the ear to the labyrinth, or proper seat of the nerve of hearing; it occupies the place and office of the chain of four bones which belong to the ear of *Mammalia.* We have no authority, however, for affirming that the incus is here wanting more than any other bone of the chain; and if it be said that the os quadratum is the missing incus, why should not we find in the oviparous reptiles, where there is a columella in the ear, an os quadratum in the jaw. "From this mode of inquiry, we find that the sense of hearing is not imperfect, but is adapted to a new construction and a varied apparatus, suited to the condition of the bird; and that there is no accidental dislocation, or substitution of something less perfect than what we find in other classes of animals."

2038. *The sense of taste in birds* is supposed to exist in them in a very limited degree, but whoever will vary their food by the slightest admixture of any noxious matter, will soon be led to doubt the truth of this supposition. The cavity of the mouth, it is true, is more confined in most birds than in quadrupeds; and were it otherwise, it would not necessarily follow that this sense should be dull in them, inasmuch as their fauces are sufficiently extensive: and the critical taster of wines well knows, that when he directs the contents of a full glass to the back of his mouth, it is then only that he receives the full flavour of the liquor. Consequently, although the tongue itself may be horny and stiff anteriorly, its base and the connecting surfaces may be sensitive in the extreme. A more extended view of the physiology of these organs generally, may be gained by a reference to the subject of *Sense of Taste in Quadrupeds*, p. 188.

2039. *The tongue of birds* differs greatly in its composition, its figure, and dimensions, all of which vary as much as the nature of the food and the methods of procuring it. The parrot has a tongue which, though less soft, is yet papillacious, moistened with saliva, and in figure resembles our own. Can this form at all influence the readiness with which this bird learns to articulate words? We cannot deny but that it may have some influence; yet, admitting the possibility, we must recollect that many other birds are taught to pronounce words, if not with equal, yet with a degree of distinctness which bears no proportion to the dissimilarity between their tongue and our own, or between their tongue and that of the parrot. "In several other birds, on the contrary," as remarked by Blumenbach, "the tongue is horny, stiff, not supplied with nerves, and consequently unfit for an organ of taste. One striking example will supply the place of many. The tongue of the toucan (*Ramphastos*) is sometimes several inches in length, yet scarcely two lines broad at its root. It has the appearance throughout of a piece of whalebone, and its margins are fibrous." What part in the song of birds does the tongue and mandibles take? We do apprehend that the modulation of sound is principally effected in the throat. In the caged bird, the neck is extended, the mouth is actively employed, and the mandibles of the bill by their motions sufficiently show the part they take; but it is the throat that is seen principally engaged in song. Yet it is no less true than strange, that our closest dissections could detect little variation in the organs of voice between the sexes.

2040. *The tongue of the woodpecker* offers an admirable instance of the adaptation of the form of the parts to the particular purposes of the bird it belongs to; it is also somewhat remarkable that, although it is supposed to have a very long tongue, in reality it has a very short one. In fact, the woodpecker's tongue presents merely a short, sharp, horny, barbed point, but the hyoid, or tongue bone, supplies the deficiency in a very remarkable manner, which is thus described by Blumenbach: — "Behind the barbed point is a very singular *os hyoides*, but having very long *crura*, or branches. This so called bony part consists of five cartilaginous portions: viz. one single piece and two pairs. In the quiescent state of the organ, the former lies in a fleshy and very extensile sheath of the bill; the first pair of cartilages is articulated with this, and they are placed at the sides of the neck. The second pair, commencing from these, run completely over the cranium, under the integuments, and advancing from behind forwards, their converging extremities are placed together in a kind of groove, and commonly terminate anteriorly by an attachment to the right side of the upper jaw. This posterior pair of cartilages may therefore be compared to steel springs, which actuate the whole organ; and it offers an admirable example of the great share which mere elasticity possesses in the performance of some functions of the animal economy. When the tongue is to be darted out, the anterior pieces are drawn together. and enter the sheath of the single portion extended for their reception; the tongue is thus elongated, and admits of being thrust out some inches. This organ in the cock-of-the-wood is still more singular; for there, together with the larynx, it lies deep in the œsophagus, but admits of being quickly elevated and thrust forth by means of muscles acting on it."

2041. *The sense of smell in birds is sufficiently acute.* The external nares, or nostrils, of the several genera open in very different parts of the upper mandible or bill. In the puffin they are seen at the margins, but so small as to be overlooked without care. In the heron the nares are nothing more than narrow fissures without irritability or power of dilating. In birds, in general, the extent of surface of the mucous membrane, known as the pituitary expansion, is not increased by any large accessory cavities as in beasts, but is principally effected by several conchoidal projections, by which, however, the same end is answered — that of extending the surface of the sensitive expansion. The powers of smelling are unquestionably considerable in birds, but nevertheless, a careful comparison of the development of their olfactory organs with those of four-footed animals would convince us, *à priori*, that this sense is less active in birds than in quadrupeds; nor is it unlikely, as a compensating principle, that it is so in the same degree with the superiority which birds possess over brutes in their powers of sight. There are however some who maintain, that it is by scent and not by sight that birds of prey are led to carcasses with such unerring certainty, and in so short a time after death, as they are known to do. Dr. James Johnson is among these, and his reasons for so doing are before the public in *The Medical and Chirurgical Review*. Mr. Audubon, on the contrary, strongly advocates the superiority which the visual organs of birds exhibit over their olfactory powers, in a treatise which appears in the third number of *Jameson's Journal*, entitled *An Account of the Habits of the Turkey Buzzard.* The weight of authority and the convictions gained from direct experiments are, without doubt, greatly in favour of the conclusion, that it is by the superior power of vision that birds of prey are led to carcasses. Were it otherwise, it is argued, they would be seen skimming over the surface of the earth, where the effluvium, so hateful to others but so redolent to them, would more readily present itself. There is, however, yet room to doubt. We certainly do know, that the scenting powers of the *Grallæ*, or water birds, which have to grope for their food in water and mud, is great. In these, an enlarged branch of the fifth or olfactory pair of nerves is seen to be particularly developed, purposely to make their beak strongly sensitive to the presence of the edibles these birds seek: such is nature's foresight, and such are the charms that accrue from studying her works; and we may ask, Whose opportunities to do this are greater than the sportsman's?

2042. *The sense of touch in birds is more acute than very extensively diffused.* The bill is their principal organ of voluntary feeling, and in broad billed birds, as ducks, &c. the skin of the mandibles is thin, and very sensible, from the plentiful supply of nerves: neither is it the horny hardness of a part which should make us conclude it incapable of receiving sensitive impressions. Both the bill and tongue of the parrot are hard and horny; the former is so in the extreme, yet no one who has witnessed the delight with which a parrot exercises his bill in wantonly destroying articles of furniture, can doubt but that his sense of touch is gratified through the medium of his bill. Again, we knew a parrot which was very fond of an individual in a family, and his method of showing this fondness was by rubbing the nares of his beak against the eyes of the favourite, and equally so by attempting to insinuate his tongue within the eyelids themselves of this object of his attachment, which he did with a tenderness and dexterity truly surprising. The feet of birds, also, are more or less organs of touch, and particularly in such as make use of them to carry food to their mouths, as the whole of the parrot tribe are known to do.

Sect. IV. *The Thoracic and Abdominal Viscera of Birds.*

2043. *The thoracic and abdominal cavities of a granivorous bird displayed* (*fig.* 315.): — 1, the œsophagus; 2, the crop; 3, the gizzard; 4, the trachea, or windpipe; 5, the heart; 6, the three branches of the aorta; 7, the pericardium, or heart bag; 8, the left; 9, the right lobe of the liver; 10, a suspensory ligament, by means of which the air-cells belonging to the stomach are separated from those which belong to the right lobe of the liver; 11, 11, the intestines inclosed within a peculiar sac or envelope; 12, the orifice of the cloaca, or vent. Such being the disposition of the abdominal viscera of birds generally, it may be well to notice the principal variations which occur between the carnivorous and granivorous tribes. The crop in the latter (2) is so large as to admit sufficient grain for a meal; whereas in the former, the whole tube belonging to it is capable of great expansion. The gizzard (3) in the granivorous, or grain-eating birds, is a strong well defined mass, buried in the left side below the liver, where the grain, first softened in the crop, passes on, to be further acted on both by trituration and solution. The intestines of these birds are also seen to be longer than the same organs in the carnivorous and piscivorous birds, that the assimilation of nutriment might be more perfect. The liver in most birds is rather large, but in domesticated fowls it enlarges greatly, as seen (8, 9). The pancreas is usually of considerable size, and the spleen small. See further elucidations below.

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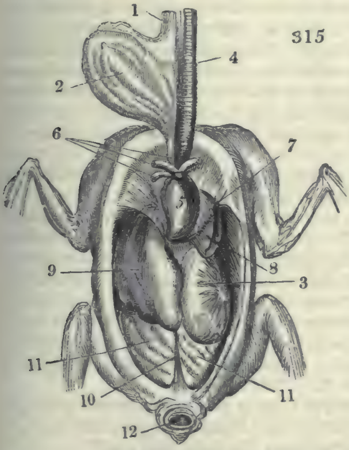

INTERNAL VIEW OF BIRD.

Subsect. 1. *The Collection and Digestion of Food in Birds.*

2044. *Birds collect food both with their feet and bill*, but by far the greater number use the latter for the purpose. The mouth is variously shaped in them, and of very unequal magnitudes, being in some, as the insectivorous, very small, while in others, as the toucan, it is monstrous. Some birds, like monkeys among mammiferous animals, have additional receptacles, or faucial cavities, besides the common cavity of the mouth. The male bustard furnishes an instance, whose throat-sac extends under the integuments of the neck, and opens by a wide aperture under the tongue (*fig.* 316.). The pelican presents likewise a very considerable dilatation of the fauces, which is capable of holding several quarts of water, by which this inhabitant of the wilderness, like the camel of the desert, carries with him his supply of fluid nourishment. In the *Carnivora* among birds, the capability of distension in the œsophagus is as remarkable as among dogs, wolves, foxes, &c. By this structural peculiarity they are enabled to take in vast masses of matter, which are in fact only partially swallowed. Many seafowl, and the heron, as a land bird, can retain a fish partly within the stomach and partly within the œsophagus; and as the digestion dissolves the stomachic portion, the remainder passes onwards to be digested in its turn. It is thus that the great works of waste and supply are kept in action throughout all animated nature.

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BUSTARD.

2045. *The œsophagus, or gullet of birds*, before it reaches the sternum or breast-bone, forms an expansion known as the crop, from which it is continued on to the true digesting stomach: thus the crop forms a sort of pocket, protruding itself out of the line of the œsophageal orifices (2, *fig.* 315.). In this pouch the food is softened by maceration: it is more particularly thus acted on in all the gallinaceous birds. It is situated in front of the sternal bones, by which it can admit of much distension without inconvenience, not being lodged within the bony case. It is to the presence of an accessory appendage to the œsophageal canal that the pouting horseman pigeon swells himself out so majestically. It is to be remembered, however, that a crop is not present in all birds. In water-fowl and a few land birds it is wanting. In hawks there is a crop, but in them it is rather a simple dilatation of the gullet than a distinct pouch. It is this which, in the language of falconry, is called the gorge.

2046. *The digesting stomach* is either a very powerful muscular mass with a hard cuticular lining, which adapts it to the grinding of grain, as in the *Gallinæ*, or it is thin and membranous, as in carnivorous birds. The united processes of trituration and digestion, as they occur in gallinaceous fowls, is worthy of some further notice. Grain received into the crop of birds, by reason of their want of teeth, must necessarily require some forcible operations to break it down. It is first slightly softened by a mucous secretion, which is in lieu of the insalivation of beasts. From hence it is soon passed into the gizzard (3, *fig.* 315.), where it is triturated by means of hard substances, as stones, &c. which have been instinctively swallowed for that purpose. These stones are set in motion by four muscular masses, one large hemispherical pair of which must be familiar to every one who has examined a gizzard. A small pair attached to the extremity of the gizzard makes up the muscular apparatus, and the whole pouch is lined within by a very dense cuticle. The experiments of Spallanzani, by means of bullets stuck around with needles, &c. which were invariably broken down, are probably present to the reader's recollection, by which he will understand how this animal *mill*, with its grindstones, can soften into a pultaceous mass the hardest grain, and having so done, how the absorbent system, yet to be noticed, can suck up the nutritive chyle for the support of the body.

2047. "*The liver of birds* is larger in size," says Dr. Fleming, "and more uniform in shape, than in quadrupeds. Its two lobes are nearly of equal size (8, 9, *fig.* 315.). The gall-bladder is absent in a few birds. The hepatic and cystic ducts unite in some species, and in others open separately into the intestine. The pancreas is situate between the folds of the duodenum, in the form of a long narrow conglomerated gland; its ducts are seldom united with the biliary ones. The spleen is small, and situate between the left lobe of the liver and the stomach, in the immediate neighbourhood of the gastric zone. The kidneys form a row of irregular lobes on each side of the lumbar vertebræ, and fill up cavities in the haunch bones. A ureter proceeds from each, and terminates in the cloaca. The urine has a white chalky appearance, and even in those species which subsist entirely on vegetable matter it abounds in uric acid." (*Phil. of Zool.* vol. ii. p. 226.)

2048. "*The intestinal canal* is much shorter in birds than in beasts; it is also generally shorter in carnivorous birds than in such as derive their food from the vegetable kingdom. In birds there is scarcely any perceptible difference between the large and small intestines. Most birds have two cæca; some, however, have only one; and a few of the predacious kinds want it altogether. The rectum ends in the cloaca, which is an expanded portion, containing the termination of the ureters, the genital organs, and the *bursa Fabricii*." (*London Encyclopædia*, art. ANATOMY, p. 253.)

SUBSECT. 2. *The Circulation and Aëration of the Blood in Birds.*

2049. "*The circulating system of birds*," says Home, "is chiefly distinguished from that of quadrupeds by the structure of the heart. The pulmonic ventricle, instead of having a membranous valve (such as is found in both ventricles of quadrupeds, and also in the systemic ventricle of birds), is provided with a strong, tense, and nearly triangular muscle, which Blumenbach considers as assisting in driving the blood with greater force into the lungs."

2050. *The aëration of the blood in birds* is conducted in the same manner as in quadrupeds, to which subject we would refer; it is however probable, that the blood of birds is more highly oxygenated than that of most other animals, from the extensive diffusion of air throughout the whole of their cellular structure, which, so far from being confined to the lungs, pervades even the bones and viscera, and thus becomes a means of furnishing them with a more abundant supply of strength and energy than is given to animals without this specialty of structure.

SUBSECT. 3. *The Respiratory Functions of Birds.*

2051. *Our cut* (*fig.* 317.) represents a bird of rather considerable dimensions cut open, and having its breast-bone removed, so as to exhibit the inner surfaces of the chest and belly, by which the pneumatic apparatus, which yields strength and buoyancy to the frame, is brought into view:—1, the trachea; 2, the lungs; 3, the air-cells, the openings seen near each figure are the tubular orifices by which the air from the lungs is brought into these sacs, and thence carried over the frame universally; 4, the heart; 5, the stomach; 6, the intestines. The whole body of a bird may therefore be said to be blown up, as it were, by air; the consideration of which serves to account for many remarkable circumstances we observe in the feathered races, not commonly met with in most other animals. Their specific gravity, were it not lessened by structural specialties, would bind them down to the earth, instead of elevating them almost to the skies. These specialties hinted at, principally consist in a pneumatic apparatus, which our cut shows to be advantageously situated in advance of the other viscera. The quantity of blood here circulating is very considerable, and it being essentially necessary that its quantity also by aëration should be equally great, so the properties of extreme buoyancy and vast powers of action are the results. The muscular apparatus

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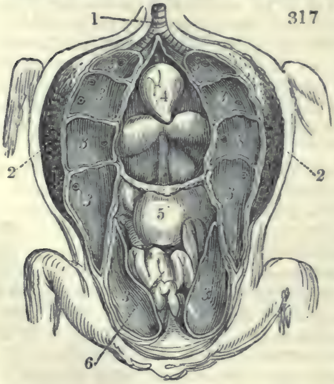

RESPIRATORY ORGANS.

of the heart enables it to propel the blood, both speedily and powerfully, from the right side of the heart into the lungs; which, although they are not very massive, yet the cavities connected with them in birds being most extensively spread over the body generally, a great propelling power is gained by muscular pressure. The lungs themselves in birds are two spongy masses, firmly adherent to the intercostal space in the posterior part of the chest, as seen at 2, 2, *fig.* 317. In addition to these, however, there are considerable sacs or cavities, to the number of eight or ten, according to the variety of the bird. By means of tubular orifices the air is from thence distributed over and among the different viscera of the body, throughout the bones also; in fact it permeates every part of the frame. We repeat that the parts we have just pointed out are not those alone which are rendered strong and buoyant by the agency of the atmospheric air, but also that similar air-cells may be traced universally spread over every part, and within the most minute interstices; each part is filled with air, the lightness of which gives buoyancy to the mass, as its purity affords it strength. With that admirable design so apparent in the works of nature, the quantity of air contained in the mass of the body in every bird is not the same; neither is every part equally furnished in different kinds of birds; but the quantity in each is found to be proportioned to the influence exerted on the locomotion of the body of the bird, and in each to its kind; and also that the separate portions are more or less permeable, according as its flight is confined or extensive. Thus in the *eagle*, and other birds of strong flight, the bones which support the wings are filled with air throughout; while in such as the *puffin*, &c. &c. where the wings are unequal to any lengthened flight, or in the *ostrich*, which prefers to run, air-cells are found in greater numbers within the bones of the leg and thigh.

SUBSECT. 4. *The Vocal Organs of Birds.*

2052. *We have heard some sportsmen* laugh at the enthusiasm that has been expressed at the midnight jugging of the nightingale, the midday warbling of the lark on high, or the far heard song of the thrush in the evening. These persons, we presume, esteem the feathered race little further than as they offer a mark for their gun, or a dish for their table. Occasionally, however, even these insensibles, in common with their spaniels and pointers, open their ears and evince their pleasure at the well known call of the partridge, or the crowing of the pheasant. Seriously, we owe more to the voice of birds than the mere delight of their song, exquisite as it is. How useful is the note of the *Cucullus Indicaior*, or honey-bird, to the African, in leading him to the honey store of the bees? Or how important is that of the Asiatic bird, which hovers and screams over the lair of the crouching tiger, to warn the traveller from his impending doom. The solid benefits we receive from the voice of birds might be multiplied beyond our limits of telling them; we would, therefore, next direct the attention to the great power of the vocal organs of the feathered race, which greatly exceed those of most other animals, comparing the bulk of the one with those of the other. The scream of the jay may be heard as far as the lowing of the ox; the evening song of the thrush, perched on high, may be distinguished a mile off; and we have ourselves heard a colony of rooks cawing out their vespers, ere they settled themselves for the night, more than two miles off.

2053. *The apparatus*, which is chiefly concerned in forming the voice of birds, is found in the inferior or bronchial larynx. Hence the division of the trachea below the upper rima glottidis scarcely produces any change in the voice of several birds, as they still utter sounds by means of the bronchial larynx. This larynx contains a second rima glottidis, formed by tense membranes, which may be compared in several cases, particularly among the aquatic birds, to the reed pipes of an organ. It is furnished externally with certain pairs of muscles, varying in number in the different orders and genera, and with a kind of thyroid gland also. The course and proportionate length of the trachea, and particularly the structure of the inferior larynx, vary very considerably in the different species, and even in the two sexes. (*Coulson's Blumenbach*, p. 198.)

2054. *The vocal organs of birds* will bear a close comparison with wind musical instruments. It has been observed, that the sound produced by some of the larger birds is exactly similar to the notes that proceed from a clarionet, or hautboy, in the hands of an untaught musician. The inferior glottis exactly corresponds to the reed, and produces the tone, or simple sound. The superior larynx gives it utterance, as the holes of the instrument; but the strength and body of the note depend upon the extent and capacity of the trachea, and the hardness and elasticity of its parts. The convolution and bony cells of the windpipe, therefore, may be compared with the turns of a French horn and the divisions of a bassoon; and they produce the proper effects of these parts in the voices of those birds in which they are found.

SUBSECT. 5. *The Absorbent or Nutrient System in Birds.*

2055. *The chyle in birds* is transparent, consequently their absorbing vessels are less easily demonstrated than those of quadrupeds; but they may be injected with care in the usual manner. The mesentery has no gland, although lymphatic glands are not wanting in other parts. It is probable that the rapidity that is required in the supply of nutriment in this class is the reason of this ready transmission; and it may be, for the same reason, that the thoracic duct is double. Lymphatics in birds have, however, been altogether denied; but careful investigation has satisfactorily detected them. What has been stated on the physiology of this system in quadrupeds equally applies here, consequently we shall avoid any further repetition of the subject.

Sect. V. *The Generative System in Birds.*

2056. ***The male organs*** concerned in this system are simple in their structure. The testes (1, 1, *fig.* 318.) are seen placed near the kidneys. During the winter season they are so small that in some birds they might be overlooked by a common observer; but no sooner does the vernal season approach, than in obedience to the call of nature, "to be fruitful and multiply," they enlarge greatly, the epididymis (2, 2) following the same example. A spermatic duct is sent off from each (3, 3), and opens into the cloaca (4). The remaining organs of this vicinity are the renal capsules (5, 5,), the aorta (6), the kidneys (7, 7), the ureters (8), the rectum (9). In birds the testes and kidneys are found near together; and it is worthy of note, that the ductus deferentes are the only ostensible male generative organs always present in the feathered races. In some, as the male among barn-door fowls, these canals present a dilatation which has been considered as a type of the vesiculæ seminales of other animals. A true penis is wanting in most birds, a few only having one of considerable size, of which the common drake is an instance. Indeed, the whole system of the generative male organs are simple, and more particularly so when compared with the female organs in the figure below. They however, as we have just observed, become more fully developed as the season of pairing advances. All the energies of the frame are now increased; the male is pugnacious in the extreme: the comb and wattles of the cock or barn-door fowls swell and are tinged with red blood; his jealousy becomes extreme, and his battles with a rival fierce and bloody. The female also submits to nature's grand purpose of perpetuating her creatures, and fulfilling nature's instincts to continue the race. We would ask, are there many sights more interesting than the watchful care of the barn-door hen over her tiny brood? How eagerly she searches for every grain, and how dexterously she breaks each into minute morsels for the minikins.

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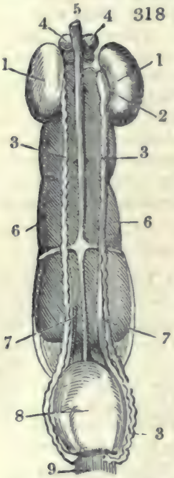

MALE GENERATIVE ORGANS.

2057. *The female generative organs.* The ovary (1, *fig.* 319.) is usually single, and the ova are inclosed in the yolk bags, which are seen in the figure supported on short foot stalks. A tolerably mature egg is seen at 2 in its capsule; the white line (3) indicates where the capsule opens to permit the escape of the egg. The oviduct is an important part in the female generative organs, and its various portions occupy the figures, 5, 6, 7, 8, 9, 10, 11. It pursues a tortuous course from its orifice (4) to its insertion into the cloaca, and enlarges as it proceeds backwards for the reception of the mature egg. Its anterior convolutions are internally lined by a secreting villous surface opened at 7, to show its folds. The papillæ, seen on this inner surface, are the orifices of glands, which secrete the glair or white of the egg. The part which immediately succeeds to this (8, 9, 10), is known as the uterus; 11 marks the vagina, which is here laid open to show the longitudinal folds on its inner surface; it finally inserts itself into the cloaca (12), an empty capsule from which the egg (9), now lodged in the oviduct, has escaped. The orifice of the oviduct is seen at 4; its convolutions at 6; an opening to show its membranous foldings within at 7; the dilated portion of the oviduct at 8, which has been cut open to show the matured egg (9). It is here that by the secreting powers of the glands of the duct the egg receives its shelly coat. The villous surface of the shell-secreting portion is seen at 10; 12, the cloaca; 13, its parietes, or walls; 14, the bursa Fabricii; 15 the dilatation of the rectum; 16, the intestine. These illustrations of the male and femal generative organs are principally derived from Mr. Gore's translation of the valuable worl

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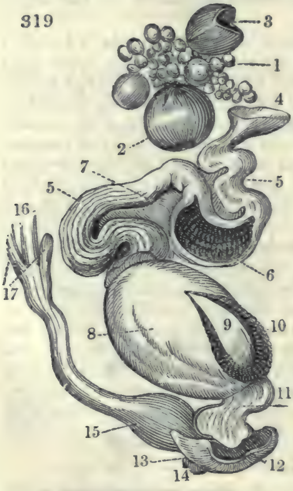


FEMALE GENERATIVE ORGANS.

of Dr. Carus on *Comparative Anatomy*, to which we would strongly recommend the inquirer into this or other subjects of comparative anatomy to apply.

2058. *The component parts of the eggs of birds* are, first, a friable cortex or *egg-shell*, under which a thin but firm membrane lines every part of the shell, and covers all the contents, excepting only a very small part at the obtuse end. The cavity thus formed contains a small portion of air, but which is observed to increase if the egg be kept long. The egg-shells of birds contain more lime and less gelatinous matter than those of reptiles. The investing membrane incloses the albumen or white, or rather whites, for there are two, one dense and viscous adjoining the yolk, and another thin and liquid which surrounds the more dense portion which incloses the yolk. The yolk itself has also its appropriate bag, from each end of which a whitish substance is seen to ramify within the albumen, and in all probability these ramifications are absorbents by which the changes that take place during incubation are effected. The small round white spot, vulgarly called the *tread* of the cock, but known by anatomists and naturalists as the *macula* or *cicatricula*, is not yet understood.

2059. *The reproductive process* is unquestionably the most important that takes place in the animal frame, and in none are its effects more apparent than in birds. As already observed, at stated periods, vast changes take place, which show the excitement that is approaching in both sexes, though more outwardly apparent in the male than the female. The plumage takes on its most vivid tints; the muscles swell and harden; the air of the male becomes martial in the extreme. The polygamous birds watch over their seraglio with a jealous eye, and woe to the intruder that appears within the accustomed beat. Every sportsman knows how pugnacious are pheasants, partridges, and quails, at these seasons. The monogamous birds, on the contrary, each being contented with his single mate, assists her in constructing a nest for depositing her eggs, supports her during her sitting, and crows, cocketts, or sings within her sight and hearing, to relieve the tedium.

2060. *Of the nidification and incubation of birds* much interesting matter has been laid before the public by numerous writers, one particularly may be referred to as at once interesting and instructive. We allude to the *Architecture of Birds*, in the *Library of Entertaining Knowledge*, which we recommend to the notice of the inquirer, contenting ourselves with remarking, that the same variation which marks the persons and manners of birds in the breeding season, extends itself also to their choice of localities for nidification; from the simply dropping their eggs on the naked sand, as is done by the ostrich and cassowary, and then leaving the hatching process to the warmth of the sun, to those more care-taking tribes that dig a kind of burrow in the earth for the purpose, or to those that, like the falcon, seek for a cleft in the massive sides of the rock, where, on a few sticks, the whole process of rearing a family, usually not a numerous one, is begun and finished. The gallinaceous birds, and other birds unaccustomed to perch, also make a simple nest on the ground. Many of the smaller birds, on the contrary, construct nests with much pains, and with great complexity of structure, each kind of bird, by some mysterious law, adhering almost invariably to one type.

2061. *The eggs of birds are as varied as their species*, and many who see these pages will remember with pleasure the marauding schemes of younger days, and the pendent festoons of egg-shells which resulted from these plunderings. Although, as we have observed, the colours and markings of eggs are various, their general characters are somewhat grouped: thus the eggs of the *Gallinacea* are mostly white; some, however, are slightly tinged with yellow, green, &c. White is also the predominant ground-colour in the eggs of the birds of prey, but most are spotted with some red; when the ground has a reddish tinge, the spots are usually brown. The eggs of some owls are wholly white, as those of the wood-owl and screech-owl. Birds which nestle in high trees, as ravens, crows, and pies, usually lay eggs with a greenish ground bespotted with brown. The white eggs of swimming birds are said to be most of them of a rounded form, while those of the waders are more generally elongated. The number of eggs laid is always in strict unison with the means of supplying the future progeny with food: thus birds of the larger kinds seldom lay more than two eggs; the smaller lay from four to six, and occasionally more.

2062. *The formation of the egg* is wholly dependent on the hen, for hen birds in solitude often lay eggs. In the summer of 1835 we saw one dropped by a falcon, which had been in a state of close confinement for some years. The *vitality* of the egg is derived from the female, for a sound egg laid without any communication with a male bird cannot be frozen by the same diminution of temperature that would act on a rotten egg. It requires however the presence of the male, and the personal co-operation of both sexes, while it is in the body, to *impregnate* it. It is also a curious physiological fact, that one sexual union only is sufficient to impregnate all the eggs that would be laid during the whole season; consequently, the germ of all the eggs must have been already formed. It is a striking proof of the wisdom of nature's designs in the appropriation of functions, harmonising with her intentions towards the convenience and preservation of her creatures, that, according as the young of any brood are more or less capable of collecting their own food after hatching, their original nest is seen to be more or less artificially constructed.

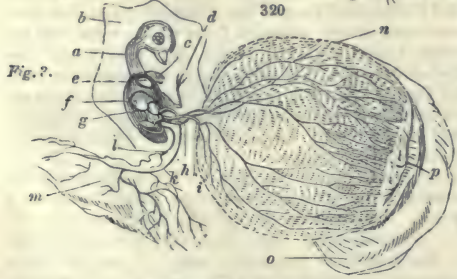
SUBSECT. 1. *Incubation of the Egg, and Evolution of the young Bird.*

2063. *The following appearances of the incubated egg of the common hen* are partly derived from our own observations, but mainly from those of Blumenbach. We have also borrowed from the plates accompanying Mr. Gore's *Translation of Carus*, three illustrative cuts (*fig.* 320.), which we hope will further elucidate the subject. The various vital processes of nutrition and formation which are carried on in the fœtus of the *Mammalia*, while in its mother's body, by means of the most intimate connection with the parent, are effected in the incubated chick by its own powers, quite independently of the mother, and without any extraneous assistance, except that of the atmospheric air and a certain degree of warmth.

2064. *When an impregnated egg* has received so much continued heat as to excite the germ to action, a small shining spot of an elongated form, with rounded extremities, but narrowest in the middle, is perceived at the end of the first day, not in nor upon the cicatricula, but very near that part on the yolk-bag. This may be said to appear beforehand, as the abode of the chick which is to follow. No trace of the latter can be discerned before the beginning of the second day. It now resembles a gelatinous filament with large extremities, very closely surrounded by the amnion, which at first can scarcely be distinguished from it. A minute examination has detected the areola pellucida with the following appearances after forty-four hours' incubation. The parts magnified to render them more distinct, are thus depicted in *fig.* 1. of our cut: — The cephalic extremity of the embryo (*a*, *fig.* 1.), the caudal extremity with the rhomboidal sinus of the spinal marrow (*b*), the open abdomen at the bottom of which the spine may be seen (*c*), the areola pellucida (*d*), the membrane of the yolk (*e*).

2065. *The first appearance of red blood* is discerned on the surface of the yolk-bag towards the end of the second day. A series of points is observed, which form grooves; and these closing, constitute vessels, the trunks of which become connected to the chick. The vascular surface itself is called *figura venosa*, or *area vasculosa*; and the vessel by which its margin is defined, *vena terminalis*. The trunk of all the veins joins the *venæ portæ*, while the arteries which ramify on the yolk-bag arise from the mesenteric artery of the chick.

2066. *On the commencement of the third day* the germ of a heart may be discerned by means of its pulsation. Other parts of the incubated chicken are destined to undergo successive alterations in their form, but the alteration is observable in the heart in particular. In its first formation the heart merely resembles a tortuous canal, consisting of three dilatations lying close together, and arranged in a triangle. One of these, which is properly the right, is then the common auricle; the other is the common ventricle, afterwards the left; and the third becomes the dilated part of the aorta. About the same time the spine, which was originally straight, becomes incurvated; and the distinction of the vertebræ is very plain. The eyes may be distinguished by their black pigment, and comparatively immense size; and they are afterwards remarkable, in consequence of a peculiar slit in the lower part of the iris. A descriptive delineation of our interesting subject, borrowed from Mr. Gore, presents the changes of the embryo to the perfect chick, and contains three separate figures, 1, 2, and 3. *Fig.* 1. represents the areola pellucida of a hen's egg, after being sat upon forty hours; *a*, the cephalic extremity of the embryo; *b*, the caudal or tail extremity, exhibiting the sinus, containing the spinal marrow; *c*, the abdomen, with the spine at its termination; *d*, the areola pellucida; *e*, the membrane which contains the yolk. After seventy-two hours' incubation, as seen in *fig.* 2. of the *combined cut*, the progress of the chick is thus exemplified: *a*, the embryo; *b*, the amnion; *c*, the heart; *d*, rudiment of the wing; *e*, the hind extremities; *f*, the abdomen, into which the membrane of the yolk (*g*), is reflected; *h*, the allantois, called by some, but Mr. Gore observes improperly, the chorion, is here seen projecting. About the fourth day the chick exhibits its most important viscera, as the stomach, intestines, liver, &c.; the gall-bladder is not visible until the sixth day; a vascular membrane (*chorion*, or *membrana umbilicalis*), begins to form about the navel, and increases in the following days with such rapidity, according to Blumenbach, that it covers nearly the whole inner surface of the shell within the membrana albuminis, during



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VIVIFICATION OF THE EGG.

the latter half of incubation. This seems to supply the place of the lungs, and to carry on the respiratory process instead of those organs. The lungs themselves begin, indeed, to be formed on the fifth day; but, as in the fœtus of the *Mammalia*, they must be quite incapable of performing their functions while the chick is contained in the amnion."

2067. "*Voluntary motion*," according to the same authority, "is first observed on the sixth day, when the chick is about seven lines in length. Ossification commences on the ninth day, when the ossific juice is first secreted, and hardened into bony points. These form the rudiments of the bony ring of the sclerotica, which resembles at that time a circular row of the most delicate pearls; at the same period the marks of the elegant yellow vessels on the yolk-bag begin to be visible. On the fourteenth day the feathers appear; and the animal is now able to open its mouth for air, if taken out of the egg. On the nineteenth day it is able to utter sounds; and, on the twenty-first, to break through its prison, and commence a second life. The chorion, that most simple, yet most perfect, temporary substitute for the lungs, if examined in the latter half of incubation in an egg very cautiously opened, presents, without any artificial injection, one of the most splendid spectacles that occurs in the whole organic creation. It exhibits a surface covered with numberless ramifications of venous and arterial vessels. The latter are of a bright scarlet colour, as they are carrying oxygenated blood to the chick: the veins, on the contrary, are of the deep or livid red, and bring the carbonated blood from the body of the animal. Their trunks are connected with the iliac vessels; and, on account of the thinness of their coats, they afford the best microscopical object for demonstrating the circulation in a warm blooded animal. Another curious membrane, the *membrana vitelli*, is also connected to the body of the chick, but by a twofold union, and in a very different manner from the former. It is joined to the small intestine by means of the *ductus vitello-intestinalis*, and also by the blood-vessels which have been already mentioned, with the mesenteric artery and vena portæ."

2068. *The representation* of the parts in a hen's egg at the end of the thirteenth day's incubation, is seen in *fig.* 3. of our combined *fig.* 310.: — The fœtus (*a*), the amnion laid open (*b*), the rudiment of the left wing (*c*), the rudiment of the left leg (*d*), the heart (*e*), the liver (*f*), the stomach (*g*); *h* portrays an intestinal loop without the abdomen, which is connected to the yolk-bag by a ligamentous union; the ductus vitello-intestinalis (*i*), the umbilical vein (*k*), the umbilical artery (*l*), the allantois or chorion of Blumenbach (*m*), the yolk-bag, on which the omphalo meseraic vessels ramify, and from the so-called figura venosa, which here occupies nearly the whole of the egg (*n*), the vena terminalis (*o*), the situation where the amnion is connected with the yolk-bag (*p*), the albumen (*q*).

2069. *During the course of incubation* the yolk becomes constantly thinner and paler by the admixtures of the inner white. At the same time, innumerable fringe-like vessels with flocculent extremities, of a most singular and unexampled structure, form on the inner surface of the yolk-bag, opposite to the yellow ramified marks above mentioned, and hang within the yolk. There can be no doubt that they perform the office of absorbing the yolk, and conveying it into the veins of the yolk-bag; where it is assimilated to the blood, and applied to the nutrition of the chick. Thus in the chicken, which has just quitted the egg, there is only the remainder of the yolk and its bag to be discovered in the abdomen. These are completely removed in the following weeks, so that the only remaining trace is a kind of cicatrix on the surface of the intestine. (See translation of *Blumenbach's Comparative Anatomy*, 2d ed. p. 374., and *Gore's Illustrations of Carus's Comparative Anatomy;* both of which works we would recommend to the reader's notice, if fortunately our cursory observations should incline him to enter more deeply into the interesting subjects of natural history and comparative anatomy.)

SECT. VI. *The muscular Structure of Birds, and the Actions produced thereby.*

2070. *The muscles of birds* are composed of fibres, red in colour, and dense in structure. Their tendons are equally well marked, and of such extreme firmness and tenacity, that they ossify by age, as may be particularly observed in the legs of all gallinaceous birds, and indeed in all those that use their lower limbs more than their wings, as the *Grallæ* or waders. A sportsman reading this will probably recall the unpleasant sawing, pulling, and grinding, which his knife, his fingers, and his masticators, have been all of them engaged in, when attempting the separation of the several parts of the hind-quarter of a partridge, or the leg of a pheasant of the most ancient order. Turkeys are not usually spared so long; but should such perchance fall in his way, he may console himself by separating these tendinous striæ, and reserving them for bird-calls; and we can assure him that he cannot find better. We have ourselves also used them at a pinch, instead of gimp, in jack-trolling with success. The cervical or neck muscles of birds are long, numerous, and distinct; by which the infinitely varied motions of their head are performed.

2071. *The pectoral muscles* are those large fleshy masses which are so familiar to us, on the sternum or breast-bone of a fowl, and from their size we may form some opinion of the power with which they must act on the wings, inserting themselves, as they do, in the most favourable manner, into each. This fleshy mass of pectoral muscle is divided into three parts, or three pectoral muscles,—by which we mean that there are three pairs to each side; for the motive muscles throughout the body, as well of birds as of quadrupeds, are mostly in pairs. The first pectoral muscle is by far the largest, and in fact it weighs more than all the other muscles of the body together, affording a proof of the power required to sustain flight in a bird. It takes its origin from the sternum, or breast-bone, from the furcula, or fork-bone, and from the ribs also; thus originating, and thus powerfully connected, it is inserted or fixed by its tendon in a rough projecting line of the humerus, or first wing-bone. By depressing this important bone, it becomes evident to the most partial observer, that it acts most powerfully on the flight of a bird, inasmuch as it enables the wing to apply its concave surface forcibly against the resisting atmosphere.

2072. *The intermediate pectoral muscle* lies directly under this, but takes its origin principally from the sternum. Its tendon passing over the articulations of the furcula, with the clavicle and scapula, enters a pulley, and also inserts itself into the humerus. This muscle is, however, an antagonist to the former by elevating the wing, which bespeaks a very curious contrivance, for though its office is to elevate the limb, it is itself placed below it, the reason for which apparent anomaly a little consideration will explain, for, from no other surface could it so conveniently originate, or secure so extensive an attachment as it is enabled to do, nor by any other contrivance could it act so efficiently. The lesser pectoral muscle originates from the clavicle and a part of the sternum, and is seen to pass from these origins to insert itself into the humerus, in such a manner as to depress the wing in conjunction with the first pectoral muscle.

2073. *Of the muscles of the trunk* we may first remark, that in these birds the diaphragm, or muscular partition which divides the cavities of the chest and belly of beasts, is wanting. Of the muscles of the abdomen and ribs there is little to remark; those of the caudal vertebræ are very distinct, and are divisible into levators, depressors, and laterals; which last are numerous and complex. The muscles of the lower extremities are very similar to those of the higher order of quadrupeds; we shall therefore not dwell further on them here, but refer what may be necessary to say of them to the actions which are operated by their agency.

2074. *The variable actions of birds* convince us that they have locomotive capabilities of a higher order even than belong to beasts. These motions also, when well considered, appear the effect of structural peculiarities common to them only. The subject cannot but be considered as a very interesting one, and we offer it to the notice of the sportsman as one, the practical observations of which may beguile many leisure moments when his sporting intents are frustrated. It is only of late that Natural History has unfolded her charms to the *many;* for, rendered apparently difficult of access by its systematic dress, and obscured by technicalities, it had attractions only for the *few.* This period is happily now passed, and the subject we advocate presents itself to us of the present day easy of attainment, and inexhaustible in the interest it excites. We indulge in a conviction, which has increased with our sporting practisings, that the full enjoyment of field sports, and the study of zoology, are in their natures inseparable; and we have little doubt but that, in a few years, every respectable sportsman will be also somewhat of a naturalist; and that many, by the very nature of their pursuits, will become first-rate ones.

Subsect. 1. *The Action of Flying.*

2075. *Flying is one of the most curious among all animal motions.* Leaping carries a body into the air, but the propulsive force having ceased, gravitation resumes its sway, and the animal descends. In flying, gravitation is completely overcome; the body not only remains suspended at pleasure, but traverses the air in every direction, and lessens or increases its rate of progression as it pleases. To understand properly the mechanical action of the wing of the bird, we should first attentively observe one in its contracted or closed state, when it will be seen externally convex, its feathers, particularly the larger, overlapping each other, so that the smallest possible resistance shall be offered to its extension, or, in other words, to the bird's rising in the air. Carry on the examination of the wing after it is expanded, and it will then be seen that the action of drawing down the wings produces very different consequences to those which result from elevating or extending them. If this were not the case, and the flapping of the wings were but the reciprocal actions of two surfaces in opposite directions, the bird which chance had raised to an elevation could neither mount higher nor descend lower, for it would neither gain nor lose by the motions of its wings. In drawing down the wing a concave surface is presented to the air, by which the surface of resistance is increased; and how very considerable this must be, our anatomical detail just given of the pectoral muscles will prove, where the ratio of depressing power is more than three to one in favour of it.

2076. *Is it possible to enable man to fly like a bird?* We do not gravely ask this question; but although we smile while we do it, there are yet persons with so *flighty* an imagination as to think it not impossible; but we believe no comparative anatomist has been thus misled. The immense power of the pectoral mass in birds can hardly be calculated; but we do know that, when it is compared with the same muscles in man and in quadrupeds, it is as twenty to one in their favour; and when we recollect that, in addition to this, birds are beyond comparison, in proportion to their bulk even, specifically lighter than ourselves, from the means they possess of admitting atmospheric air over the whole body; when we recollect this, we repeat, we must at once see the futility of all the attempts that have been made to attach wings to the human body which could raise it from the earth. Let us, however, more directly compare the body of man with that of birds. The human frame is made erect, with anterior extremities long and prehensile, and consequently naked. The lower extremities are by much the most massive, and altogether much more powerfully framed than the upper, for they were intended to bind him to earth, and to earth alone, as his proper domain. It is far otherwise with the bird, every part of whose frame offers direct evidence that flying was intended to be its distinguishing bodily faculty. The body of the bird, in the first place, is oval, which is the figure best adapted to overcome the resistance of the air; the spine also, which in man is flexible throughout, in the bird is anchylosed and wholly inflexible, purposely to offer a solid base for the support of the powerful muscles which operate on the wings. The sternum or breast-bone, so far from being flat, like our own, is much more extensive, and projects a keel-like ridge. The extensive surfaces of this bone are filled up with vast muscular masses, in proportion infinitely exceeding those of the most powerful village blacksmith ever seen. The clavicular bones, united at their apices, either angularly or somewhat circularly, are evidently intended to keep the shoulders apart, and to resist every effort at approximation. This subject offers us a new occasion to remark on the advantages of a comparative survey of the structure and functions of natural objects, by which fundamental errors correct themselves. Had the ingenious friar Bacon thus studied, he never would have taught that aërial flight in his own proper person was to be accomplished by man. In our examinations of the wing we cannot help observing that the articulation of the pinion is of a nature to give such a semi-rotatory motion to the great quill feathers, as forces them to *strike* the air with their flat surface, but to *rise* from it obliquely as the rower of the boat *feathers* his oar, from whence the term was probably taken. This action does not confine itself either to these feathers, but favours also an oblique backward depression of the whole wing, and not a vertical one; which motion, by virtue of the common resolution of forces, does two things at the same time — it supports the body in the air, and likewise carries it forward.

2077. *The tail of a bird*, furnished as it is with large feathers, we must also suppose to be an important portion of the apparatus of flight; but what part does it take in the action? Messrs. Willoughby, Ray, and many others, have considered its use to be directed to the steerage of the bird, as the rudder is to the vessel. Dr. Paley observes, " The steerage of a bird, in its flight, is effected partly by the wings, but in a principal degree by the tail;" which is also our view of the matter, though we are somewhat surprised at a previous observation he makes on the capability of the feathers of the wing to direct themselves, so as to increase the resistance to their descent, and to favour their ascent, to which he adds, " I believe that this faculty is not found in the great feathers of the tail." As far as our own opinion goes, the faculty of altering the disk of the tail-feathers is nearly equal with that which they possess over those of the wing-feathers. We would, in proof, recommend an attentive examination of the flight of pigeons, their frequent ascents and descents, and their numerous evolutions, all which being within close and every day's observation, render them particularly adapted for that purpose. Such observation will also show that the alterations in the disk of these broad tail feathers are too striking to deceive the eye. We think that after an examination of this kind, the *feathering the tail* generally, after the manner of the oar, will not be denied.

2078. *Borelli, the great master in animal mechanics*, also regards steerage as one of the minor uses of the tail, but considers it principally intended to assist the body in ascending and descending, and likewise in obviating the vacillations of the body and wings. In his opinion it is to the body and wings that the direction of the flight is attributable; that is, as a vessel is turned about on its centre of gravity to the right, by a brisk application of the oars to the left, so a bird, in beating the air with its right wing alone towards the tail, will turn its fore-part to the left. That the tail, however, acts as a rudder, we think requires but little other proof than this, that in all birds of long flight, which have but a meagre tail, the legs are usually very long, which they invariably carry extended behind them as a compensation in steering for their paucity of tail. Anatomy however, our sure guide, will show that the caudal vertebræ of such birds have great mobility; and so far from having their motions confined, they are furnished with levators, depressors, and a very complex assemblage of lateral muscles, expressly placed there to powerfully and variously move the tail.

2079. *The act of flying has been thus described:* — " The bird first bends his legs, and springs with a violent leap from the ground; then opens and expands the joints of his wings, so as to make a right line perpendicular to the sides of his body: thus the wings, with all the feathers therein, constitute one continued lamina. Being now raised a little above the horizon, and vibrating the wings with great force and velocity perpendicularly against the subject air, that fluid resists those successions, both from its natural inactivity and elasticity, by means of which the whole body of the bird is protruded. The resistance the air makes to the withdrawing of the wings, and consequently the progress of the bird, will be so much the greater, as the stroke of the fan of the wing is longer; but, as the force of the wing is continually diminished by this resistance, when the two forces continue to be in equilibrio, the bird will remain suspended in the same place; for the bird only ascends so long as the arch of air the wing describes makes a resistance greater than the excess of the specific gravity of the bird above the air. If the air, therefore, be so rare as to give way with the same velocity as it is struck withal, there will be no resistance, and consequently the bird can never mount. Birds never fly upwards in a perpendicular line, but always in a parabola. In a direct ascent, the natural and artificial tendency would oppose and destroy each other, so that the progress would be very slow. In a direct descent they would aid one another, so that the fall would be too precipitate." (*London Encyclopæd.* art. Flying.) The mechanical operations of flying are further enlarged on in our *Hawking* department.

2080. *The flight of birds differs greatly with the species.* "Some fly by jerks," says Col. Montague, "closing their wings every three or four strokes, which gives them an undulating motion, very conspicuous in the woodpeckers and wagtails, and in most small birds; others fly smooth and even; and some appear to buoy themselves in the air without perceptible motion of the wings, such as the kite and kestril-hawk. Most birds fly with their legs contracted and neck extended; but there are some whose length and weight of neck makes it necessary to contract it in flight, in order to bring the centre of gravity on the wings; to aid which the legs are also extended behind, as in the heron and bittern: others fly with extended neck, but are obliged to throw out their legs behind, as in the duck, goose, and other waterfowl." (*Ornithological Dict.* Rennie's edit. p. 182.)

2081. *The rapidity of the flight of birds is surprisingly great,* and when they are under very violent excitement, as either to escape danger, or in pursuit of prey, it can be compared to nothing but itself: we may instance the rate at which a hawk flies in pursuit of its quarry, which every one knows is rapid in the extreme. It is recorded that a falcon, belonging to a Duke of Cleve, flew out of Westphalia into Prussia in one day: and we read of another, said to have belonged to Henry the Fourth, King of France, which escaped from Fontainbleau, and in twenty-four hours after was found in Malta, a space computed to be not less than thirteen hundred and fifty miles, a velocity equal to fifty-seven miles an hour, supposing the hawk to have been on wing the whole time. But as such birds never fly by night, and allowing the day to be at the longest, or to be eighteen hours' light, this would make seventy-five miles an hour. It is probable, however, that he neither had so many hours of light in the twenty-four to perform the journey, nor that he was retaken the moment of his arrival, so that we may fairly conclude much less time was occupied in performing that distant flight." (*Ibid.*) M. Audubon, the distinguished ornithologist, has shot the passenger-pigeon of America, and on dissection found its stomach full of fresh rice, which, to have resisted the digestive process, must have been swallowed *not many hours* preceding its death; but the rice could not have been obtained within eight hundred miles of the place where it was killed. Though the nightingale, the willow-wren, and other birds of passage, fly with only half the swiftness, they may easily arrive in most parts of the south of Europe, or the north of Africa, in a few days.

Subsect. 2. *The Actions of Walking, Climbing, Perching, and Swimming, in Birds.*

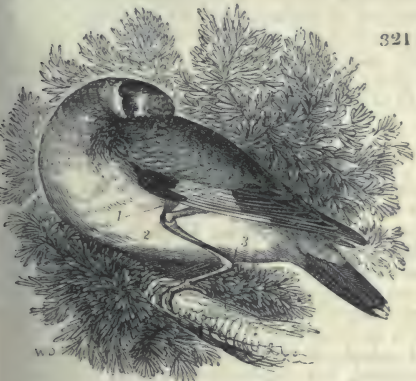
2082. *The walk of birds is not generally long continued,* except in some particular species as in the ostrich and cassowary, whose wings are rudimental only, the deficiency being amply made up in the superior strength, length, and muscularity of their legs, by which they are not only able to walk firmly, but to run with astonishing speed. All gallinaceou birds also, in consonance with their habits of seeking food widely spread over the ground are adepts in walking, and most of them in running likewise. Some birds walk by alter nately advancing each foot; others again hop only, which is thus effected — both feet bein firmly fixed on the ground, the body is propelled forwards by the sudden extension of a the joints of the legs. Birds with sharp claws almost always hop; for, by bending th claws inwards to protect parts so vitally important to them, they would necessarily *ste* less firmly than other birds; but, by displacing both feet at a time, locomotion is effecte without injury to these prehensile organs.

2083. "*Station in birds,*" says Carus, "gives rise to many interesting considerations. Th centre of gravity corresponds to the region where the anterior extremities are attache partly because of the size of the sternum and pectoral muscles, partly because of th weight of the viscera in that situation (liver, stomach, heart), and lastly, because of the ex tension and flection of the neck, as well as the occasional concealment of the head beneath the wing. In addition, the anterior extremities have no share in supporting the trunk in walking, whilst the trunk itself is placed nearly horizontal. As a necessary consequence of these circumstances, station on the posterior extremities requires that the legs should be directed forwards, at the same time that the tarsus and toes are elongated. The consequence is, either that the feet, of which the surface is extended by the length of the toes, reach under the thorax, or else, that when the legs are shorter, or placed more posteriorly, the trunk approaches more nearly to a vertical position. This is the case, for instance, in the penguins and puffin, and the only one in which the mode of station on two feet resembles the human." (*Gore's Translation*, vol. i. p. 360.)

2084. *Climbing* also is much practised by some tribes of birds, particularly by such as are at once frugivorous and of heavy flight. This faculty is aided by a peculiar arrangement of the toes, as seen in the woodpecker, which has two directed forwards, and two backwards. The parrot is also an excellent climber, for he has not only a foot structurally adapted for the purpose, but he makes use of his hooked beak to assist him. In others also the bill is the principal prehensile organ, while a powerful attaching point or prop is gained by the tail of many climbers.

2085. "*Swimming* is much facilitated in birds by the quantity of air contained within the body, by the shape of the chest resembling the keel of a ship, and by the position of the feet at the posterior part of the body like oars, the toes also being frequently connected by membranes. The oar-like effect of these web-feet is farther assisted by the toes with their membranes lying close together when carried forwards, whilst, on the contrary, they are expanded in striking backwards. This operation is still farther favoured in some aquatic birds by the vertical position of the tarsus and toes in a line with the tibia; an arrangement, however, that is unfavourable to walking. Some birds, the swan for instance, expand their wings to the wind whilst swimming, and sail in that way, somewhat like the *Holothuria* and some *Molusca*. Diving is probably effected, partly by compression of the air-cells, and partly by the impulsion of the feet against the surface." (*Loc. cit.* p. 362.)

2086. *The repose of birds* is provided for by some admirable mechanical contrivances unaided by muscular contraction. "One of the flexor tendons of the toes of birds accompanies a muscle which, descending from the pubis (1, *fig.* 321.) is seen to pass over the front of the knee at 2. From hence the united tendons proceed to the back of the heel (3); consequently a flexion of the knee and heel produces mechanically a bent state of the toes, which may be seen in the dead bird; and it is by means of this structure that the bird perches with safety, and is firmly supported when roosting, without any muscular action. This circumstance of the flexion of the toes accompanying that of the other joints of the lower extremity of birds, was long ago observed by Borelli, and attributed by him to the connection which the flexors of the toes have with the upper parts of the limb, by which they are mechanically stretched when the knee is bent. This explanation has been controverted by Vicq. d'Azyr and others, who have referred the effect to the irritability of the muscles. The opinion of Borelli appears, notwithstanding, to be well founded; for not only the tendon of the accessory flexor passing round the knee, but the course of the flexor tendons over the heel, and along the metatarsus, must necessarily cause the contraction of the toes when either of these joints is bent. And further, if the phenomenon were not produced on mechanical principles, it would be impossible for birds to exhibit it during sleep, which they do; or to prove the effect on the limb of a dead bird, than which nothing is more common. The utility of this contrivance is great in all birds, but particularly so in the rapacious tribe, which by this means grasp their prey in the very act of pouncing on it; and it is still more necessary to those birds which perch or roost during their sleep, as they could not otherwise preserve their position, when all their voluntary powers are suspended."



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ANATOMY OF PERCHING.

2087. *In those birds which repose standing on one foot*, as pelicans, storks, cranes, and other long legged waders, another contrivance presents itself, by which they are enabled to preserve the leg in a state of extension with little or no muscular effort. "There arises (observes the same authority) from the forepart of the head of the metatarsal bone a round eminence, which passes up between the projections of the pulley on the anterior part of the end of the tibia. This eminence affords a sufficient degree of resistance to the flexion of the leg, to counteract the effect of the oscillations of the body, and would prove an insurmountable obstruction to the motion of the joint, if there were not a socket within the upper part of the pulley of the tibia to receive it when the leg is in the bent position. The lower edge of the socket is prominent and sharp, and presents a sort of barrier to the admission of the eminence, that requires a voluntary muscular exertion of the bird to overcome, which being accomplished, it slips in with some force, like the end of a dislocated bone." (*Rees's Cyclopædia*, art. Birds.)

CHAP. III.

THE POPULAR HISTORY OF BIRDS.

2088. "*If elegance of form*," says Mr. Swainson, "beauty of colouring, or sweetness of voice, were peculiarities which constituted the superiority of one class of beings over another, we should unquestionably assign to birds the highest station in the scale of the animal creation. No shadow of fear mixes with the pleasurable sensations with which they are viewed; and these feelings, moreover, are heightened by the ethereal nature of the creatures themselves. In a moment they may spread their wings, launch into boundless air, and be seen no more. We almost view them as beings of a happier world, alighting upon this 'dim spot called earth,' more as a place of temporary rest in their voyages through the regions of space, than as their permanent abode. They remind us of those invisible spirits of the unseen world, which, we are taught to believe, traverse the air on the wings of the wind; who alight, but for a moment, among the sons of men, and then depart to breath a purer atmosphere. Of all unintelligent beings, they alone are gifted with a musical voice, possessing both sweetness and varied expression. Their language, in some measure, is thus intelligible even to man, inspiring him with cheerfulness or melancholy. Hence it is that from among birds the poets have selected their sweetest themes. They are, both poetically and literally, the butterflies of vertebrated animals; flitting from one plant to another, living less on earth than in the air, and having their wings ornamented with feathers of bright or varied colours. In both we dimly see an indication of that existence which will separate the spirit of man from those cares, anxieties, and allurements, which chain him down to earth, as if it was his final and only stage of action. It is highly probable that the sweet Psalmist of Israel had some such thought, when he longed for the wings of the dove, that he might flee from earth and be at rest." (*Cabinet Cyclopædia* of Dr. Lardner, vol. lxxxiii. p. 2.)

Sect. I. *The external Coverings of the Body of Birds.*

2089. *The symmetrical proportions of birds*, and their brilliancy of clothing, have long been themes of admiration. Their forms are even more diversified than those of quadrupeds, although their sizes are not altogether so disproportioned. Here, as throughout the whole animal kingdom, we invariably find the form of the body as a whole, and the character of each separate part, to be framed with an especial view towards the particular habits and mode of life of the bird. Is the subject of observation one of those which are denied the faculty of flight, as the struthio or ostrich, how muscular, long, and large, are its legs! how small, weak, and disproportionate, its wings! If it be one of the *Grallæ* or waders we look at, we see legs equally long and naked, but very inferior in point of strength, as neither speed nor endurance are here required, but simple elevation only. Contrast the figures of both these subjects with the swallow, where almost the whole of the leg might be supposed to be transferred to the wing, and where the diminutive foot serves little other purpose than its prehensility. Adaptation is the great and beneficent feature stamped equally on every member of the feathered race, from the mighty eagle to the pigmy tit.

2090. *Birds derive their principal external characters from their feathers*, to which naturalists have given technical names, according to the part of the body on which they grow. These have been already illustrated, both by figure and description.

2091. *The external characters of carnivorous birds are very strongly marked*, but they are at the same time less varied than those of other tribes. Almost the whole members of this class are furnished with wings of great extent, operated on by muscles of singular density of fibre, which enable them to keep long on the wing in search of prey; and having found it, these advantages render their pursuit generally successful, by the superior rapidity of their flight. The beak, by which death and dismemberment are effected, is singularly strong and hooked; the head altogether is large; the neck short, but very strong; and the breast broad, to give room for massive pectoral muscles: the thighs and legs are equally powerful, and their strong clutching feet are terminated with sharp formidable claws.

2092. *The external characters of the granivorous birds are*, throughout, the reverse of those of the *Carnivora*. With few exceptions they are as mild and timid in disposition as the others are ferocious; and thus many of them congregate for protection. Destined to seek most of their food from the ground, the gallinaceous tribes are great walkers, and hence their thighs are muscular, their feet strong, and their bill well formed to pick up the scattered grain. Their flight is usually short, although their actual power enables them to move rapidly on the wing. This temporary rapidity of flight, undoubtedly, is given less for the purposes of travelling in search of food, than as a means of defence against predacious birds and beasts, both of which are singularly fond of their flesh.

2093. *Insectivorous birds* are very varied in their external characters, from the swallow to the woodpecker. The first of these birds is gifted with great powers of flight, by which he receives his food on the wing; while the other being much restricted in this respect, has a vision exquisitely keen, a tongue pointed with horn, and very extensile also, to enable it to transfix and extract the insects hidden in the bark of trees. The *Caprimulgus*, vulgarly called the goat-sucker, exhibits a head almost divided in twain by the expanse of its mandibles. This cavernous mouth, so disproportionate to his other parts, is necessary to his existence, the principal food being derived from the larger *Scarabœi*, which he takes open mouthed, and swallows while on the wing.

2094. *Frugivorous birds* are also diversified, both in the methods and organs immediately concerned in the collection of food. Some sit, and deliberately picking it from the tree on which it grows, eat it there; others first throw it to the ground for the purpose. The parrot tribe, again, are enabled to make use of the foot to gather fruit to carry it to the mouth, and deliberately to hold it until it is consumed.

2095. *The feet of birds present considerable diversities of figure and size*, but in every instance the size of these organs so correspond with their diversified habits, that no external character is less likely to deceive the observer. In the falcon we see a foot equally well framed for seizing and detaining prey, as for walking and perching, the claws being hooked, strong, and retractile. The woodpecker has a foot formed for climbing, two of the toes being placed forward, and two backwards. It is the same in the wry-neck cuckoo, &c. A limb adapted for walking firmly is seen in the crow and rook. The foot of the kingfisher has the three forward toes partially connected, the first and second being unconnected from the claws to the first joint only. The inner and hinder toe are placed on the inside of the foot, by which the heel is widened, and, as it were, pressed out. This formation is evidently favourable to the wants and habits of this bird, which, from some projecting branch, patiently watches the motions of the small fish in the stream below. The feet of the *Gallinacea*, as the common fowl and pheasant, like those of the crow, are well adapted for walking, in which so much of their time must necessarily be spent. Most of these have also a powerful spur appended to each leg, which becomes a very formidable weapon, and is further supposed to have some sympathies with the generative organs. The heron presents a foot and leg evidently formed for wading, being long, thin, and naked above the knee; it is also semi-palmated, the middle webbing reaching only to half the length of the toes. A great peculiarity in this foot, as well as in that of the nightjar, is the serrated or jagged state of the inner side of the middle claw, the uses of which in birds authors differ about, although we think that its use in the heron is clearly intended to render it more capable of holding the fish it captures, when too large to be instantly swallowed. A palmated foot, with three toes webbed to the extremity, is seen in the swan, duck, &c.; in viewing of which we can hardly fail to be struck with the unity of form and purpose observed in its long slender figure unfeathered also above the knee. A palmated foot, having the whole of the toes webbed, is seen in the cormorant and pelican; a pinnated foot, with the edges of the toes scalloped, in the coot, phalarope, &c. A lobated foot, where the toes are margined with a membranous edging, is seen in the swimming birds.

SUBSECT. 1. *Colour of the Plumage of Birds, and its variable Character.*

2096. *Colour has been used in the characterising and classifying of birds*, but its numerous variations, not only before the bird reaches the adult period, but in many at each succeeding moult, also are productive of error and confusion.

2097. *The young bird of every kind seldom has a plumage distinguished by beauty or variety.* In the majority a yellow tint predominates, but it is neither gaudy to attract, nor is it much varied to secure safety; nor until its first moult does it acquire its mature colours. The male among birds is commonly more brilliantly coloured than the female; and that is especially designed to attract attention, and to evince his sexual superiority is evident from the change which takes place at his season of love. All the male characteristics, as caruncles, fleshy papillæ, head crests, bearded throats, aigrettes, shine with more than usual lustre at this time. In the classification of birds, the infinite diversity of colours is one of the greatest obstacles which the zoologist encounters, and is the means of occasioning endless error and confusion. In the sport of hawking this has been particularly felt, for there it is not only the plumage of the young eyass, or brancher, which differs from the adult, but also that for several successive years each moult produces a change of colour, so that the ornithological descriptions of the different varieties given by even the best authors, are at variance with each other. Nor are the characters left us in the best hawking treatises likely to clear up the difficulties of the subject. (See *Treatises on Hawking*, p. 648.)

2098. *Season has great influence over the colour of many birds.* Dr. Fleming on this subject observes, " Among the feathered tribes such instances of change of colour in the plumage during winter are numerous. They greatly perplex the ornithologist, and have been the means of introducing into the system several spurious species. The white grouse or ptarmigan (*Tetrao Lagopus*) may be produced as a familiar example of this kind of hybernation. This bird, like the Alpine hare, inhabits the higher Grampians, and is never found at a great distance from the limits of the snow. In summer its plumage is of an ash colour, mottled with small dusky spots and bars. At the approach of winter the dark colours disappear, and its feathers are then found to be pure white. In remarkably mild winters the change is incomplete, a few dusky spots of the summer dress remaining. In spring its winter garb becomes again mottled, and the bird loses much of its beauty. Even the young birds in their autumnal dress resemble their parents in the mottled plumage, which likewise becomes white at the approach of winter. Among the aquatic birds, similar changes in the colour of the feathers have been observed. The black guillemot, so common on our coasts, is of a sooty black colour during the summer, with a white patch on the wings. During winter, however, the black colour disappears, and its plumage is then clouded with ash-coloured spots on a white ground." (*Philosophy of Zoology*, vol. i. p. 17.) The extent of the change as already hinted at is evidently the effect of temperature; for in mild winters it is observed to be less complete than in severe ones. In Greenland, therefore, the black guillemot becomes of a snowy whiteness in winter. It is in hot countries that the most brilliant colours are seen in the plumage of the feathered races: the general excitement which heat produces occasions this effect, as the abstraction of heat in cold countries saddens or blanches the coatings of the birds of those localities.

Sect. II. *Geographical Distribution of Birds, and the Effects of Climate and Temperature upon them.*

2099. *The geographical distribution of birds*, like that of quadrupeds, is under the control of physical agencies. Certain birds, like certain beasts, are, by form and nature, peculiarly adapted to particular localities. The ostrich ranges at large on the desert plains of Africa, and the "pelican of the wilderness" roams wide over its waters in the full enjoyment of health and happiness. Remove them to the Zoological Gardens, and all that the care of their keepers and the admiration of surrounding multitudes can do for them, is to eke out a miserable existence to the shortest span. Others, as the migrating tribes, are not physically confined to particular climates. On the contrary, their rovings are occasioned by want of food, and genial temperature. The swallow is not naturally a changeling, but would probably be constant and fixed to a certain locality, were it not forced out by hunger; for a humid clime and a decreased temperature have driven the insects on which he preyed into hybernation or death. In proof of this it is notorious that the same eaves, or the same pent-house, was used by his forefathers, by himself, and by his descendants, for the purposes of nidification. The banks of the Nile offer charms to the condor, and other tribes which prey on dead bodies, not because of the beauties of the scenery, nor from any local attachments, probably, but because its vast shores are the scenes of many deaths, and its vast waters the recipient of many carcasses. The hardy waterfowls of the North were once residents with us, until increasing population had scared them away by fear, and the drainage of the lakes had deprived them of a permanent home. Subject to the effects of temperature in influencing the locality of birds, we find that many feathered inhabitants of the polar regions, during the temperate seasons, locate themselves with us during our less rigorous winters. It is then the hardy wildfowl gunners launch the punt, or sit crouched for hours within a mimic grave, to watch the morning and evening flights of the vast family of the *Anseres*.

2100. *The variations of temperature* are grand agents in the local distribution of birds. M. Gloger has published an interesting paper on the height at which birds of different species are found, which is as follows:—" *Aquila fulva* in low situations; *Corvus Cornix*, below 4,300 feet; *Nucifraga Brachyrhynchus*, in low situations; *Sylvia Tithys*, in higher localities; *S. Phœnicurus*, to 3,900; *S. Trochilus*, 4,400; *S. Attricapilla*, 3,700; *S. Rubecula*, 4,000; *Motacilla alba*, and *M. sulfurea*, 4,300; *Cinclus aquaticus*, 3,200; *Accentor modularis*, 4,600; *Accentor Alpinus*, on the most elevated summits; *Alauda arvensis*, 4,400; *A. alborea*, 200; *Fringilla cœlebs*, 4,000; *Loxia curvirostris*, 4,500; *Motacilla Troglodytes*, *Parusatur*, *P. cristatus*, *Sylvia Regulus*, *Certhia familiaris*, and *Sitta Europæa*, at 3,800; *Hirundo Urbica*, and *Cypselus Aspus*, on the highest summits." In the colder regions the numbers of birds are more restricted than within the tropics, where they multiply much faster; for there food is to be met with in greater plenty. It is not only in number, but in kind also, that this increase is observed; and thus insectivorous birds unknown in the north, teem in the south. It is in arid climes only that the ostrich, the cassowary, and other large birds, have the opportunity of developing their magnificent frames; and here also the gallinaceous tribes are seen in abundance. It is owing to the effects of a higher temperature, likewise, that male birds are here more numerous than females, and that the ardour of the constitution thus generated shows itself in these phenomena. "The birds of cold countries are in general polygamous, in consequence of the fewness of the males in proportion to females in each species. The birds of warm countries having many males and few females are, on the other hand, monogamous." Climate not only increases the number and size of birds, and excites a predominancy of one sex over the other, but it shows itself in the lively and brilliant colours which are seen among those of tropical regions. Mr. Griffith observes, "We find that the aquatic races, the *Palmipedes*, the *Scolopaces*, the *Grallæ*, whose plumage is generally greyish dull, tarnished or livid, and which have more females than males, abound principally in the climates approximating to the poles; whereas the climbers, the *Insectivora*, the parrots, the woodpeckers, the colibris, the birds of paradise, the toucans, &c. whose plumage is of the most brilliant dye and richest variety of tints, have also in their species more males than females, and inhabit the warm climates almost exclusively." (*Cuv. An. King.* by Griffith, vol. vi. p. 128.)

2101. *The colours of tropical birds are perennial*, for in such climates the temperature never varies so much as to render any change in the colour of the covering necessary; but in the frigid zone it is essentially necessary, and is a kind provision of nature, seeing that the rate at which the bodies of birds cool here is much influenced by the colour of their skin and feathers. We are aware that the surface which reflects heat most readily suffers it to escape but slowly by radiation; the nearer approach, therefore, that the feathers make to a pure white, in that proportion will the heat of the animal body be retained. This subject having been entered on more fully under the geographical distribution of quadrupeds, we shall not dilate further on it here.

Subsect. 1. *The Food of Birds and its Effects on them.*

2102. *The nature and properties of food*, and the manner of its assimilation for the support of birds, do not materially differ from the same in quadrupeds. The digestive organs of both are essentially the same, and exhibit similar phenomena. To that subject, therefore, we refer for general information on those points. It may, however, be well to remark, that birds can bear to be confined exclusively to one edible for a longer period with greater impunity than quadrupeds; they however thrive best on variety. It is thus that rape and canary seeds are mixed for many of our caged warblers; for it is found that when they are too long confined to either of these, or to any other seed exclusively, epilepsy is apt to ensue, or otherwise that the alimentary canal throughout its whole extent becomes affected; in which case the anus protrudes, is tender and inflamed, and the tongue becomes corneous at its apex, which disease bird-fanciers call the pip. This would happen more frequently than it does to such as are allowed even two varieties of grain, were it not that most of them have succulent herbs and fruits given to them. Bullfinches, when wholly fed on hempseed, are apt to become black in plumage and emaciated in body. Ulcerations, also, sometimes destroy the corneous coat of the eye, or contractions of the feet occur. Nature's rules, which prescribe variety, cannot therefore, even in them, be infringed on with entire impunity.

2103. *The form and external characters of animals*, as they descend in the scale of complexity of structure, are certainly less under the control of physical agencies; which fact, however, is in direct opposition to what might be expected *à priori*. Thus we have somewhat less power over the form and external characters of birds, than we have over those of quadrupeds. A sufficient susceptibility of departure from the original type by the agencies of food, &c. however remains to establish our principle. The plumage of most of our song birds, beside the bullfinch, may be darkened by feeding them much on heating food of any kind, but particularly on any of the spicy seeds. Stimulants will also promote an early development of the sexual organs, and thus domestic fowls may be forced to laying and sitting at unseasonable times to gratify the taste for early chickens. To produce a premature disposition in hens to the breeding of young, the rearers of poultry stimulate the fundament with nettles. The size of fowls, also, may be much increased by an extravagant quantity of food and forced rest. It is to the end that exercise may not interfere with the process of fattening turkeys and other gallinaceous birds, that they are closely confined in the dark, and fed with mixtures of the most stimulating kind, by which they acquire great size; and their bodies not being condensed by exercise, the muscular parts are rendered tender, and the interstitial matters suffering no loss, their flesh proves also as juicy as tender.

2104. *The process of enlarging the liver of geese for the table of epicures*, as it is practised in France, is described at length by Sonnini (*Nouveau Dictionnaire d'Histoire Naturelle*, art. Oie). The object is to cause the whole vital forces to be determined towards this part of the animal, by giving it a kind of hepatic cachexy. In Alsace an individual buys a lean goose, which he shuts up in a small box so tight that it cannot turn in it; the back part of the bottom is furnished with a wide grating of rods, for the passage of the dung. In the fore part there is a hole for the head, and below it a small trough is kept always full of water, in which some pieces of wood charcoal are left to steep. A bushel of maize is enough to feed it during a month, at the end of which time the goose is sufficiently fattened. A thirtieth part is soaked in water each night, and crammed down its throat next day, morning and evening. The rest of the time it drinks and guzzles in the water. Towards the twenty-second day they mix with the maize some poppy oil, and, at the end of the month, it is known by a lump of fat under each wing, or rather by the difficulty of breathing, that it is time to kill it, otherwise it will die of fat. The liver is then found weighing one or two pounds, and besides the animal is excellent for the table, and furnishes during its roasting from three to five pounds of fat, which is used in the cooking of vegetables. Of six geese, there are commonly only four (and these are the youngest) which answer the expectation of the fattener. They are kept in a cellar, or cool place, with little light. The temperature most favourable for fattening is between 30° and 40° Fahr. so that it is only practised during the latter part of the autumn, the winter, and the early part of spring. The process was examined in detail by Mr. Loudon at Strasburg, in October, 1828, and will be found noticed in the account of the tour which he made in that year, in the fifth volume of the *Gardener's Magazine*, p. 309. "The Roman epicures who prized the livers of geese had already observed that darkness was favourable to this practice; no doubt because it prevents all distraction of the mind to other objects, and directs the whole powers towards the digestive organs. The want of motion, and the difficulty of respiration, may be also taken into consideration; the first, from its diminishing the waste of the system, and both from their retarding the circulation in the vena portarum, of which the blood ought to become hydrogenated, in proportion as its carbon unites itself to the oxygen which that liquor absorbs. This favours the formation of the oily juice, which, after having filled the cellular system of the body, enters into the biliary system and substance of the liver, and gives it that fatness and size which is so delightful to the palates of true gourmands. The liver thus only becomes enlarged consecutively, and the difficulty of respiration does not appear till the end, when its size prevents the action of the lungs. Among a hundred fatteners, there are scarcely two who adopt the practice of putting out the eyes of the geese, and even these do not resort to this barbarous practice till a day or two before they are killed; and, therefore, the geese of Alsace, which are free from these cruel operations, acquire a prodigious fatness, which may be called an oleaginous dropsy, the effect of a general atony of the absorbents, caused by want of exercise, combined with succulent food crammed down their throats." (*Ency. Brit. Sup.* art. Food.)

2105. *Food also appears to have an influence over the eggs within the body.* Dr. Haslam of America has observed that the ladybird insect (*Cicada septemdecem*) appears there at long intervals only; when their numbers are so immense, that the domestic poultry are fed on them, and such food has the remarkable effect of producing colourless eggs. There is indeed as little reason to doubt, that particular food can have an effect on the egg of the hen, as that certain grasses will alter the colour, taste, and smell of the milk of cows, which is notorious.

Subsect. 2. *The Effects of Domestication on Birds.*

2106. *The agencies of regulated temperature*, stimulating food, selections of parents, and the aids of foster parentage also, are among the sources of many of the alterations observed between those fowls which have been long under the dominion of man, and such as are yet at large. The swan, the goose, the duck, and all gallinaceous fowls, are extended in bulk at the expense of their powers of flight, in so much that they now depend on man wholly for support; they therefore give and receive mutual benefit. Even those only half reclaimed seek the fostering protection of partial domestication; thus the keeper's bell calls all the pheasants from the woods around to receive barley or buck-wheat. Many birds domesticate themselves; the robin, the wren, the swallow, and the martin, seek the habitations, and even court the company, of man. It is to the artifices practised in the close domestication of fowls so called, that they vary so extraordinarily in size, in colour, and character, from the original type. We now have them black or white, brown, blue or tawny, and some are varied with every intermixture of tint. We have the monstrous Dorking and the diminutive bantam, who, by the aid of cultivation and artifice, instead of strutting about as formerly with legs feathered to the toes like the grouse, now exhibits a delicacy of leg and foot not exceeded by that of any opera dancer. Domestication has multiplied the varieties of song birds almost to infinity. There are now more than twenty sorts of the canary bird; and to what number the varieties of the pigeon has extended, the thorough trained *pigeon-fancier* only can tell. Many laugh at these fancies, and when they absorb all the energies of the mind, as is occasionally the case, it is to be lamented; but when properly pursued, they are means tending to important ends. By them we enter into the hidden recesses of nature, and borrowing from her workings we also are enabled to produce beneficial alterations in the animal and vegetable world, such as were never before contemplated, and would have been thought to be impossible, until philosophy had shed her broad lights and irradiated all around.

Subsect. 3. *The Migrations of Birds.*

2107. *The periodical migrations of the feathered tribes* have been for ages a subject of interest and inquiry. The sacred page alludes to it more than once; for in those days the stork, the crane, and the swallow, observed their appointed times as now. The feathered travellers appear to be stimulated to these periodical wanderings by various necessities, but principally by change of temperature, and search of food: they also seek new locations, to discover the most suitable places for nidification, and rearing of their young. It is well known that all birds are not migratory; but it is not so well known that the same species, which is migratory in one country, is stationary in another; as the linnet, who remains always with us, is migratory in Greenland. In Sweden the female chaffinches leave the males.

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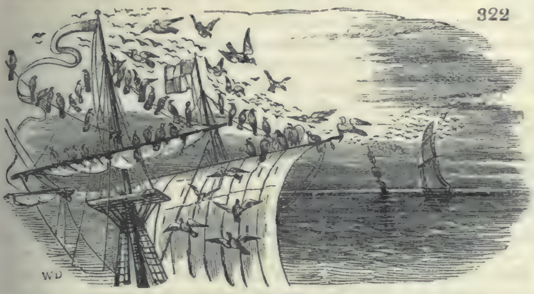

BIRDS OF PASSAGE.

2108. *Birds of passage are such as take distant periodical flights.* Those that visit us in the spring, and leave in the autumn, are called summer birds of passage, as those which appear among us in the autumn, and leave us again in the spring, are known as winter birds of passage. Of the former the tribes are very varied; the latter principally consist of waterfowl. The different species do not observe the same time of either coming or going, neither do individual species depart at any set time. Among the summer birds the wheatear precedes the swallow, the swallow the martin, and the martin arrives before the corncrake. Among the winter passage-birds we observe, first, the woodcock, then the fieldfare, and after him the redwing. An early spring and an early winter hasten the departure of the one, and the coming of the other. Snipes are irregular in the time of their appearance. It would prove both an interesting and a useful amusement for the sportsman, to form a calendar of the coincidences of the simultaneous appearances of certain phenomena in vegetation, with the arrival and departure of the feathered tribes. He might then, with some certainty, prognosticate the visitations of some objects of interest to him by the leafing of some plants, the flowering of others, and the fructifications of a third; for, as aptly observed by Dr. Fleming, "As the state of vegetation depends on the temperature of the season, and the life of insects on the state of vegetation, we may safely conclude that the movements of the phytivorous and insectivorous birds must be dependent on the condition of plants. Linnæus observed that the swallow returned to Sweden when the bird-cherry came into leaf, and when the wood-anemone flowered. He also found the arrival of the nightingale accompanied with the leafing of the elm. Stillingfleet says that the swallow returns to Norfolk with the leafing of the sycamore. It has also been observed that the cuckoo sings when the marsh-marigold blows." By some admirable instinct birds of passage return to the same situations for many successive seasons: many have been marked for the express purpose of noting their return; and the experiment has so often succeeded, as to warrant our concluding that, when it did not occur, it was rather the result of casualty, than any departure from the principle. Our fishing department will show that the finny tribes are equally perceptive of their former home; and thus the samlet, which having been captured by the minikin-fly in the former spring, and returned to the water by the humanity of the captor, may probably reward him in the spring in the form of a salmon.

2109 *The continued interchange of birds by migration*, as very happily expressed by Mr. Griffith, "keeps up a sort of equilibrium of life." The bird, passing in summer from the equinoctial climates to the cold regions of the north, and again in winter from the poles towards the equator, knows, by an admirable instinct, the winds and the weather which are favourable to his voyage. He can long foresee the approaches of frost, or the return of spring, and learns the science of meteorology from the element in which he almost lives. He needs no compass to direct his course through the empire of the cloud, the thunder, and the tempest; and while man and beast are creeping on the earth, he breathes the pure air of heaven, and soars upwards nearer to the spring of day. He arrives at the term of his voyage, and touches the hospitable land of his destination. He finds there his subsistence prepared by the hand of Providence, and a safe asylum in the grove, the forest, or the mountain, where he revisits the habitation he had tenanted before, the scene of his former delights, the cradle of his infancy. The stork resumes his ancient tower, the nightingale the solitary thicket, the swallow his old window, and the redbreast the mossy trunk of the same oak in which he formerly nestled. Linnæus makes mention of a starling, which came regularly to lay during eight years in the same trunk of an alder, although it emigrated every winter. Spallanzani also, who interested himself much with this subject, attached red threads to the legs of swallows, and had the satisfaction of observing their return during many successive seasons to nestle under his windows.

SUBSECT. 4. *The Means of Offence and Defence in Birds.*

2110. *The principal offensive weapon of the greater number of birds is the beak.* To this the rapacious tribes add their talons. With these the eagle seizes on even large quadrupeds, and distracting the attention of his victim by buffeting it with his wings, he tears out its eyes, and it then falls an easy prey. The falcon family live on the smaller beasts, and on birds in general; but conscious of their powers, it is not often that they are seen to wage war with each other. The flight of the falcon is rapid in the extreme, and it takes the advantage which its impetus gives it, to strike down the victim by its accumulated force. The less rapacious hawks hover on the wing, and thus insure their prey by a species of fascination. The vision of birds is a very potent weapon, for, as we have lately observed, they have the faculty of viewing objects far and near with equal precision. The heron stands motionless in the water, until his figure attracts little notice among the fish, who gradually are led to pass near him, when they are sure to be struck with unerring certainty. It was formerly believed, and is even yet not wholly discredited, that some effluvium passed from the legs of the heron and bittern, which actually attracted the fish within their reach. Others have made mention of a phosphorescent light, which slightly illuminated the breast of these birds, but the notice of which phenomena wants confirmation. Nevertheless it would be rash altogether to deny these suppositions; for, by comparison with many others, they are quite within the verge of possibility. Scent, we know, can be diffused through water — moisture is even favourable to its passage; electric sparks irradiate the cat by friction, and the glowworm attracts her mate by luminous markings.

2111. *The defences of birds* are still more varied than their means of offence. Against the fell destroyer man their wings aid them materially, and their fears assist them more: but against their fellow birds they have to balance flight against pursuit, and cunning against predacity. Stratagem is employed by birds to protect their young, as is seen in the partridge, who tumbles over and over as though wounded, to decoy men and dogs from her helpless young. The plover flies around the head of the dog or the man, whose approaches towards her callow brood greatly alarm her; but an admirable instinct has taught her to seem the least concerned when her fears are most urgent; and her sagacity often serves her purpose effectually.

2112. *The colours of birds* afford them much defence, and the groundlings are effectually screened from the sight of all by their variegated plumage. How few among the most keen-eyed sportsmen ever saw a snipe on the ground? Partridges may be seen on the fallows, but in the stubble they are rarely discovered. The dead leaf of winter and the woodcock's back so truly harmonise, that they seem made not to be disjoined.

2113. *In the nidification of birds*, their extreme caution and secrecy is their best defence. The nest is either placed in the most obscure situation, or otherwise it so completely accords with the matters around it, as to escape observation. But to mock all fixed laws, some of the confiding tribes which live around the habitations of man, build their nests immediately in view. Here surely something more than instinct has informed them that the confidence shown shall not be misplaced; and the martin, swallow, robin, and wren, pass unmolested, by common consent, because they have thus openly bespoken our protection. The rook, the magpie, the jay, &c. build aloft almost out of reach of man; while the devastated castle serves to secure the nest of the owl, the starling, and, still more generally, of the jackdaw. Some birds float their nests on the waters, some force their own bodies under the waves, and dive for safety. Others bury every part under water but the nostrils, as the moorhen and waterrail; while the pendent nest, hung by a thread over the river, secures the young of some from the depredations of the weasel, &c. &c.

SUBSECT. 5. *The Longevity, Decay, and Death of Birds.*

2114. *The duration of life in birds* bears no proportion to either their size or the time it requires to bring them to maturity. We have ourselves seen a small cockatoo, which had been in the family of Sir Claude Crespigny upwards of eighty years. Ravens have been known also to attain nearly the same age, and equal longevity is attributed to the eagle. Larks reach to eighteen and twenty years in a state of domestication, and canary birds to twelve and fourteen. The robin appears a short-lived bird, for he is constantly at war with his fellows; consequently, as soon as his powers flag, he is worried to death.

2115. *The progress of decay in birds* is only to be marked in those which are domesticated around us. We had an opportunity of observing this in one of the most interesting canary birds we ever saw. He was very often at liberty, and while any members of the family were reading around the fire, it was his delight to settle on one of the open books. Thus situated, heat radiating from the heated leaves drew him to recline on his side, expand his limbs, and ruffle every feather to enjoy the genial warmth. It was difficult to displace him; he would take no affront, and when a leaf was attempted to be turned over, he allowed it to be drawn from under him, and attached himself as closely to the next. At seven years old his song was less loud and frequent, and his manners less volatile, but equally interesting. At ten years he had ceased to sing, and all the symptoms of decay gradually increased, but not to such a degree as to predict the expiration of the vital spark, which took place suddenly, at either twelve or thirteen years old, for it was not exactly known which, without any appearances of disease. We have heard of one canary whose life reached to sixteen years.

2116. *Death, we believe, occurs very suddenly in birds;* they have great vitality, but the slightest interruption to it destroys the balance between expenditure and supply, and the vital functions cease without a struggle. This is one of the many, nay, of the innumerable, harmonies of nature towards these innocent beings, who, when living, are not tormented with an apprehension of death; and who, when it arrives, are removed suddenly and without suffering.

SUBSECT. 6. *Method of Preserving the Bodies of Birds after Death.*

2117. *When a bird has been wounded,* and it is intended to preserve the body after death, the most humane, as well as the most ready, method of dispatching it so as not to injure the plumage, is to squeeze it across the breast by means of the fore-finger and thumb, taking care however that the pressure does not fracture the bones. As soon as the bird is dead introduce a little cotton into the bill, to prevent any soiling of the feathers from any exudation from the mouth. It is prudent to tie up the beak also before commencing the operation of skinning, which should not be attempted until some hours after death, that the blood may have become completely coagulated. The following instructions for bird *preserving* and *setting up* are principally drawn from the fourth edition of *Taxidermy*, published by Messrs. Longman & Co. which we would strongly recommend to all lovers of Natural History as the best work on the subject. We have ourselves preserved many valuable specimens by the method here recommended, and with uniform success.

2118. *Becœur's preservative paste, or arsenical soap,* is a necessary article in the process, and may be made in any quantity after the following proportions: — Camphor, one ounce and a quarter; arsenic, in powder, eight ounces; white soap eight ounces; salt of tartar three ounces; powdered lime one ounce. Cut the soap in small slices, as thin as possible, put them in a pot over a gentle fire, with very little water, taking care to stir them often with a wooden spatula; when well melted, put in the salt of tartar and powdered chalk. Take them off the fire, add the arsenic, and triturate the whole gently. Lastly, put in the camphor, which must first be reduced to powder in a mortar by the help of a little spirits of wine; mix the whole well together. This paste ought then to have the consistence of flour paste.

2119. "*The process of skinning a bird* commences by stretching it out on a table, the head turned towards the left of the operator;" we divide the feathers of the belly right and left with small forceps, pull out the down which covers the belly, make an incision in the skin from the commencement of the sternum, or breast-bone, until beyond the middle of the belly, raise the skin on one side by the forceps, and separate it from the muscles with a scalpel, approaching as near as possible to the wings: this done, we put a little floured or powdered cotton on the skin and flesh, that the feathers may not stick to them; we force up, or push out, the thighs within the body of the skin, cut them between the thigh and leg in such a manner, that the former remains to be afterwards pushed back into the skin. By the help of the scalpel and the fingers we detach the skin as far as the rump, which we cut off. It is essential for this part to remain attached to the skin to sustain the tail feathers. We then take the already uncovered part of the body with the left hand, and continue to separate the skin from the two sides, cutting some little tendons, which we find before we come to the wings, with the scissors; we separate the wings from the trunk, at the junction of the humerus with the body, and restore them to their proper place. We continue to skin the neck, thrusting the head from within, and we uncover it, taking care not to enlarge the opening of the ears, and, above all, to be particularly attentive not to injure the eyelids in taking out the eyes, which are easily picked out with the closed points of the scissors; we replace the eye with chopped cotton, with which we fill the orbits. We separate the neck, take out the tongue, and carefully remove all the flesh which is between the two branches of the inferior mandible. We enlarge the occipital hole to extract the brain, by means of an iron instrument resembling an ear-picker; and, to finish cleaning out the inside of the head, we pass cotton and flax into it several times; we must, during the operation, besprinkle the humid parts with plaster of Paris or dry earth, from time to time, to prevent the feathers adhering to them and becoming dirty, and also divide the feathers to the right and left, for the same reason. We then take out the wings, cut them off at the second joint, and taking away the flesh, restore them to their place. This operation answers for small birds; and we anoint the wings in the parts which are destitute of feathers. We take away the flesh of the thighs, always preserving the bones of the leg, and put them back in their places."

2120. "*If the bird be of a larger size*, we must carefully take away all the muscles which adhere to the skin, as well as the fat; and if it has been killed by a gun, or holes are otherwise formed in the skin, they must be properly sewn up within. We fix a piece of thread to the first joint of each wing, drawing them together to the distance which they occupy when the bird is in flesh. This precaution, which does not appear to be of great importance, infinitely abridges the operation; for when the bird is mounted, the wings place themselves, provided they are properly tied within. It is now necessary to arrange the skin: we begin by replacing the skull (which we have taken care to anoint well); with the left hand we hold the thread which ties the beak; we assist the head in repassing into the neck with the fore-finger of the right hand; at the same time we are pulling the thread on the opposite side, taking care that the feathers at the edge of the opening do not enter with the edges of the skin. We lay the bird on the table, the head to the left, place the wings and claws properly; we put a plate of lead of about a pound weight on the tail; we raise the feathers of the edges of the opening with the thumb and fore-finger of the left hand, to prevent their being soiled, and anoint the inside of the neck, introducing the *preservative* alternately with the flax, without stuffing it too thickly, which is a fault in the greater part of mounted birds. We continue to anoint the back as far as the rump, and stuff it nearly one-third of its thickness, that the iron-work may be placed on a thick layer of flax. We then prepare a stand as seen in (*fig.* 323.), the proportions of which are equal to the size of the bird. The first wire, which is that of the central one, ought to be longer than the body of the bird; we form a little ring with the pincers, at about a quarter of its length, and point the opposite end. This wire being oiled, we introduce it across the skull, passing it into the neck in the middle of the flax, with which it is stuffed; so that, having crossed the skull, the ring of the wire is placed a little towards the anterior part, and can receive the extremities of each of the wires, which have passed through the thighs and claws after being pointed, which operation is effected in the following manner: — We make a passage through the claw and bone of the thigh, by the aid of a brass awl, the size of the wire we wish to employ; we pass the iron which is to remain in the leg of the bird across the knee, and bring out interiorly, putting it into the ring, and the same with the other side, and uniting the three ends of the leg wires, and the end of the central wire beyond the ring; twist them together with a flat pincer, and lower them towards the tail. It still remains to form the fourth wire, which we call the tail-bearer: we take a piece of iron wire, form an oval with it by twisting the ends two or three turns in such a manner that, after being twisted, these two ends form a fork, and the oval is nearly the third of the length of the bird's body; the two teeth must be pointed with a file, and near enough together to enter the rump; their ends will be hid under the great feathers of the tail, and the oval in the body of the bird. If the subject is of a large size it will be necessary to tie the tail-bearer to the interior machinery, otherwise it may remain free."

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SETTING UP OF BIRDS.

2121. "*All these wires being placed*, and on a layer of chopped flax, we continue to anoint right and left, and especially at the rump; and in proportion as the preservative is placed, we furnish the part with chopped flax until the bird has attained its proper size, when we place it as seen in the cut." (*Taxidermy*, p. 58.)

Subsect. 7. *Preserving the Vitality of the Eggs of Birds.*

2122. *The preservation of life in the eggs of birds*, both before and after they have been sat upon, is often a matter of some importance to sportsmen; to the naturalist it is equally so; for when he has met with a nest in his rambles that appears rare, by abstracting the eggs and placing them under another bird in lieu of the rightful owner, it often happens that the foster parent will adopt and rear them. Or again, when, in what may be called his ornithological rambles, he shoots one or both individuals of a pair which are unknown to him and probably are really exotic, under such circumstances it is common to look closely for a nest built by them, which having taken, he may attempt hatching by similar fosterage. Our more immediate attention is, however, directed to the sporting purposes to which preserving vitality in eggs may be applied. Partridges' nests are very frequently disturbed by mowers. Pheasants, also, are cut out in plantations; and in many other instances it may be desirable to rear young birds from eggs accidentally discovered. We need not inform the reader that a temperature equal to that yielded by the parent bird, if it be duly and regularly maintained, is sufficient for this purpose. We will not enter upon the various methods of maintaining artificial heat further than to observe, that ingenious persons may turn all of them to account when a foster mother cannot be got. Our immediate purpose is to inquire how we may retain so much heat in the eggs, as will be sufficient to keep up their vitality until the hatching process is again brought into full action? We have ourselves, in our boyish days, carried home nests and eggs in our bosom and in our hat, and have thus kept up, without trouble, sufficient warmth for the purpose; but, boylike, the difficulty which always met us on the threshold — which was that of supplying a foster-parent — either deterred us from numerous attempts, or rendered such attempts abortive by mismanagement.

2123. *Foster parentage may, however, be gained from some birds,* particularly such as build near us and court our acquaintance apparently by their familiarity. Some of these will admit of many liberties being taken with their nests, and will even hatch the eggs, and bring up the young, of other birds. But our principal dependence is on the gallinaceous tribes, which we have made almost artificial animals by directing their habits into new channels. The common hen we can usually depend on to undertake the office of incubation, and also the rearing of the young afterwards; the guinea-fowl now and then only; the domestic pheasant seldom. Pigeons will also, in many cases, hatch the eggs and rear the young of other birds.

2124. *It is to the transporting of the eggs* which have already been sat upon, we must now draw our attention. In a sunny day a nest of eggs well surrounded with flannel, feathers, or even dry hay, &c. and placed in a basket, may be carried in the hand on that side to which the sun's rays are directed, with every prospect of success; very small eggs may be wrapped up and carried in the bosom. But of all the methods the hat offers the best resource, from the regular heat imparted by means of the head. We have known this successfully practised in several instances with pheasants', partridges', plovers', and even wild ducks' eggs; and we are pleased to find our testimony on the subject corroborated by a correspondent of Mr. Loudon's, who observes, — "A few years ago, whilst crossing a heathy country, my horse trod up a widgeon (*Marca Fistularis* Stephens); and on getting off to examine the spot, I found a nest with about eight eggs. I took off my hat, and put some dry herbage into it, upon which I placed the lining of the nest with the eggs, dividing one from the other by a little of the lining; upon which I put more of the herbage, and thrust my head carefully into my hat, and rode quietly home, about the distance of six miles; and from the time I found the eggs until I could procure a hen was about the space of two hours and a half; and in about one week the birds were hatched. I have since tried this experiment on eggs mowed or reaped over in the harvest time, and found it to answer; the warmth of the head in the hat being of sufficient temperature to prevent the eggs from spoiling, taking care to walk or ride quietly until a hen can be found." (*Magazine of Natural History*, vol. v. p. 333.)

Subsect. 8. *Preserving of Egg-shells.*

2125. *The same desire which enters the minds of many* to preserve the forms of such birds as fall in their way by taxidermy, may influence them to retain the eggs also. We ourselves had a small collection of British birds' eggs, principally consisting of the warblers. It was our particular endeavour to preserve the egg *entire*, contents and all; but the porous nature of the shell would not shield the contents from putrefaction and decay, in spite of baking, boiling, slow-drying, spirituous immersions, &c. Even varnishing would not stand our entire friend, although it prolonged the duration of our specimens. As it appears, therefore, necessary to the lasting preservation of the shell of an egg that we abstract the contents, what is the best method of accomplishing this abstraction?

2126. *To blow eggs.* It would seem unnecessary to detail the schoolboy method of "blowing" an egg-shell; but, as Mr. Waterton has condescended to treat on the subject, we need not be ashamed of so doing; and as he does it so naïvely, it shall be in his own words: — "Make a moderately sized hole at the sharp end, with a pointed instrument proportioned to the egg: thus, for a swan's egg use the point of your penknife; for a robin's take a small pin. Having made the hole at the sharp end, make one at the blunt end, and let this last hole be as small as possible. This done, apply your mouth to the blunt end, and blow the contents of the egg through the sharp end, where the hole is larger. If the yolk will not come out freely, run a pin or a wire up into the egg, and stir the yolk well about. Now get a cupful of water, and immersing the sharp end of the shell into it, apply your mouth to the blunt end, and suck up some of the water into the empty shell. Then put your finger and thumb upon the two holes, shake the water well within, and after this blow it out. The water will clear your egg of any remains of yolk or of white which might stay in after the blowing. If one sucking up of water will not suffice, make a second or a third." (*Magazine of Natural History*, vol. v. p. 516.) In the same respectable work a still better method, as it appears to us, is detailed by a correspondent, who informs us that the eggs in his collection are not punctured at the end or ends, but on one side, by a hole so small as not to blemish the egg. He observes, "The eggs in my collection are all blown with one hole at the side, and so small as to be scarcely perceptible. I use a pipe, which I had made for the purpose, and have here given you a figure of it, with the method of using it, which may perhaps prove interesting to some of your readers who are fond of this pursuit (*fig.* 324.).

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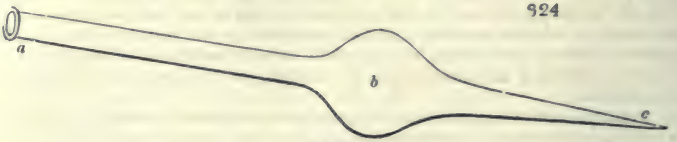

EGG PIPE.

The method of blowing them is this: Make a small pinhole at the side of the egg, large enough to admit the point of the pipe, which is represented at *c*, one-sixth part of an inch; then apply your mouth to the entrance of the pipe (*a*) and suck as hard as you can, when immediately the contents of the egg rise, and are lodged in the ball of the tube (*b*) without proceeding higher towards the mouth. Next blow the contents down the pipe into a basin, or whatever you may have to receive it, and suck a little clean water up into the ball, and blow it into the egg; shake the egg in your hand for about a minute, and, applying the point of the tube, withdraw the water, which leaves the egg perfectly clean." (*Ibid.* vol. iv. p. 145.)

2127. *To prevent the internal membrane which lines the shell* from corrupting and injuring the shell, Mr. Waterton recommends to "take a wine-glass, and fill it with a solution of corrosive sublimate in alcohol. Then immerse the sharp end of the egg-shell into it, keeping your finger and thumb, as you hold it, just clear of the solution. Apply your mouth to the little hole at the blunt end, and suck up some of the solution into the shell. You need not be fearful of getting the liquor into your mouth; for as soon as it rises in the shell, the cold will strike your finger and thumb, and then you cease sucking. Shake the shell just as you did when the water was in it, and then blow the solution back into the glass. Your egg-shell is now beyond the reach of corruption; the membrane retains for ever its pristine whiteness; and no insect, for the time to come, will ever venture to prey upon it. If you wish your egg to appear extremely brilliant, give it a coat of mastic varnish, put on very sparingly with a camel-hair pencil. Green or blue eggs must be done with gum arabic, because the mastic varnish is apt to injure the colour." (*Loc. cit.*) It has, however, been suggested to Mr. Waterton by a friend, that the copal forms a better varnish than mastic for the purpose; and Mr. W. himself has, he thinks, improved on his own method by making one hole answer the purpose of two, particularly in the larger eggs. "Into this hole he introduces a straight wire, with a little piece of dry cotton or thread well tied round the end introduced. Then, holding the egg with the hole downwards, you see the wire, which acts as a piston, and forces a sufficient quantity of the contents of the egg out to enable you to get out the rest by sudden jerks."

Subsect. 9. *Method of Pinioning Fowls and of Preserving Birds which have been Winged from fatal Hemorrhage.*

128. *Pinioning fowls* is often practised to prevent them from escaping, as is the case with decoy ducks, generally. It is also frequently employed to prevent large birds from flying over boundaries, or from mounting high trees to roost upon. In such cases the practice of simply shortening the greater or primary quill feathers, as is often done, is only a temporary resource. It disfigures the bird, and it frequently happens that the growth of the feathers not being watched the bird escapes at last. The only effectual mode of pinioning is to amputate that portion of the wing to which the larger quill feathers adhere, which completely prevents their reproduction, and as effectually confines the bird. According as the subject of the operation is of the long winged or of the short winged kind, so the amputation, to be properly done, must be made nearer to the extremity of the wing (*a*, *b*, *fig.* 325.) or nearer to its articulation with the body (*d*, *e*), or in some cases as high as *e*.. As observed by Colonel Montague in his *Ornithological Dictionary*, it has been usual to cut

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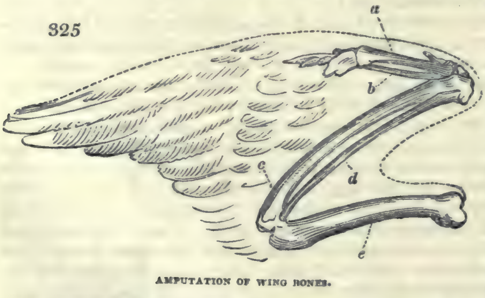

AMPUTATION OF WING BONES.

off "a portion of the wing by a strong pair of scissors, or shears, and then, with a red-hot iron, searing the part, in order to stop the effusion of blood. The operation thus performed is tedious, painful, and not always attended with success; for as the principal artery contracts upon cutting the flesh, we have seen the part grilled for ten minutes with a red-hot poker, without closing the mouth of the artery, and the bird die in consequence of the loss of blood." We have ourselves seen cases of birds so lost; but which, in every instance, might have been avoided by first securing the blood-vessels after the following simple method. Have in readiness a needle and silk well waxed, the size of both being proportionate to that of the bird. If the bird is large the needle should be of sufficient length and strength, such as the darning-needle used for worsted stockings, and when of this size it may be armed with strong thread instead of silk, which also must be waxed to prevent its slipping off. As the prevention of hemorrhage is the grand object of the operation, so the operator should be made aware that the principal arterial trunks seek protection by passing on the inner side of the larger bones, where there are two, as at *a* and *b*. Keeping this in view will materially direct the unskilled operator how to proceed safely. Our cut (*fig.* 325.) is intended to represent a wing of the falcon or long winged birds. The *dotted lines* display the feathers, and the *full lines* those of the wing bones to be severed in the operation of pinioning, or otherwise used to sustain the bleeding vessels, which having been divided by accident, are to be secured by ligature. We have already presented comparative figures of the wing of a bird and the arm of a man, p. 612. to which we would refer, as also to our figure of the entire skeleton of a bird, p. 609. By attention to these, the explanation which is to follow will become more intelligible, and the operations required will be better understood.

2129. *Mode of operating.* Supposing the bird be of the long winged kind, as a falcon or a duck, &c. commence by cutting away as close as possible all the small feathers around the metacarpal or wing-bones of the bird at *a* (wrist bone of the human); having done this, pass the armed needle between the bones, but as close as possible to the lesser bone (*b*); again enter the needle on the opposite side of the larger bone (*a*), which will then include within its circumvolutions the metacarpal artery. Now knot the two ends of the thread together with a double turn to prevent slipping, when drawing the ends rather tightly together will safely secure the vessel. Amputation may now be made from a quarter to half an inch or an inch below, as the bird may be small or large, by means of a pair of sharp scissors for minute birds, or shears for larger ones. But where it can be done, by all means rather employ a scalpel and fine saw, to shears or scissors; for when the wing is placed on a block, and cut off by means of a knife and hammer, there is some danger of splintering the bone, particularly in very large birds, for which reason we would avoid employing shears. Any moderately fine saw will answer the purpose, nor is any preparation necessary, further than to make a section of the soft parts with a knife.

2130. *The best method of operating on gallinaceous and other short winged fowls,* whose greater coverts and secondary quill feathers are sufficient to raise them on the wing, is as follows:—Prepare the wing by passing the needle and silk, or thread, between the radial and ulnar bones at *c* and *d*, directing the needle near to *d*, when inclosing the larger bone (*c*) within the tie, fasten off and amputate as before.

2131. *The high wing operation for fracture of the humerus* (*e*), or for a wound of the artery, is first to pass a ligature a little within the skin, at a small distance from the bone, and a little above the fractured part, and tie it safely. Then lay bare the part and amputate, removing any splintered portions that might interfere with the healing of the stump. In these several operations, the bird may be set at liberty as soon as it is perceived that the ligature is sufficiently tight to stop the hemorrhage.

Subsect. 10. *The economical Uses of Birds.*

2132. *When we consider how large a proportion of our provisions* are drawn from the feathered tribes, and how many pleasures we derive from them in other ways, as those which they yield us in our sporting pursuits, and those which we owe to them as objects of beauty and song, both in their wild and tame states, we must acknowledge their utility and importance. In the arts they are useful in various ways, and in the manufacture of many articles of importance their several parts appear. They charm our eyes and ears by day, and enfold and cherish us in their downy embrace by night. Birds as an article of commerce are by no means unimportant, and we give and receive them or their products with much benefit to the community. Our cabinets are ornamented with their splendid colours; our museums are rendered more valuable by their varied forms; and the study of their varied structures and functions, dependent on the very different localities they occupy, add greatly to our anatomical and physiological acquirements. We shall not pursue this part of our subject further here, but refer to the economical uses of quadrupeds and of fishes, under both of which heads we have treated of these uses of animals more at large.

CHAP. IV.

FALCONRY, OR HAWKING, HISTORICALLY AND PRACTICALLY CONSIDERED.

2133. *As the eagle has been long called the king of birds*, so falconry was of old a royal sport, and though now little practised by either prince or peasant in Britain, it is yet almost as much in vogue in some eastern countries as heretofore. We propose first to treat of it as an universal sport, and next as one confined to Britain.

SECT. I. *The History of Falconry.*

2134. *At what period falconry was first practised by mankind*, is involved in much obscurity; but it may be reasonably supposed that it was not until the power that domestication had over the manners and habits of animals, became *fully* known, that attempts were made to enlist the shy and ferocious falcon as a confederate in the capture of birds and beasts. However, let the period be what it may when this aërial warfare was first practised, or in whatever quarter of the globe it occurred, we cannot but admire the genius and enterprise of the first falconer.

2135. *Falconry, in all probability, is of Asiatic origin;* we have, at least, abundant assurance that it had been very early practised in the east. Both Asia Minor and China present many ancient legends concerning it. In Turkey, Persia, and Tartary likewise, hawking was not only an early sport, but it is one which, in these countries, has maintained much of its popularity to the present day, a despotic government, and extensive tracts but thinly populated, having tended to perpetuate it. A writer in the *Penny Magazine* has very ably condensed, from the writings of the old eastern travellers, Father Rubruquis and Marco Polo, many interesting notices of the estimation in which it was held among the wandering Tartars during the thirteenth century. A palace at Changa-nor, or the White Lake, is particularly mentioned by Marco Polo as a favourite resort of the grand khan; the numerous waters and extensive plains here furnishing both aquatic and landfowl in abundance. He here found herons, cranes, swans, wild geese, and ducks of various kinds, as well as pheasants, partridges, and other birds indigenous to those countries, in abundance. "The grand khan," says the old Venetian, "derives the highest degree of amusement from sporting here with gyr-falcons and hawks." He also informs us that at another palace, near the city of Chandu, in Tartary, the grand khan keeps upwards of two hundred hawks, which, during his stay there, he always visited and inspected in person, at least once a week. The mews were pleasantly situated in a park, where a variety of animals of the deer and goat kind were pastured, to serve as food for the hawks and other birds employed in the chase. According to Marco, the khan had reclaimed eagles also, which were trained to stoop at wolves; and such was their size and strength, that none, however large, could escape from their talons. This grand khan (Kublai), who was at once emperor of Tartary and China, had two court officers, of the highest dignity, called "Masters of the Chase." In relating the number of his falconers, and the pomp with which he took the field, the Venetian might incur suspicion, were he not fully confirmed in all he says by several accounts of the imposing establishments and sports of the Mogul Tartars. Marco, who was a keen sportsman and falconer himself (as became a well-bred Italian gentleman of that period), may often have accompanied the grand khan, or emperor, with whom he stood in high favour. He says, that after residing the usual time at the metropolis of China, he always proceeded to enjoy the field sports in the plains of Tartary, "attended by full ten thousand falconers," who carried with them "a vast number of gyr-falcons, peregrine-falcons, and sakers, as well as many vultures, in order to pursue the game along the banks of the rivers." He adds, that "this host of falconers was not kept altogether in a body, and at one place, but separated into parties of from a hundred to two hundred men each, who followed the sport in various directions, and brought the greater part of the game they killed to the emperor." (*Penny Magazine*, part xxxiii. p. 475.) In these extensive plains it may be supposed that vast losses must occur, by the wildness of the hawks and the long flights of the game pursued, were it not for precautions as great as the mischances were numerous. Ten thousand guards, we are told, were employed to keep watch, and a signal station or tent was raised on an eminence, to receive whatever birds had strayed, or whatever other matters had been lost in the chasings. These annual hawking expeditions were also attended by the wives and ladies of the court, who had their own hunting retinue, independent of that of the grand khan. What with the attendant courtiers, physicians, astrologers, servants, and falconers, the multitude must have been immense. In China and Tartary, the system of exclusiveness in the practice of field sports prevailed as much as in the dark days of European history. Certain ranks only were allowed the privilege of sporting, nor might a nobleman, without permission, presume to hawk near the residence of the ruler. (See also something farther on the *Hawking Expeditions of the Khans of Tartary*, p. 18.)

2136. *In Persia falconry has been long established,* and that it yet continues to be practised, the *Sketches* of Sir John Malcolm offer very interesting proofs: — "We were kept several weeks at Abusheher, and amongst other amusements by which we beguiled the tedium of our sojourn at this dull seaport, was that of hawking. As the mode of killing the game differs essentially from that of other countries, I shall describe it, that such sportsmen as can read may judge of its merits. The sportsmen proceed to a large plain, or rather desert, near the sea-side; they have hawks and greyhounds — the former carried in the usual manner, on the hand of the sportsman; the latter led in a leash by a horseman, generally the same who carries the hawk. When the antelope is seen, they endeavour to get as near as possible; but the animal, the moment it observes them, goes off at a rate that seems swifter than the wind; the horsemen are instantly at full speed, having slipped the dogs. If it is a single deer, they at the same time fly the hawks; but if a herd, they wait till the dogs have fixed on a particular antelope. The hawks, skimming along near the ground, oon reach the deer, at whose head they pounce in succession, and sometimes with a violence hat knocks it over; at all events they confuse the animal so much as to stop its speed in uch a degree that the dogs can come up, and in an instant, men, horses, dogs, and hawks, surround the unfortunate deer, against which their united efforts have been combined. The part of the chase which surprised me most, was the extraordinary combination of the hawks and the dogs, which throughout seemed to look to each other for aid; this, I was old, was the result of long and skilful training. The antelope is supposed to be the fleetest quadruped on earth, and the rapidity of the first burst of the chase I have described is astonishing; the run, however, seldom exceeds three or four miles, and often is not half so much. A fawn is an easy victory; the doe often runs a good chase, and the buck is seldom aken. The Arabs are, indeed, afraid to fly their hawks at the latter, as these fine birds, n pouncing, frequently impale themselves on its sharp horns. The hawks used in this port are of a species that I have never seen in any other country; the breed, which is called *herkh*, is not large, but is of great beauty and symmetry. The novelty of the amusements I aw interested me; and I was further pleased, on accompanying a party to a village, about wenty miles from Abusheher, to see another kind of hawking peculiar, I believe, to the andy plains of Persia; on which the Hubara, a noble species of bustard, is found on almost bare plains, where it has no shelter but a small shrub called geetuck. When we went in quest of them we had a party of about twenty, all well mounted. Two kinds of hawks are necessary for this sport; the first, the cherkh (that is flown at the antelope), attacks them on he ground, but will not follow them on the wing; for this reason the bhyree, a hawk well known in India, is flown the moment the hubara rises. As we rode along in an extended ine, the men who carried the cherkhs every now and then unhooded and held them up, that hey might look over the plain. The first hubara we found afforded us a proof of the astonishing quickness of sight of one of the hawks; he fluttered to be loose, and the man who held him gave a whoop, as he threw him off his hand, and set off at full speed. We all did the same. At first we only saw our hawk skimming over the plain, but soon perceived, at a distance of more than a mile, the beautiful speckled hubara, with his head erect and wings outspread, running forward to meet his adversary. The cherkh made everal unsuccessful pounces, which were either evaded or repelled by the beak or wings of he hubara, which at last found an opportunity of rising, when a bhyree was instantly lown, and the whole party were again at full gallop. We had a flight of more than a mile, when the hubara alighted, and was killed by another cherkh, who attacked him on the ground. This bird weighed ten pounds. We killed several others, but were not always uccessful, having seen our hawks twice completely beaten, during the two days we followed his sport."

2137. "*When at Shiraz*," our author further observes, "the elchee had received a present f a very fine shâh-bâz, or royal falcon; before going out I had been amused at seeing Nutee Beg, our head falconer, a man of great experience in his department, put upon this ird a pair of leathers, which he fitted to its thighs with as much care as if he had been the ailor of a fashionable horseman. I inquired the reason of so unusual a proceeding. 'You will learn that,' said the consequential master of the hawks, 'when you see our sport:' and I was convinced, at the period he predicted, of the old fellow's knowledge of his business. The first hare seized by the falcon was very strong, and the ground rough. While he bird kept the claws of one foot fastened in the back of its prey, the other was dragged long the ground till it had an opportunity to lay hold of a tuft of grass, by which it was nabled to stop the course of the hare, whose efforts to escape, I do think, would have torn he hawk asunder, if it had not been provided with the leathern defences which have been mentioned. The next time the falcon was flown gave us a proof of that extraordinary ourage which its whole appearance, and particularly its eye, denoted. It had stopped and uite disabled the second hare by the first pounce, when two greyhounds, which had been lipped by mistake, came up and endeavoured to seize it. They were, however, reulsed by the falcon, whose boldness and celerity in attacking the dogs, and securing its rey, excited our admiration and astonishment. We had some excellent sport, also, with smaller hawks at partridges. I was particularly pleased with one bird, which kept hovering over our heads till the game was sprung, and then, descending like a shot, struck its prey to the ground."

2138. *The practice of falconry seems to have been as prevalent in China as among the Moguls.* The monarch of Persia, with an embassy to the emperor of China, sent some very fine horses, who returned several *shankers*, which appear to have been hawks held in very high estimation. In India also falconry was no less common, and the native princes of the country, from time immemorial, have pursued it with undiminished ardour.

2139. *In eastern countries falconry appears even yet to retain much of its sway.* There it commenced its boldest flights, and there it was that the eagle was taught to stoop at the stag, gazelle, antelope, and wild boar; and there it is, according to Mr. Johnson's account, that the native Indian gentry still travel with their hawks, "the largest of which are even yet trained to kill deer by pitching on their heads, and picking out their eyes." This gentleman's relation of the hunting retinue of the nabob-vizier of Lucknow, of which he was himself an eyewitness, makes it equal to that of the grand khan, in both number and grandeur.

2140. *Of the practice of falconry in ancient Greece*, history appears to be silent. Pliny, it is true, is thought to allude to a method practised in Thrace, by which some birds were employed in the capture of others. (Lib. x. cap. 8.) Might not call-birds, as used by us, have been intended by these indefinite notices; for we can hardly believe that this observant naturalist would have contented himself with so trivial an account of what, in all times, must have been considered a remarkable conquest over the intractable nature of the most ferocious and wild of the feathered tribes.

2141. *At what exact period falconry was first practised among the Romans*, we are likewise no better informed. It does not appear to have been much known in the time of Vespasian; but that it did eventually become a favourite pursuit among them, we may judge from history. Gildas, in his first epistle, compares Maglocunus, when betaking himself to a monastery, to a dove, that with vicious turns and windings takes her flight from the talons of the hawk. Martial also, by his calling a hawk "a fowler's servant," would seem to hint that falconry was well established in his time. An author of some note gives to the Thracians the invention of hawking, and it is certain they practised it at an early period; but, however this may be, we think that the assertion of this same author, that the Romans derived their knowledge of it from so circuitous a source as that of the early Britons, is very questionable. The Thracians are known to have peopled a great part of Greece, and as the Romans derived many of their habits and pursuits from the Grecians, it is more probable, that, however tardy in their adoption of it, they were indebted to that people for the knowledge of it.

2142. *Whatever may be said to the contrary*, we have offered sufficient evidence that hawking was very prevalent in ancient times. One, to whom we owe many obligations for his literary aids, observes on this subject, "*Boulanger* proves from the testimony of many writers, that this sort of hawking was in use in ancient times; particularly from Aristotle, who says in his *Histoire Ancienne*, lib. x. that when the hawks seized a bird, they dropt it among the hunters; from Oppian also, who says that hawking is an easy diversion; and likewise from Martial, who takes the word fowler in this sense, —

> 'Prædo fuit volucrum, famulus nunc ancupis idem,
> Decipit, et captas non sibi mœret aves.'

At this sport, Julius Firmicus Maternus says they made use of hawks, falcons, and buzzards; and adds, that they had dogs also to spring the game. The pigmies in India, according to Ctesias Cnidius, used ravens, hawks, crows, and eagles, to hunt the hare and fox, instead of dogs. Pliny, speaking of hawks says, there are some that never take birds, but upon the ground; others that only take them flying round trees; others when they are perched upon the highest boughs; and others when they fly in the air at large. He adds also below, that in Thrace, beyond Amphipolis, men and hawks hunt together in a sort of society; that the men spring the game out of the woods and thickets, and that the hawks take them, and afterwards divide the spoil with the men. Ælian speaks of another manner of hawking; the men spread their nets, and lie still, and the hawks afterwards pursue the birds and fright them into the nests." (From *Antiquity explained, and represented in Sculptures*, by the learned Father Montfaucon, translated by David Humphreys, M.A. Fellow of T.C.C. vol. iii. chap. iv. sect. 7. p. 203.)

2143. *Mr. Pennant is of opinion that falconry was first practised in Scythia*, and that it was from thence disseminated over the northern parts of Europe. The Norwegians, we know, have long been famed for hawking, and they remain to this day well skilled in the practice of it; and moreover, it is from Northern Europe we still derive most of the hawks of a large size in use amongst the few remaining British falconers. The Norway breed of hawks, we are told, was in olden times in high esteem in England; indeed they were thought bribes worthy of a king. Geoffrey Fitzpierre gave two good Norway hawks to King

John, to obtain for his friend, Walter Le Madena, the liberty of exporting a hundred weight of cheese; and Nicholas, the Dane, was to give the king a hawk every time he came to England, that he might have free liberty to traffic throughout the king's dominions. They were also made the tenures by which some nobles held their estates from the crown: thus Sir John Stanley had a grant of the Isle of Man from Henry the Fourth, to be held of the king, his heirs, and successors, by homage and the service of two falcons, on the day of his or their coronation. And Philip de Hasting held his manor of Combertoun, in Cambridgeshire, by the service of keeping the king's falcons.

2144. *Falconry was likewise long ago introduced into Germany and Holland*, and the latter country continues, even yet, to rear falcons for the service of other nations. The Saxons were likewise well skilled in hawking, which they in all probability derived from the Danes. Burton's researches, as detailed in his *Anatomy of Melancholy*, led him to the following conclusions on the origin of hawking,—"It was never heard of amongst the Romans," which assertion he seems to found on what he finds in Jos. Scaliger, *Comment. in Cirin*, fol. 344.; *Salmuth*, 23, *de Nov. Repert. Com. in Pancir.* "The Greek emperors," he continues, "began it, and now nothing is so frequent: he is nobody that in the season hath not a hawke on his fist: a great art, and many books written of it. It is a wonder to hear what is related of the Turke's officers in this behalf, how many thousand men are employed about it, how many hawkes of all sorts, how much revenewes consumed on that only disport, how much time is spent at Adrianople alone every year, to that purpose. The Persian kings hawke after butterflies with sparrows, made to that use, and stares; lesser hawkes for lesser games they have, and bigger for the rest, that they may produce their sport to all seasons. The Muscovian emperours reclaime eagles to fly at hindes, foxes, &c.; and such a one was sent for a present to Queen Elizabeth: some reclaime ravens, castrils, pies, &c. and man them for their pleasures."

2145. *Falconry*, we may therefore conclude, has had a long and extensive sway, and has been more especially pursued by the higher classes. To them it even became the insignia of their rank; their legislators protected it, and their poets eulogised it. In these times, when the living objects of nature were the principal subjects of regard, it is not to be wondered at that references to the sports of the field figured in their gravest discussions, or were brought in aid of the ordinary transactions of life. The *bowshot* was a common measure of distance, and if history be correct, the flight of the falcon has been used for the same purpose. Kenneth the Third, to reward signal services in the battle-field, performed by a peasant and his two sons, gave them so much land on the river Tay as a falcon from a man's hand flew over till it settled; which being six miles in length, the track was afterwards called Errol, and now forms the patrimonial estate of the Earl of Errol, whose coat of arms, as directed by Kenneth, consists of three escutcheons, gules, to intimate that this trio had been three fortunate shields of Scotland, with a falcon for a crest and two ploughmen as supporters.

2146. *Strutt cannot, however, satisfactorily trace hawking to an earlier period than the fourth century*, and he appears, with Burton, to consider Julius Firmicus, who lived about that time, as the first Latin author who has noticed falconers, and the art of teaching one species of birds to fly after and catch others. An English writer, he also observes, asserts, but on authority not known to him, that Frederick Barbarossa first invented hawking for his amusement, when he was engaged in besieging Rome in the twelfth century. It is however not very probable, we think, that a sport which requires so much preparation and patience, should have been perfected in the tented plain, or that this emperor, who in all field sports was said "to be second to no one," was ignorant of the existence of falconry. Frederic the Second, who ruled early in the thirteenth century, was also a falconer; and further, he wrote a book on the subject, bearing for its title, *De Arte Venandi cum Avibus*, which was printed from manuscript at Augsburg, A.D. 1596.

2147. *The French also were early devotees to hawking*, but whether they preceded us in their knowledge of it is doubtful, although an authority supposes such to be the case from the fact, that many of the technical terms in old English falconry are of French extraction, but many more are derived from the Saxon. The probabilities, we think, greatly favour our having derived it from our Saxon masters, rather than from our French neighbours, who were in those days not much more advanced in the arts than ourselves. If, however, they were not coeval with us in falconry, we have reason to believe they were not far behind us. This sport is often noticed in the capitularies of the eighth and ninth centuries, "At which time," says Strutt, "the grand fauconnier of France was an officer of great eminence; his annual salary was four thousand florins; he was attended by fifty gentlemen, and fifty assistant falconers; he was allowed to keep three hundred hawks; he licensed every vendor of hawks in France, and received a tax upon every bird sold in the kingdom, and even within the verge of the court; and the king never rode out upon any occasion of consequence, without this officer attending upon him." We, however, are warranted in stating, that falconry in France is now less practised even than in England. In some of the remote provinces we were informed that the sport was occasionally pursued, but that even there it was not popular, and was now discontinued.

Sect. II. *The History of British Falconry, or Hawking.*

2148. *The practice of falconry in England,* without doubt, commenced with the advent of some of the hostile northern intruders, but at what exact period is not apparent. Mr. Pennant is unable to detect any certain marks of it before Ethelbert the Saxon monarch, in the year 760, when this king wrote to Germany for a brace of falcons, "which would fly at cranes, and bring them to the ground, as there were few such in Kent." But other records prove that in the sixth century the Roman Britons had arrived at much dexterity in the choice and management of falcons and hawks. In the ninth century hawking appears to have become so popular with the Anglo-Saxons, that it was even imperative on every young man of condition to become a proficient in it. Previous to this, however, and as early as the middle of the eighth century, Winifred Boniface, archbishop of Mons, had presented to Ethelbert, king of Kent, one hawk and two falcons, which appear to have been so highly prized, that the said Boniface was requested by a king of the Mercians to send him also "two falcons that had been trained to kill cranes." "Alfred the Great," says Strutt, "is commended for his early proficiency in this, as well as in other, *fashionable* amusements: he is even said to have written a treatise upon the subject of hawking, but there is no such work at present in existence that can, with any degree of certainty, be traced to him. The pastime of hawking must, no doubt, at this period have been very generally followed, to call for the prohibition inserted in a *Chapter* granted to the Abbey of Abington, by Kenulph, king of the Mercians, which restrains all persons from carrying of hawks, and thereby trespassing upon the lands belonging to the monks who resided therein." The hawk was figured as an emblem of royalty; thus Harold the Second is seen in the Bayeux Tapestry, as represented in *fig.* 326. Innumerable are the authorities which prove also that the amusement of hawking continued to be a very fashionable one to the end of the Saxon era.

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HAROLD II. HAWKING.

2149. *The advent of the Danes,* and the assumption of the throne of England by William the Conqueror, a monarch passionately fond of field sports, tended greatly to the advancement of the hawking mania, as well as to increase the severity of the laws for the preservation of game of all kinds. The protecting enactments which referred to hawking alone during a few successive reigns, were almost innumerable; and they were equally arbitrary and severe. None but persons of the highest rank were even allowed to be in possession of a hawk, nor was it until the *Carta de Foresta* had been forced from King John by the "barons bold," that every free man was privileged to have eyeries of hawks, falcons, and eagles in his own woods, with heronries also. The oppressive nature of the laws relating to this sport, notwithstanding this concession, continued to be felt during several succeeding reigns. In the 34th of Edward the Third, it was made felony to steal a hawk: to take its eggs even in a person's own grounds, was punishable with imprisonment for a year and a day, besides subjecting the offender to a fine, at the king's pleasure. In later reigns, although the term of imprisonment was reduced to three months, the unfortunate culprit, ere he was liberated, was forced to find security against a repetition of his offence for seven years, or to lie in prison until he did so. As a refinement, also, in the legal severity of the enactments made for the protection of this sport, the following singular punishment was denounced for hawk stealing: — "*Si quis acceptorem alienum involare præsumpserit, aut sex uncias carnis acceptor ipse super testones comedat, aut certè, si noluerit, sex solidos illi cujus acceptor est, cogatur exsolvere, mulctæ autem nomine solidos duos.*" It was Edward the Third also. who, to protect the owners of hawks from the loss to which the capricious nature of these birds might subject them, issued an express mandate that any one finding a hawk of any species, was immediately to take it to the sheriff of the county, who was to cause a proclamation to be made in all the principal towns of such county, by which the owner becoming acquainted therewith might receive it back from the sheriff, on payment of the cost incurred for its maintenance. Should it not be claimed in four months, such hawk was to become the property of the finder, provided that he was of a proper rank; but if he was *ignoble* and *unqualified,* then the hawk was to remain in the keeping of the sheriff. The finder of a hawk attempting to secrete or appropriate it to his own use, was guilty of felony, and was actually punished as a felon.

2150. *During many centuries hawking appears to have been the all-absorbing pursuit,* not only in England, but equally so throughout Europe; indeed, it might be said that a hawking mania then raged universally. Kings and princes not only engaged in the actual chase itself, but they also voluntarily undertook the drudgery of training and feeding their hawks themselves. When employed in their most important offices, they were often seen with a hawk on their hand: indeed, they seldom moved without them, their hawks being apparently considered as much their familiar acquaintances and attendants, as pet dogs are with us of the present day. King Stephen also, like Harold, is almost invariably portrayed with this favourite bird resting on his hand. Even Archbishop Becket could not go to the French court on an embassy without his hawks and falconers. Few persons of high rank ever travelled without them, and they formed part of the equipage of every man of condition, whenever he moved from place to place; nor would a true and valiant knight part with his hawk even to procure his own liberty when taken prisoner, as though in losing his hawk he also lost his honour. Edward the Third, according to Froissart, had with him, when he invaded France, thirty falconers on horseback, who had the charge of his falcons. In fact, the hawk in these times might be truly said to be the *rara avis in terris.*

2151. *The gentle sex in these times,* we are led to believe, were equally affected with the hawking mania as the gentlemen, and it would appear to have been as unfashionable for a lady of those days, as for a knight, to be unaccompanied by a hawk. Thus, in the *Lay of the Last Minstrel,* canto vi. we find —

> " The ladye by the altar stood,
> Of sable velvet her array,
> And on her head a crimson hood,
> With pearls embroidered and entwined,
> Guarded with gold, with ermine lined,
> A merlin sat upon her wrist,
> Held by a leash of silken twist."

To this picture the poet appends the following note: — " A merlin, or sparrow-hawk, was actually carried by ladies of rank, as a falcon was, in times of peace, the constant attendant of a knight or baron. Godscroft relates, that when Mary of Lorraine was regent, she pressed the Earl of Angus to admit a royal garrison into his castle of Tantallon. To this he returned no direct answer; but, as if apostrophising a goshawk which sat on his wrist, and which he was feeding during the queen's speech, he exclaimed, ' The devil 's in this greedy glede, she will never be full.' Barclay complains of the common and indecent practice of bringing hawks and hounds into churches." Indeed, the extent of the hawking mania of these times seems to have had no bounds: thus Frederigo, the hero of Boccacio's ninth novel, although he had spent all his substance, refused to part with his favourite hawk; and when his mistress is importuned by his son to beg it of him, she replies, " how can I offer to take away from a gentleman *all the pleasure he has in life.*" The cost likewise of these birds corresponded with the anxiety to obtain them: a goshawk and a " tassel-hawk " appear to have been sold for 100 merks; and it is reported of Sir Thomas Monson, who lived in the reign of James I., that he had given 1000*l.* for one cast of peregrine falcons.

2152. *On the practice of hawking* as an especial attribute of nobility in former times, a writer in *The Penny Magazine* thus severely, though forcibly, expresses himself: — "The tokens and proofs of nobility or distinction, in different ages and countries, would form a very ludicrous list. During the Middle Ages a European showed his rank by having a hawk on his fist, as a Chinese mandarin, even of our own days, claims the honour due to learning by letting his finger-nails grow to an enormous length. A knight seldom stirred from his house without his falcon on his wrist, and his hound at his heels; and when his hunting and hawking were over for ever, if he did not die in the field of battle, one of the two animals was generally carved on his monument — the dog at his feet, or the falcon on his hand. At the first revival of the art of painting in Italy and Germany, and for more than two centuries after, a portrait was seldom executed without the painters introducing in it a falcon or a hawk. We have seen some old Italian frescoes, in which a long line of knights and ladies were painted, all in the same attitude, with full-front faces, and every one of them *fisting* a bird — thus looking more fiercely but as monstrously as farmer Flamborough's family picture in *The Vicar of Wakefield,* in which every individual held an orange. Sebastian Brandt, a German, the author of the Latin poem, *Stultifera Navis* (*The Ship of Fools*), complains that in his time (about the year 1485), the gentry were even used to take their hawks and hounds to church with them." (P. 391.)

2153. *The fascinations of hawking, we have said, engaged the ladies also,* with whom indeed it appears to have been as popular as it was with the men. Strutt introduces a print, copied from a manuscript of the fourteenth century, illustrative of the female passion for hawking, and further observes on the subject: — " The ladies not only accompanied the gentlemen in pursuit of this diversion, but often practised it by themselves; and, if we may believe a contemporary writer in the thirteenth century, they even excelled the men in knowledge and exercise of the art of falconry." (P. 26.) We cannot, however, commend their tastes, although we doubt not the ability, the activity, and the courage of females to be equal to this, and even more; but they, the females, shine most in gentler exercises, and rule most omnipotently when they appear the least masculine.

2154. *A proficiency in all manly exercises* constituted the principal points in the education of a gentleman, of whatever rank, of these times, and learning was held in little estimation. On grave authority it is told us, that it was enough for the sons of noblemen to wind their born and *carry their hawk fair,* and to leave study and learning to the meaner people. That ancient type of all excellence, *Sir Tristam,* is made by Spenser to boast —

> " Ne is there hawk which mantleth on her perch,
> Whether high tow'ring or accoasting low,
> But I the measure of her flight doe search,
> And all her prey and all her diet know."

This neglect of learning in these dark days, however, could not escape occasional censure; thus Cleland, who is said "to have re-echoed the *Basilicon Doron* of king James," observes " Ignorance is thought an essential mark of a nobleman by many. If a young child loveth not a hawke and a dogge while he sitteth on his nursel lap, it is a token, saie they, he degenerates." In Bishop Earle's character of a proud knight it is also said, " A hawk he esteems the true burden of nobility, and is exceeding ambitious to seem delighted in the sport, and to have his fist gloved with jesses." A bishop of Ely, in the reign of Edward III. would probably not have expressed himself thus sarcastically on the subject; for, as a proof of the devotion of this titled divine to this sport, he is said to have excommunicated certain persons for stealing a hawk, that was sitting on her perch in the cloisters of Bermondsey Abbey in Southwark. This notice confirms the account already noticed, that it was not altogether unusual for the favourite hawk to accompany its master to church; for it appears that this very hawk was stolen during divine service; and, what is more extraordinary, that it was the property of the bishop, but taken to the cloisters, as we should suppose, not by the bishop himself, but more probably by his servant.

2155. *The restrictive character of hawking in olden times* is well exemplified in the list which prescribes the hawks that in the reign of Henry VII. were allowed to be used by each person according to his rank. That presented to us in *The Booke of St. Alban's* is as follows: — " The eagle, the vulture, and the merloun, for an emperor; the ger-faulcon, and the tercel of the ger-faulcon for a king; the faulcon gentle and the tercel gentle for a prince; the faulcon of the rock for a duke; the faulcon peregrine for an earl; the bastard for a baron; the sacre and the sacret for a knight; the lanere and the laneret for an esquire; the marlyon for a lady; the hobby for a young man; the gos-hawk for a yeoman; the tercel for a poor man; the sparrow-hawk for a priest; the musket for a holy water clerk; the kesterel for a knave or servant." (*Strutt's Sports and Pastimes,* p. 32.) In Scotland also, as the legends bear testimony, falconry had its votaries, and that, for the encouragement and protection of the practice, it was enacted in the fifteenth century, " That nane destroy heronise wis for three zeris. Item, it is statute and ordanit that quahair ony heronis biggis or his nestis eggis or birdis, enduring the three zeris, with certificatioun, that it sal-be a punet of dictay. And they that beis conuict thairof, salt pay ten puds of vulau to the king and dictay to be takun be the justic clerkis thairupon. And quhair it beis understandin, that for the plesure of the kingis hienes ony persounnis keipis the said nestis, and suffers no persounies to destroy thame, they sall have thankis and favouris of our Souerane Lord, as effeiris, and ane vulaw to be geuin thairfor." An interesting proof of the popularity of falconry in this country is seen in the anecdote related of Sir Ralph Sadler that, while he had the unfortunate Mary under his care, he indulged his royal prisoner in the gratification of hawking the river. In Ireland likewise it was much practised and warmly protected, where, as early as 1481, it was enacted, " that whatsoever merchant shall carry any hawk out of Ireland, shall pay for every goshawk 13*s.* 4*d.*, for a tercel 6*s.* 8*d.*, for a falcon 10*s.*, and the poundage upon the same pain; and the person that bringeth any such hawk or hawks to the king, shall have a reasonable reward of the king, or else the same hawk or hawks for his labour.

2156. *The accession of the Tudors was equally marked with the love of hawking.* Henry VII. patronised it both by precept and example; and his successor, Henry VIII. who was even more attached to it, had nearly paid the forfeit of his life in pursuing it, " for on a time, as he followed his hawk on foot, he attempted to leap over a ditch near Hitchin with a pole, and the pole broke; so that, if one Edmund Moody, a footman, had not leaped into the water, and lift up his head, which was fast in the mud, he had been drowned." In the twenty-seventh year of his reign " this king issued a proclamation reciting his great desire to preserve the partridges, pheasants, and herons, from his palace at Westminster to St. Giles's-in-the-Fields, and from thence to Islington, Hampstead, Highgate, and Hornsey Park; and that if any person presume to kill any of these birds, they were to be imprisoned, and also to suffer such other punishment as to his serene highness should seem meet." In this reign also it became common to import hawks and herons from other countries, which paid fixed duties on being landed.

2157. *Queen Elizabeth was also a practical patroness of falconry.* The second parliament, held after her accession to the throne, passed an act which recites, that, " Whereas her majesty, as also the noblemen, gentlemen, and divers other persons, of great dominions and possessions, had breeding within their woods and grounds divers eyries of hawks of sundry kinds, to their great pleasure and commodity, that if hereafter any person shall unlawfully take any hawks, or their eggs, out of the woods or grounds of any persons, and be thereof convicted at the assizes or sessions, on indictment, bill, or information, at the suit of the king or of the party, he shall be imprisoned three months." This last statute concerning falconry (with the exception of a clause in 7 Jac. I. c. 10, which limits the time of hawking at pheasants and partridges) was also promulgated in the 23 Elizabeth, c. 10. and it is pleasing to remark, that it savours of an improvement in the spirit of the times, which should equalise protection among all classes. By this "no person was allowed to hawk in another man's corn, after it was eared, under pain of paying forty shillings, or being imprisoned a month." In Turberville's treatise on falconry is a representation of Elizabeth on horse-back on a hawking expedition (*fig.* 327.), and we have documentary evidences to prove that she was well inclined towards hawking, although not equally so as to coursing. Much as we ourselves admire coursing, we cannot but wonder at this preference, seeing that hawking had so long been a confirmed pursuit of kings, queens, and nobles.

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QUEEN ELIZABETH HAWKING.

2158. *James the First*, after the fashion of those days, was, while yet a boy, portrayed with a small hawk on his hand; but he does not seem to have devoted himself much to this sport; on the contrary, in his book of advice to his son Henry, Prince of Wales, after strongly recommending hunting with hounds and other manly exercises, he adds, "As for hawking I condemn it not, but I must praise it more sparingly, because it neither resembleth the warres so near as hunting doeth, in making a man hardie and skilfully ridden in all grounds, and is more uncertain and subject to mischances, and, which is the worst of all, is there through an extreme stirrer-up of the passions."

2159. *The decline of hawking*, we apprehend, may be dated from the middle of the seventeenth century, and we can hardly agree with Strutt that it was in its zenith during that epoch. We have just noted the pedant, James I. already treating of it coldly, which, in our opinion, was a strong sign of its approaching fate. Already, in the sixteenth century, it had been forbidden to hawk from Easter until the corn was reaped; and although Hentzner, who wrote his *Itinerary*, A.D. 1598, affirms that it was in his time generally pursued by the English nobility and gentry, yet we have every reason to suppose it was fast declining even then. Indeed, were not the natural changes worked by fashion, caprice, and love of novelty, sufficient to have effected this, the introduction of fire-arms must have done it, as soon as the practice of sporting with the musket had reached sufficient perfection to show how much more readily, and how a much wider range of warfare against birds and beasts of all kinds, might be effected by its means. The decline of hawking has not, however, taken place without many laments. A *black letter* enthusiast of much notoriety despondingly observes, that "The period is arrived, when our knowledge of the different species of birds is only obtained from the records of the naturalist; when the favourite *hawker* is almost a stranger to the hand; and the diversion, instead of taking precedence of hunting and angling, to which, from its antiquity, it seems entitled, is without sufficient advocates to obtain it even a third position among our domestic sports and pastimes." Had this antiquarian, however, lived but a few years longer, he would have witnessed strong symptoms of its revival. One more sanguine has remarked on the curious coincidence between these modern hawking drawings and the circumstance that many, even modern, leases in Surrey, Norfolk, Suffolk, and some other counties, are made with clauses retaining a right for the landlord and his friends and attendants to *hawk*, as well as to hunt, fish, and fowl, at his pleasure. We, however, suppose this to have been done in compliance with ancient usage, rather than from any decided expectation of the necessity of any such reservation as regards hawking; the revival of which we, however, think by no means unlikely.

2160. *The British practice of hawking in modern times* has been confined within narrow limits. Among its votaries may be mentioned the present Duke of Leeds, and the late Duke of St. Albans, who, as Hereditary Grand Falconer of England, used to fly his hawks upon the Brighton Downs, during his temporary residence at that fashionable watering-place. The locality was very favourable to the sport, and attracted a considerable concourse of spectators, though whether to look at the Duke or the hawks is uncertain. The Duke of Leeds is a member of the Loo Hawking Club in Holland; and among other British hawkers of past and present times may be mentioned Lord Orford, Colonel Thornton, Sir John Sebright, Mr. Fleming of Barochan Tower, Renfrewshire, Sir John Maxwell, Bart., of Pollock, the late Hon. Charles Wortley, Mr. Newcombe, and Mr. Brodrick, one of the authors of the elegant work called *Falconry in the British Isles*, of which he is also the able illustrator.

2161. *The bibliography of hawking*, were we able to offer a complete list of the works written on it, would form a very proper wind-up to our hawking sketch; but the attempt even at the present moment would consume more of our time than we can spare. We may also add that the authentic sources of information are still fewer than the writers, as it was in early as well as in later times the fashion to borrow, re-dress, and exhibit as new, the information of times long past. Until the twelfth century we indeed find few written instructions on hawking, from which time however, notwithstanding it had been practised long before, it seems to have attracted the attention of the learned, some few of whom have written on it; and their manuscriptal notices serve to fill up the interval which occurred ere printing was happily invented. One of these early productions was that of Demetrius, who, joining piety, or otherwise fanaticism, with his sporting attachments, directs that every man should say his prayers before he goes out to hawk. Another treatise equally extraordinary on this subject, was that attributed to the Lady Juliana Berners, daughter of Richard Berners, of Berners Roding, and sister of Lord Berners, born at Roding in Essex, about the beginning of the fifteenth century. She has been celebrated by various authors as very learned; and doubtless had the best education that could be obtained in that age, as she was appointed prioress of Sopewell Nunnery, near St. Alban's, about 1460, or rather earlier. She was very beautiful, and fond of masculine exercises, such as hunting, hawking, &c. writing treatises on these subjects, as well as upon heraldry, which were so popular, that they were published in the very infancy of printing. Her treatise on hunting is written in rhyme, and affords strong evidence of the barbarity of that age. Her work on heraldry begins with the following piece of information: — "Of the offspring of the gentilman Jafeth (she certainly meant Shem), came Habraham, Moyses, Aron, and the profettys; and also the kyngs of the right lyne of Mary, of whom that gentilman Jhesus was borne, very God and man; after his manhode kynge of the land of Jude and of Jeus, gentilman of his modre Mary, prince of cote armure," &c. The treatise on hawking in this extraordinary work, we should think, from current circumstances, was the veritable production of this learned female, and was not, as supposed by Mr. Hazlewood, the compilation of a monk from the hawking MSS. deposited in the abbey; for we need not inform our readers, that in those times it was common to make those sacred places the sanctuary of learning as well as of religion.

2162. *In* 1595 *the celebrated bookmaker, Gervase Markham*, produced his *Gentleman's Academie*, which, as justly observed by Mr. Hazlewood, is little more than a garbling of *The Booke of St. Alban's*; nor is this gentleman wide of the mark when he asserts, that "Markham wrote better on horsemanship and agriculture than when he garbled."

2163. *De Arte Venandi cum Avibus*, which was printed at Augsburg in the year 1596, was also taken from an early MS. the author unknown. Frederic the Second appears to have been the means of bringing this work forward; and as he appears to have been himself a zealous falconer, it without doubt received some valuable additions from his hands.

2164. *In* 1575 *Turberville's well known treatise on hawking appeared.* This work was principally translated from *La Venerie et Falconrie*, by Jacques de Fouilloux, 1535, as Turberville's *Book of Hunting* was derived from Fouilloux's writings on that subject. But his more accredited work, known as *The Booke of Falconrie, or Hawking*, which appeared in 1611, proved by its contents that Turberville had indeed been a practical falconer, as will be evinced by some future extracts from the work.

2165. *The Countrey Contentments* of Markham, published in London, 1615, exhibited rather more originality than his former work. In this latter he is very warm in the praise of hawking, which he calls "a most princely and serious delight." It is Gervase who is very properly urgent in his directions as to the means of familiarising hawks to objects and noises, recommending, with much acuteness, that they be taken to the blacksmith's forge, there to hear the clattering of hammers, and to face the glitterings of fires; and from hence a similar recommendation has passed into other hawk-training instructions.

2166. *Latham also in* 1615, as we believe, presented the first part of his *Faulconry*, or *The Faulcon's Lure*, and in 1618 the second part appeared. There were also two reprints of it, one in 1633 and another in 1638. Mr. Hazlewood, to whom the public are indebted for many hawking notices, if we remember rightly, says nothing of the merits of this work: but from other sources we learn that it was long considered as the best *vademecum* then known. It will be seen that we have heretofore had occasion to quote it as an authority.

2167. *Bert's approved Treatise of Hawks and Hawking* appeared in 1619, and its author seems to have been a very zealot in the sport; indeed, much the greater part of his time appears to have been spent with his hawks. According to him, the qualifications necessary to constitute a complete falconer are, "An able body, a quick spirit, and, most of all, an earnest love and delight thereunto; to such a man a hawk will quickly teach wisdom, but of him that wanteth wit she will make a fool, and of a dull spirit a true pack-horse." (*Penny Magazine* for 1834, p. 411.) He tells us also that such patience is required in reclaiming of hawks, that he has "heard of some who watched and kept their hawks awake seven nights and as many days, and yet would they be wild, rammish, and disorderly." He must himself have been very successful as a trainer, for he informs us he had sold a single goshawk and tercel of his own training for 100 merks.

2168. *In this year* (1678) the celebrated Ray published *A Summary of Falconry*, "collected from several authors." The descriptions of hawks were by Willoughby. Mr. Hazlewood very justly calls this a finished performance, presenting, as it does, a copious and correct catalogue of the terms of art used in this sport, together with full instructions for the management and reclaiming of hawks, and for the remedial treatment of their diseases.

2169. *The year* 1686 *ushered into notice Blome's Gentleman's Recreations*, among which the *Treatise on Hawking* stands conspicuous as a valuable summary of all that was known at that time. Blome in his introduction informs us, that he was principally indebted for the subject-matter of his hawking to Sir Ralph Dutton of Sherbourne, in Gloucestershire, and to George Russel of Abbotsbury Aston, in Buckinghamshire, Esq. Sergeant of his Majesty's Hawks, both experienced falconers. We have elsewhere expressed our opinion of the merits of Blome as a writer on falconry, and confirmed it by the frequency of our quotations from him. The fact that two such experienced falconers as those he notices, as having assisted him in forming the details of his work, stamps it with high value.

2170. *This year* (1773) *gave birth to an extraordinary production*, entitled, *A Treatise of Modern Faulconry*, by James Campbell, Esq. It is prefaced by "An Account from Authors not generally known, of the Practice of Faulconry in certain remote Times and Countries" Mr. Hazlewood's account of the birth, parentage, and ushering into life of this unique performance, is an amusing and somewhat romantic one. Campbell, having submitted what he had written on the practice of falconry to the inspection of the Rev. A. Gillies, was told that this was not sufficient, and that an historical account of hawking must be prefixed, which the rev. gentleman offered to supply. Mr. Hazlewood seems to hint that this offer was made with somewhat of an invidious intention; for instead of what was professed, the preface is evidently written "in ridicule of a work on the *Origin and Progress of Language*, then newly published;" and consequently, instead of a true history of the sport, there is prefixed a fabulous account of hawking by the Emperor Aram Vombanboberus with Trebezonian eagles, on the authority of MSS. in the Grand Sultan's library. This, as might be supposed, prevented any extensive circulation of the work, though its practical instructions were good. The most modern, and we believe we may also say, the most practical and useful work on the subject, is the one already mentioned (par. 2160.), *Falconry in the British Isles*, by Messrs. Salvin and Brodrick, both experienced hawkers, published by Van Voorst in 1855. Mr. Brodrick, we may observe, is a nephew of Mr. Selby, the celebrated ornithologist.

CHAP. V.

THE PRACTICE OF FALCONRY, OR HAWKING.

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OLDEN HAWKING PARTY.

2171. *To treat satisfactorily of the practice of hawking*, we must first glance at the natural history of the various feathered agents employed in it. From viewing them in their wild state, we must proceed to inquire into the means employed in reclaiming them, and fitting them for the practice of this once popular sport. Before, however, we proceed further with this subject, we deprecate the severity of criticism on our method of treating it. We are indeed, from the very nature of this sport of by-gone days, beset with many difficulties. The rust of time has thrown a veil over its olden practices, and in the records which should have described them, fable often takes the place of fact. A nomenclature, arbitrary and yet changeable, also tends further to bewilder us, and to frustrate our attempts at arranging and collecting the disgregated notices left by former writers into so correct or so clear a summary as we could have wished. We fear that these impediments have forced us into redundancy and repetition, and sometimes into statements apparently, but not really, contradictory to each other. When, however, the difficulties which surrounded us are candidly considered, we hope our humble efforts to rescue this aristocratical sport from oblivion may be received with favour, and, at least, that they may excite a more successful research by some more talented individual; in furtherance of which we conclude with Horace —

> " Si quid novisti rectius istis
> Candidus imperti; si non, his utere mecum."

Having thus stated some difficulties attendant on the subject, we must not forget to notice such aids of modern date as have offered themselves to our notice. Among these, the compendious *Vademecum* of Sir John Sebright stands foremost, of which it will be seen we have availed ourselves. Some foreign writers of repute also have lent us their aid towards making our compilation, as we would hope, somewhat instructive to the young falconer and interesting to sporting readers generally. To admirers of falconry we need offer no apology for entering so much at large into the history and individual examination of the several falcons and hawks usually employed therein, nor into the various manipulations necessary to *train* these stubborn subjects to perfect obedience.

2172. *We do not propose to limit our inquiries to the hawking practices of the present day*, nor to confine our descriptions to the falcons and hawks now engaged therein, although, if such were our intention, our task would be comparatively easy. We, on the contrary, propose to ourselves to enter into a much wider field of observation, and to depict the falconry of bygone days, when it was the all-prevailing pursuit of persons of every rank; and to prove that in these times, to be a proficient in it was the strongest proof of high breeding, and the surest way to gain the envy of the men and the admiration of the women. In doing this a wide field of description must be entered on; nor must we shrink from attempting to present an account, both systematic and popular, of each of the numerous falcons, hawks, &c. that can be engaged therein. We may premise that we cannot but look with admiration at these aërial sportings of our forefathers, who, without the assistance of fire-arms, contrived nevertheless to bring down the winged soarers from heights which no modern projectiles could reach. Neither is our view confined to the amusement to be derived from detailing what has been done; but, regarding the ever varying caprices of man, and the signs of the times, we look forward to the period when this sport shall again revive; and, like the phœnix, arise with renewed splendour from its former ashes. We will not assert that such will be the case, but should it happen, which we consider to be very likely, then the knowledge of our sporting public, its enterprise, and the means possessed by it, will make a display more effective than that which has heretofore appeared. But neither can the descriptions we have to present on the olden practices, nor the instructions we would offer in aid of a revival of the sport, be appreciated without a sufficient knowledge of the hawking birds. It was by an acquaintance with their natures and properties that the ancients became such proficients in falconry, as to force every one of the rapacious birds into their service, and engage them readily to do their bidding. If in the dark ages these *feræ naturæ* were thus understood, how much more is it expected of us of the present day, to whom the volume of instruction is so widely open, that we should be intimately acquainted with the matters and properties of the various living forms around us! It is true that in the practice of falconry at the present time, the falcons and hawks which are employed are few in number: it might almost be said, that the list is confined to the gerfalcon, the peregrine or slight falcon, and the goshawk, a few falconers, and a few only, employing the sparrow-hawk, and still fewer the hobby or merlin. But, as already observed, the old hawking treatises notice not only all these but many others also; we should therefore be wanting in our description, not only of what has been done, but as well of what may be done again, if we did not present a picture, however short, both popular and systematic, of each individual of the important family of the rapacious birds: for our own opinion is, that there are few, if any of them, but what the industry or caprice of man has trained to falconry; and, consequently, what has been once done may be done again. When we make this general assertion, we wish to be understood, that we except the true vultures, of whose application to the purposes of the falconer we have but very indistinct notices. With this exception, we repeat, there is not one that has not really been trained to fly at some animal. Eagles of several kinds, we are told, have been employed against the roebuck, the antelope, the wolf, and other formidable antagonists; and even some vulturine types, if the accounts of travellers be correct, have been made to act the part of fish-hawks. We have premised thus much, that we may not bury our subject within limits disgraceful to its real character; for we differ *in toto* from Linnæus, who, by way of note to his specific character of the *Falco Gentilis*, adds, — "*Ars capiendi falcones, columba, et lanio, instituendi, venandi gazellas, ardeas, aviculas, &c. propriis artificibus commissa, in luxuriam magnatum, ridenda etiam a stulto.*"

Sect. 1. *Accipitres, or Birds of Prey generally.*

2173. *The rank of the Accipitres, or birds of prey*, places them at the head of every systematic catalogue. Linnæus divides them into four genera, as vultures, falcons, owls, and shrikes. Cuvier classes them as diurnal and nocturnal birds of prey; but which, with submission to this great authority, is less satisfactory: for, while some of the former prey by twilight, most of the latter may be seen doing the same long before dark. How few strollers in woods and groves are there but must have seen the common owl hawking for mice, &c. in the middle of a gloomy day. Bewick's comprehensive division of raptorial birds into falcons and owls is less objectionable, although by no means sufficiently illustrative. Dr. Fleming also, who professes to give British animals only, divides birds of prey into *Diurnæ* (hawks), and *Nocturnæ* (owls). We cannot pass by this opportunity of observing on the variable nomenclature used by naturalists. Here are instances of two authorities, much read and often quoted, who, though their meaning be precisely the same, make use of two different terms, which, however the initiated naturalist may understand them as synonymous, the uninitiated is very liable to stumble at. This is only one of many instances which we may have to quote of the difficulties with which the young falconer, and also the young naturalist, has to encounter, for want of a fixed nomenclature. At the present moment we have an instance of this incertitude, in the familiar and indiscriminate use of the terms falcon and hawk, which are so frequently employed the one for the other. It is not uncommon also, under this want of precision, when detailing the divisions of raptorial birds, to omit the shrikes (*Lanius* Linn.), which Linnæus himself introduces, and with propriety, as having many of the characters of the *Falconidæ*, and as being also of some importance as a hawking agent.

2174. "*The rapacious order of birds*," Mr. Swainson observes, "is composed of only three families that are now in existence, whose prominent features are, perhaps, more decided than those of any other groups in ornithology: these are the vultures, the falcons, and the owls, which, it is unnecessary to say, are so strongly marked as to be familiar to every one. It has been customary with some systematists to divide this order into two groups, from the period of their feeding; the two former being diurnal, and the latter nocturnal: but this explains little. A much clearer, and certainly a more correct, idea will be formed of their true nature, by considering them with reference to their attributes, and their natural affinities." (*Cabinet Cyclopædia*, vol. lxxxiii. p. 280.)

2175. *The employment of birds of prey in falconry* forming the occasion of our treating of them, it will be convenient that we pursue the order of their description rather in a popular than a strictly systematic method. The diurnal, or day-preying birds we shall examine in the order of vultures, eagles, falcons, hawks, kites, buzzards, and shrikes. The nocturnal, or night-preying birds, we shall glance at as being not only an interesting family to every observer of nature, but as being immediately connected with the falconer's sport, as we shall show. A correct description, both systematic and popular, of each individual bird of prey, would be of great importance to such practical falconers as extend their views to the natural history of the objects they employ in their sportings; and who, not content with the mere possession of the birds, would further wish to know what were their ornithological characters, and what rank each held among his congeners. But unfortunately, even in the present advanced state of natural history, we are much in the dark with regard to their external characters generally, but more particularly with the distinctive markings of the plumage of these birds, in consequence of the great mutations which take place in that of each individual at different periods of its age. "Few birds," says Mr. Griffith, "exhibit so many changes on the type in plumage as the diurnal *Accipitres*, from their birth to advanced age. Accordingly, we find it extremely difficult to determine the species, and even the sexes with precision, during the first two years, except among a few of them, in regard to size, in consequence of the similarity in their liveries, both of male and female. In the young, the colours are less pure, and the spots more prominent and numerous before the first moulting, and often before the second. After this last, the tints grow purer, the spots and streaks begin to change; and this takes place more and more in proportion as the bird grows older. In certain species these spots and streaks undergo so great a change in the course of time, that scarcely any vestige remains of them in the old males, which has often occasioned an erroneous distinction of species. Thus we find the vulture of Malta, passing from brown to white, becomes the vulture of Norway, and the little vulture of Buffon. The monachus ends by being the black vulture, quitting its grey and brown plumage to assume a very dark brown. The fulvous vulture, reddish in its youth, becomes successively grey, ashen, and of a uniform grey-white in advanced age." (*An. King.* vol. vi. p. 157.)

2176. *A complete monograph even of the European raptorial birds,* therefore, it is not in our power to offer with any degree of confidence; and although we have waded through authorities innumerable, we have only found confusion worse confounded in endeavouring to identify the individual of one author by the characters attributed to it by another, although, probably, each drew a true portrait; but it was done at a different period of age. The annual changes which take place in the plumage of the accipitrine group through the term of their natural life, but particularly of those which occur between their first and seventh years, must be well understood before we can venture authoritatively on any individual description.

SUBSECT. 1. *The Vulture.*

2177. *The vultures* (*Vultur* Linn.), as the first genus of the order *Accipitres* of Linnæus, will occupy little of our attention. These gigantic birds are essentially extra European, two species only being found in Europe, *V. fulvus* and *V. cinereus*, little known as hawkers, one sub-variety only having been employed, we believe, on some particular occasions, as a fish-hawk. The Cuvierian characters of the vulture are, "eyes close to the head, the tarsi reticulated, that is, covered with small scales; the beak long, bent only at the end; and a part, more or less, of the head, or even the neck, denuded of feathers (*fig.* 329.). The power of the talons of vultures does not correspond with their size; and indeed they appear to prefer to make use of the beak, and their wings are so long, that they hold them half extended when they walk. In disposition they are cowardly birds, and live more commonly on dead carcasses than on living prey. After eating, their crop forms a large protuberance, under the *furca*; a fetid secretion runs from the nose, and they are reduced, during the digesting of a meal, almost to a state of stupidity." It has been too common to confound the eagle family with the vultures, but the naked state of the head and neck of the latter would alone sufficiently distinguish them. The eyes of the vulture are on a level with the surface of the head, while those of the eagle are retracted within the orbits: the claws of the eagle, likewise, are almost semicircular; whereas in the vulture they are irregularly flattened. In the port, also, of the two tribes, it is agreed by all naturalists and travellers, that a marked difference is observable; that of the vulture on the ground presenting nothing of the erect and noble bearing of the eagle. Deficient in individual enterprise, vultures live gregariously for protection, and only attack living animals in numbers; while all their habits partake of one character, that of a disgusting grossness. In feeding their young, they do not carry the food in their bills or talons, but disgorge it piecemeal from their crops into the mouths of the young ones. Although the condor tribe all attain a great size, so as to stand upwards of three feet in height, and sometimes to reach to eleven in the *envergure*, yet few, if any, extend beyond these dimensions. Mythological fiction and the gullibility of travellers, it is true, have invested the condor with a monstrosity of size and power equal to the conveying of an elephant into the air. Such was the fabled eagle-roc of Marco Polo, said to inhabit the island south of Madagascar, but which is now known to exist only in the imagination of the narrator. Mr. Swainson observes, that "The filthiness of the food of vultures, which is principally carrion, imparts to their whole body a fetid odour, which nature has rendered a means of defence; for, if seized during the torpid inactivity which succeeds their meals, they immediately disgorge the nauseous contents of their crop over the luckless captor, who is thus, by a sudden impulse of loathing, obliged to relinquish his hold. But that those parts of the bird which come in contact with its offensive food should not be soiled and matted together, the whole of the head (and frequently a great part of the neck) is entirely destitute of feathers; while those on the rest of the body have a certain elasticity and glossiness, which enables the bird, by a few sudden shakes, to cleanse itself at once from any fragments that remain upon its plumage. Can we fail to admire the provident care of nature in this instance of vulturine specialty? The vultures are, indeed, the great scavengers of nature in hot latitudes, where putrefaction is extremely rapid, and most injurious to health; and the disposition of their numbers appears to be regulated by the number of deaths which are likely to occur around them, some spots being more pestilential than others, and some also more likely to abound with casualties than others. We are told that they are sparingly scattered over the south of Europe. In Egypt they are said to be more numerous; and that, in tropical America, although the species are fewer, the individuals are much more plentiful. No sooner is an animal dead, than its carcass is surrounded by numbers of these birds, who suddenly appear coming from all quarters, in situations where not one had just before been seen." (See Mr. Swainson's *Nat. Hist. of Birds*, vol. i. p. 289.)

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THE VULTURE.

Subsect. 2. *The Eagle.*

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GOLDEN EAGLE.

2178. *The eagle* (*Aquila*), Colonel Montague says, differs but little from the true falcon except in size (*fig.* 330.). We think, however, this eminent naturalist, when he thus wrote, must have overlooked one very distinctive character which separates these birds. We allude to the form and markings of the beak, which are in falcons more distinctly fitted for rapacity than the same organ in the eagle, as will be more fully illustrated hereafter. In the mean time we beg to quote what Mr. Swainson says on the subject: — "The upper mandible of the bill of the eagle, as seen in the figure, presents little or no indication, either of the acute tooth of the falcons, or the prominent but rounder lobe of the hawks." We may add to this, that it is altogether longer, and does not incurvate until it has extended a considerable distance from the base; and, as observed by Mr. Bennett, "We can distinguish the eagle from the falcon by the greater comparative length of its quill feathers, the fourth being almost uniformly the most elongated of the series, and the first being extremely short; and by the equal development of those which compose the tail. Thus the actual existence of the eagles, as a division from among the falcons of Linnæus, which has been by some regarded as a mere conventional assumption, grafted on the popular nomenclature, is established upon sound zoological principles." Nevertheless, we cannot but feel concerned when we are forced, in accordance with systematic classification, to place this majestic bird among the *ignobles.* The ancients, however, paid the eagle just homage, and consecrated him to Jupiter. He was known by them as "the celestial bird, the messenger of the heathen deities, and to him were committed the thunderbolts of the gods."

2179. *Eagles, beyond all doubt, have been trained to the pursuit of game after the manner of falcons*, as proved by our notices of the *Expeditions and Falconry of the Khans of Tartary*, p. 18. 640. We also believe that they are so employed to the present day in Persia, and in some parts of India; but a certain intractability in their natures, not to be easily overcome, has prevented their being so used by Europeans. We are not apprised of the exact methods pursued, but are told that the Kirghees, who inhabit the north-eastern shores of the Caspian Sea, hunt deer and other large animals with eagles at the present time. Hernandez likewise informs us, that the harpy eagle, in particular, was very commonly trained to hawk, and that as readily as any other of the accipitrine tribe. These varied notices, therefore, entirely contradict the dictum of the St. Alban's sporting abbess, who observed that "the eagle, the vulture, and the merloun, be not enlured nor reclaimed, because they be too ponderous to the *perch portatif*, i. e. being too heavy to be carried on the fist. Had this renowned lady been informed of the tractability of the hunting leopard, which springs on the back of the horse behind the rider, and so accompanies him to the hunting field to assist in securing deer, she would not have been thus sceptical on the necessity of the *perch portatif* to insure the voluntary services of the eagle.

2180. *The eagle is characterised by having the tarsi feathered to the base*, and by wings as long as the tail. The tarsi of some of the genus *Aquila*, however, are not thus extensively covered, although the wing feathers of most, if not of all the group reach to the extremity of the tail, thus giving to them one of the leading zoological characters of nobility, although, from the formation of the beak, such is usually denied to them by the practical falconer, as well as the critical naturalist. The flight of the eagle is, however, lofty and rapid, his strength and ferocity are great, and his temper sullen and intractable. The zoological character of the eagle will be further noticed in our description of the bills of falcons and hawks. The eagle is strictly carnivorous, and the structure of his assimilating organs precludes the use of any other food; consequently he does not violate nature by his predacious habits. From the capacity of the crop, being to that of the ventricle as thirty-eight to three, Spallanzani was led to a physiological assumption, that the eagle was capable of enduring without manifest injury a fast that would destroy any other known bird. This has been proved to be the case, as it is on record that one has lived without any nourishment for forty days, at the expiration of which time it was killed. The eagle can also abstain from fluid nourishment; it is, however, an error to suppose he does not drink at all, for he has been seen to do it; but he can refrain from liquids in the same ratio with his abstinence from solid food.

2181. *The golden eagle* (*Aquila Chrysaëtos*, Savigny) is thus characterised by Dr. Fleming: — "Tarsi feathered to the toes; the last joints of all the toes furnished with only three scales; inhabits mountainous districts; breeds in Orkney; length thirty-six, breadth eighty-eight inches; weight about twelve pounds; bill dusky; irides brown; cere and feet yellow; the acuminated feathers on the head and neck bright rust colour, the rest of the plumage dusky brown; the feathers on the thighs and legs of a light colour; tail rounded, longer than the wings, of a deep grey, clouded with dark brown, a band of the latter occurring at the extremity; breeds in high precipices; eggs two or three, dusky white, with reddish blotches. The plumage of the young is darker, and the basal half of the tail is white. In this state it is the *Chrysaëtos cauda annulo albo cincta* of Will., p. 28.; *Falco fulvus* of Linn., *Syst. Nat.* i. 125.; or the ringtail eagle or black eagle of Penn., *Brit. Zool.* i. 165. In the opinion of some the ringtail is considered as a distinct species; but the facts stated by Temminck and Selby demonstrate its connection with the golden eagle. (See *Wern. Mem.* vol. iv. pp. 428. 434.) Preys on sheep and deer." (P. 52.) Mr. Bennett observes, of the golden eagle particularly, and the individuals of the genus generally, that "they change their plumage to such an extent as they advance in age, that their various stages of growth have been repeatedly described as distinct species. Thus the golden eagle appears in the compilations of Gmelin, and other naturalists of the same stamp, under no fewer than four, or even five, different denominations." (P. 147.) This noble bird measures three feet in length, and the envergure of its wings reaches to the extent of seven feet in the adult state. Mr. Macgillivray, whose authority on these *Rapaces* we should consider as indisputable, describes the proportions of the male bird as follows: — "Length, two feet nine inches; extent of wings, six feet; bill along the back, two inches and three-quarters, to the tip of lower mandible two and a half; tarsus, three and three-quarters; middle toe and claw, four and a quarter; hind claw, two and a quarter." Of the female, as follows: — "Length, three feet; extent of wings, seven; bill, two inches seven-eighths, one and a quarter deep before the cere; tarsus, three and three-quarters; middle toe and claw, four and a quarter; hind claw, two and a quarter; length of nostril, three-eighths." (P. 91.)

2182. *The geographical distribution of golden eagles is very extensive:* they are found on all the mountain chains of Europe, in Asia Minor, Tartary, and Siberia; they are seen in the northern parts of Africa and America; nor are they unfrequent in Europe, particularly in Russia, Norway, Sweden, as well as the Pyrenees and the Alps. Mr. Pennant says, "it is frequent in Scotland;" and adds, "that it is very destructive to deer, which it will seize between the horns, and, by incessantly beating it with its wings, soon makes a prey of the harassed animal; that it builds in cliffs of rocks near the deer forests, and makes great havoc not only amongst them, but also the white hares and ptarmigans." Willoughby gives an account "of the nest of this species, found in the woodlands near the river Derwent, in the Peak of Derbyshire." He says "it was made of large sticks, lined with two layers of rushes, between which was one of heath; that in it was one young and an addled egg, and by them a lamb, a hare, and three heath poults." Colonel Montague observes, however, that the golden eagle "does not appear to be so plentiful, even in North Britain, as the sea-eagle, and probably is confined to the Highlands of Scotland, where it usually breeds in the most inaccessible parts of the mountainous cliffs; sometimes on that stupendous mountain, so well known to all the northern tourists, Ben Lomond. Upon the summit of that mountain an eagle's egg was found amongst the rocks, without any nest, supposed to belong to this species, and which must have been prematurely dropped. As we were sporting in the neighbourhood of Ben Lomond, on the summit of the lesser mountains that form its base, a grouse (*Tetrao Scoticus*) was wounded, and flew with difficulty eighty or a hundred paces. An eagle, apparently of this species, perceiving the laborious flight of the grouse, descended with rapid wing from the adjacent lofty cliffs before our guns were reloaded, and, in defiance of the shouts made to deter him, carried off his prey. In another part of the western Highlands of Scotland, we had an opportunity of witnessing the powers of the flight of this bird in pursuit of its quarry. An old blackcock (*Tetrao tetrix*) was sprung, and was instantly pursued by the eagle (who must have been on a neighbouring rock unperceived) across the glen, the breadth of which was at least two miles. The eagle made several unsuccessful pounces, but as there was no cover and the bird large, it probably fell a victim in the end." (*Ornithological Dictionary*, p. 209.) Mr. Macgillivray says it is often seen in the maritime cliffs of the Hebrides, but that it appears to prefer inland precipices for breeding on, as the central ranges of the Grampians, the rocky mountains of the western and northern parts of the middle division of Scotland, the Hebrides, the Orkney, and Shetland islands.

2183. "*The nest of the golden eagle*," Mr. Bennett observes, "forms a solid platform, of several feet in width, built of sticks and branches of trees, interlaced with smaller twigs, and covered with layers of reeds or heath. The female seldom lays more than two or three eggs, of a dirty white, spotted with red. Their food consists almost solely of living victims; and foxes, lambs, fawns, and birds of various kinds, form their most usual prey; indeed, it has been said that they sometimes carry off infants; and Anderson asserts that in Iceland they have been known even to seize upon children of four or five years old: but there seems to be great exaggeration, or rather much of positive invention, in all the stories of this description with which we have met. They sometimes attain a very great age; Klein mentions one that died at Vienna in 1719, after having been confined there for upwards of a century." (*Zoological Gardens*, vol. ii. p. 149.) Mr. Macgillivray says it lays two eggs of a yellowish tint, with pale purplish dots; the young are fledged about the end of July, and soon after coming abroad are forced from the parents to shift for themselves. Thomson seems to have been aware of this early separation of the parents from their young: —

> "High from the summit of a craggy cliff,
> Hung o'er the deep, such as amazing frowns
> On utmost Thilda's shore, whose lonely race
> Resign the setting sun to Indian worlds,
> The royal eagle draws his vigorous young,
> Strong-pounced, and ardent with paternal fire;
> Now fit to raise a kingdom of their own,
> He drives them from his fort, the tow'ring seat
> For ages of his empire; which in peace
> Unstained he holds, while many a league to sea
> He wings his course, and preys in distant isles."
>
> *Thomson's Seasons.*

2184. *Intractability of temper is not constant in the great eagle.* The French journal for the year 1807 gave the following interesting account of an eagle of this kind, then in the menagerie of the Garden of Plants in Paris: — "There has been for some time in the Garden of Plants an eagle, which her majesty the empress sent thither, and which is as much distinguished by his beauty as by a silver ring which he carries in one of his talons. It was originally domesticated with an English gamecock, which has at last served him for food; it is not known, however, whether the death of the gamecock was produced by his own fierceness, by some movement of anger, or merely by the hunger of the eagle. The following is the history of this eagle since he lost his liberty: — He was taken in the forest of Fontainbleau, in a trap set for foxes, the spring of which broke his claw; his cure was tedious, and attended by a painful operation, which was borne by the eagle with a patience not often exceeded in man. During the operation his head only was at liberty, and of this he did not avail himself to oppose the dressing of the wound, from which several splinters were taken; nor did he attempt to disturb the apparatus which the fracture required. Swathed in a napkin, and laid on one side, he has passed the entire night upon straw without the least motion. The next day, when all the bandages were unwrapped, he lodged himself upon a screen, where he remained twelve entire hours without once resting on his unsound foot. During all this time he made no attempt to escape, though the windows were open Yet he rejected all nourishment until the thirteenth day of his captivity, when he tried his appetite upon a rabbit which had been given to him. He seized it with his uninjured claw, and killed it with a stroke of his beak, between the head and the first vertebra of the neck. After having devoured it he resumed his usual place upon the screen, from whence he stirred no more until the twenty-first day after his accident. Then he began to try the wounded limb; and without in the least deranging the ligature by which it was bound, he has regained the use of it by moderate and reasonable exercise. This interesting creature has passed three months in the room of the servant who attended him. As soon as the fire was lighted he came up to it, and suffered himself to be caressed; at bedtime he mounted his screen, as close as possible to the attendant's bed, but removed to the opposite extremity as soon as the lamp went out. Confidence in his own powers appeared to exempt him from any kind of distrust. It is impossible to show more resignation, more courage, and one might almost be tempted to say, more reason, than was exhibited by this eagle during the long continuance of his illness. He is of the most beautiful kind, and does not appear to experience the least weakness in consequence of the accident which robbed him of his liberty." (*Penny Magazine* for 1835.) The general character of this bird, however, is not marked with much tractability; on the contrary, Mr. Macgillivray says, it is more ferocious in captivity than the sea-eagle, and that it cannot be trusted even by those who supply it with food. Mr. Selby also, who had two of them in his possession for some years, observed no diminution of ferocity during the time. The golden eagle appears gifted with the same capacity of abstinence which marks the other members of the genus *Aquila*. The following anecdotes, extracted from Mr. Macgillivray's interesting work on rapacious birds lately published, are too much to our purpose to omit, emanating as they do from so respectable and accredited a source; neither can we proceed without strongly recommending the work to the diligent perusal of both the naturalist and sportsman. Mr. Macgillivray says, "For the following information respecting eagles, I am indebted to Mr. Alexander G. Macgillivray, who had the kindness to procure it from his brother Mr. Robert Macgillivray, a native of Sutherland, in which district these birds are still pretty numerous. Both species occur there; and as they are not distinguished by the writer, his observations must be considered as applying to the eagles of Sutherland generally:—The little sparrow-hawk attacks the eagle fearlessly, and, by its superior agility, eludes the grasp of its doughty enemy. Mr. Sutherland saw an eagle obliged to drop a moor-fowl from the constant attacks of a sparrow-hawk. While John M'Kay was in Kildonan, an eagle bore away a dog belonging to William Armstrong, which was three years old, and about the size of a hare. Eagles carry off hares very frequently, and sit on the top of some lofty eminence to devour them. A Kildonan eagle pounced upon a cat, and bore it away to her nest. The injuries inflicted by the clutch of the eagle, and the unusual mode of travelling, so confounded poor puss, that she exhibited no signs of life, and was accordingly left for dead by the eagle with her young ones. But soon after the eagle had left her nest the cat revived, and having killed the eaglets, made a hearty meal of one of them. She then made a hurried retreat, and effected her escape without further injury. This anecdote is well authenticated. Mr. Sutherland related another anecdote to me, which he affirms is perfectly true. Two sons of a man of the name of Murray, in Achnaluachrich, having robbed an eagle's nest, were retreating with the young, when one of the parent birds having returned, made a most determined attack upon them. They said they had never been in such peril; for the eagle dipped her wing in a burn that ran by, and then in sand, and sweeping repeatedly by them, struck at them with her wing. Although each had a stick, it was with great difficulty that they at length effected their escape, when almost ready to sink under fatigue. John M'Kay says, that when an eagle approaches a wood, you may sometimes see thirty or forty black grouse rise, while she is yet at the distance of a quarter of a mile, and scamper off in great haste. He also states, that the stench from the nest is quite intolerable, owing to the quantity of putrid matter about it; and that he saw six red grouse at once, with a great many bones, in the nest of a large hawk." (P. 106.)

2185. *The great sea-eagle* (*Haliætus albicilla* Willoughby), also known as the erne, or white-tailed sea-eagle, &c. is characterised by Dr. Fleming as having "Tarsi half feathered and plated; tail not longer than the wings, inferior in size to the golden eagles; bill whitish; irides light brown; cere and feet yellowish white; plumage dusky brown, with an ashen tinge. Tail wholly white. Breeds in rocks; eggs two, of a white colour, with a few reddish spots. In the young the plumage is deep brown, with the margins of the feathers lighter coloured; bill and iris black; tail with the basal half whitish grey, with irregular brown spots on the outer webs, the extremity brown. In this last state it is the sea-eagle of Pennant (*Brit. Zool.* i. 167.), the *Haliætus* and *Pygargus* of Willoughby, and the *Vultur albicilla* and *F. ossifragus* of Linnæus; all which belong to this species, and seem to be in intermediate stages of plumage. Feeds on fish, aquatic birds, and land animals." (*British Animals*, p. 53.) The proportions of the male, as given by Mr. Macgillivray, are, "Length three feet; extent of wings six feet six inches; bill three inches and a half along the back, two and a half to the tip of the lower mandible, one and a half in depth; tarsus four, middle toe and claw five and two-tenths. Female: length three feet two inches; extent of wings seven feet; bill three inches ten-eighths long, one and a half in depth; tarsus four, middle toe and claw five and a quarter." (*Rapacious Birds*, p. 55.) This eagle is found throughout Europe and also in northern Asia. "It sometimes builds its nest," Mr. Bennett informs us, "in the clefts of rocks, but more frequently on the summit of some lofty tree. The female lays two eggs, about the same size and shape as those of a goose. The young are fed with fish or flesh until they are able to quit the nest, when they sally forth with their parents in quest of their own prey, and speedily assume an independent mode of life." (*Zoological Gardens*, p. 36.) This bird, also, is subject to great mutations by age. Colonel Montague gives a very minute description of one which was killed by Sir Robert Littleton's gamekeeper in Shropshire, who, being out shooting, saw two large birds feeding on the carcass of a sheep which appeared recently killed. Having nothing but small snipe-shot with him he turned back, intending to go home for larger. The eagles then followed him, and frequently came so very near that he concluded they meant either to attack him or his dogs. Suddenly losing sight of one, he judged it was very near him behind, and being somewhat alarmed he turned round and shot at it in a hurry; after which the bird flew some hundred yards, and dropped. On his approach it was vomiting blood; and he killed it after a struggle of half an hour. He adds, that it was the largest of the two. The other eagle continued in the neighbourhood some time after, and roosted in the high trees of a wood belonging to Sir Robert Littleton. To this account Colonel Montague further adds, that "another of this species was shot in Epping Forest a few weeks before. Others have been frequently killed in the New Forest; and we are informed that scarce a year passes without one being seen in that part of the country; two of which we have seen nailed up in the hall of the lodge at Lyndhurst." By this it would appear that this variety of eagle is more common among us than we imagine. The colonel also received two young ones of this species alive, which had been taken on a mountainous precipice or craggy cliff, called Slieve Donald, impending over the sea, in the county of Down. The donor informed the colonel, that "two men, covered with sackcloth and armed, were lowered by ropes to the eyry, which, with considerable difficulty, they robbed of two young, leaving only one addled egg behind, the old eagles being so furious as to create serious alarm; neither the nest nor colour of the egg were noticed; some fragments of flesh were in the nest." In Scotland it is sufficiently common, and in the Orkneys still more so. Latham says that Dr. Heysham informed him of a nest of one of this species, near Keswick in Cumberland, in which was found a trout weighing about twelve pounds; and between the upper and lower lakes of Killarney is a rock, called the Eagle's Nest, originating from the circumstance of its breeding there annually. The bird mentioned by Dr. Heysham was obtained alive, and had been in his possession about ten years when he communicated the circumstance to Latham. We would refer the reader who may feel an interest in this bird to *Montague's Ornithological Dictionary*, p. 150.; which, by its ample details, will yield him abundant information regarding it. It is without doubt this eagle, now identified with the cinereous eagle, that Sir Humphrey Davy, in his *Salmonia*, has so well described.

2186. *A method of taking these eagles is thus stated to be practised in Sutherland:* — "A miniature house, at least the wall part of it, is built on ground frequented by the eagle, and an opening left at the foot of the wall sufficient for the egress of the bird. To the outside of this opening a bit of strong skainy (cord) is fixed, with a noose formed on one end, and the other end returning through the noose. After all this operation is finished, a piece of carrion is thrown into the house, which the eagle finds out and perches upon. It eats voraciously; and when it is fully satiated, it never thinks of taking its flight immediately upwards, unless disturbed, provided it can find an easier way to get out of the house; for it appears that it is not easy for it to begin its flight but in an oblique direction; consequently it walks deliberately out at the opening left for it, and the skainy cord being fitly contrived and placed for the purpose, catches hold of and fairly strangles it." (*Statist. Account*, vol. xxi. p. 221.)

2187. *To keep down the ravages of the predacious birds*, and confine them within certain limits, nature has wisely allowed of antipathies in other birds to these ravagers, which tend to keep their destructive habits somewhat in check. Richard Drosier, Esq. in a communication made to Mr. Loudon in his *Magazine of Natural History*, vol. iii. p. 322., informs us, — "The skua-gull, called by the natives *buncie*, is held and cherished by them with the greatest veneration and kindness; and nothing hurts their feelings more than to see the death of their favourite bird. I was particularly requested, upon my first arrival, by two or three elderly natives, to spare this bird; as to the skua were almost entirely trusted the care and protection of their lambs during the summer months, that are always allowed to wander unrestrained over the island. These birds possess an inveterate dislike against the eagle and raven; for no sooner does the broad and rounded wing of the eagle appear emerging from his rocky habitation amid the cliffs, than the skua descends upon him from the tops of the mountains, in bodies of three or four, and never fails to force the eagle to a precipitate retreat. The natives always reward his services by casting from their boats the refuse portion of the fresh caught fish, which he seizes with greedy avidity, snatching it almost from the hands of the fisherman. I was particularly amused one evening, when standing at the foot of the loftiest hill (called by the natives *Snuge*), with the following circumstance: — An eagle was returning to his eyry, situated in the face of the western crags, in appearance perfectly unconscious of approaching so near to his inveterate foe, as, in general, the eagle returns to the rocks from the sea, without ever crossing the smallest portion of the island. This time, however, he was making a short cut of it, by crossing an angle of the land. Not a bird was discernible; a solitary skua might, indeed, be occasionally seen, wheeling his circling light around the summit of the mountain, which was already assuming its misty mantle. As I was intently observing the majestic flight of the eagle, on a sudden he altered his diection, and descended hurriedly, as if in the act of pouncing: in a moment five or six of the kua passed over my head with an astonishing rapidity; their wings partly closed and perectly steady, without the slightest waver or irregularity. They appeared, when cleaving the ir, like small fragments of broken rock, torn and tossed by a hurricane from the summit of a owering cliff, until, losing the power that supported them, they fell prone to the sea eneath. The gulls soon came up with him, as their descent was very rapid, and a desperate ngagement ensued. The short bark of the eagle was clearly discernible above the scarcely istinguished cry of the skua, who never ventured to attack his enemy in front; but, taking short circle around him, until his head and tail were in a direct line, the gull made a deserate sweep or stoop, and striking the back, he darted up again almost perpendicularly; hen, falling into the rear, he resumed his cowardly attack. Three or four of these birds, hus passing in quick succession, invariably succeeded in harassing the eagle most unmercilly. If, however, he turns his head previously to the bird's striking, the gull quickly asends, without touching him. This engagement continued some time, the eagle wheeling nd turning as quickly as his ponderous wings would allow; until I lost the combatants in the rocks. As soon as this is the case, the gulls leave, and quietly return to the mountain. Snuge being the highest mountain is usually chosen by the skua-gull as his retreat in the breeding season. The female, which is somewhat smaller than the male, makes her nest in the long coarse herbage of the mountain, and generally lays four eggs, of a dirty greenish colour, very faintly and obscurely blotched with spots of a brownish cast, principally at the larger end. When the young are hatched the old ones are then very savage, and will unhesitatingly strike either man or beast that attempts to molest them by approaching too near to their nests. Their mode of attack is always from behind, never by any chance in front: probably the reason for this caution is to avoid any blow which they would naturally receive if their intentions were discovered, as they would be, if the birds approached in any direction but behind. It is surprising how dexterously they will avoid an attempt to strike them, by a rapid and almost perpendicular ascent, even if they have advanced within a foot of your shoulders. To avoid them, it merely requires to be on your guard, and when a bird stoops, to face him immediately, or you are most likely to suffer for your neglect by a good smart blow on the shoulders."

2188. *The fishing eagle* (*Pandion Haliætus* Savigny), osprey or fishing hawk (*fig.* 331. p. 659.), is thus characterised by Dr. Fleming:—"Wings longer than the tail; tarsi short, thick, and reticulated; length twenty-three, breadth sixty-four inches; weight sixty-two ounces; bill black, cere and legs blue, irides yellow; the plumage above is brown; the feathers on the head edged with white; hind head white, below it is white. Beneath the eye is a band of brown, reaching almost to the shoulder. Quills about twenty-eight; those from the seventeenth to the base, pointed; inner webs of the four first abbreviated at the extremity; tail of twelve equal feathers, the two middle ones dusky, the others barred with brown and white; tibiæ long; soles of the feet very rough. Montague states (*Sup. Orn. Dict.*) that, 'On the inner side of the extremity of the outer toe are two or three spines.' Breeds on the ground, among reeds, or on trees; eggs three or four, white and elliptical; young with the feathers on the breast yellow, with dusky or brown spots; feeds on fish chiefly, darting upon them in the water." (*British Animals*, p. 51.) Mr. Macgillivray observes on it as being "remarkable among the British birds of prey for the peculiar adaptation for fishing, evinced by the form of its claws, the prominence of the thick conical scales of the lower surface of its toes, the shortness of the plumage of its legs, and the great length of its wings." The proportions of the male he gives—"Length twenty-three inches, extent of wings sixty; bill one and three-quarters along the back, one and three-quarters to the tip of the lower mandible; tarsus two and one-eighth, its claw one and a half; outer toe one and a quarter, its claw one and three-quarters; third toe one and two-twelfths, its claw one and four-twelfths; inner toe one and a quarter, its claw one and a half; wing, from flexure, eighteen; tail eight." In this bird, as in the hawks, the male is considerably smaller than the female, whose measurements are as follow:—"Length twenty-five inches, extent of wings sixty-eight; bill one and three-quarters; lower mandible one and a half; tarsus two and a quarter; hind toe one, its claw one and three-quarters; second toe one and two-twelfths, its claw one and a half; third toe one and three-quarters, its claw one and seven-twelfths; outer toe one and a quarter, its claw one and a half; wing, from flexure, twenty; tail eight and a half." (P. 115.)

2189. *By many naturalists this bird is denied a place among the eagles*, but is classed with the bald buzzards; so called, it is said, from the light colour of the feathers at the back of the head representing, or being mistaken for, a state of baldness of the part. Mr. Macgillivray says, that the tarsus or legs are feathered in front about one-fourth of their length. The wings, which are very long, have thirty quills, whereas the white-tailed eagle and the golden eagle have only twenty-five. The tertiaries, to the number of ten, are as largely developed, and as strong as the secondaries. The first three quills are deeply notched internally towards the end. It is however remarkable, that the wings, when closed, do not extend, our informant observes, more than an inch and a half beyond the tail. "This species," it is remarked by Colonel Montague, "is now rarely met with in England, and more frequently in Devonshire than elsewhere; it resides chiefly near water, especially large rivers and lakes. Its principal food is fish, which it catches with great dexterity, by pouncing on them with vast rapidity, and carrying them off in its talons. We are informed that it is frequently seen about the lake of Killarney in Ireland; and at particular seasons, no doubt, breeds there. It is said to make its nest generally on the ground by the side of water, composed of flags and rushes; but we once saw the nest of this bird on the top of a chimney of a ruin, in an island on Loch Lomond, in Scotland; it was large and flat, formed of sticks laid across, and resting on the sides of the chimney, lined with flags. It is said to lay three or four white eggs, of an elliptical form, rather less than those of a hen. Many of the ancient writers have described this bird to have one foot subpalmated, a circumstance that has never occurred in any animal, each side always corresponding in size and shape. The osprey can neither swim nor dive, but takes its prey as they approach the surface of the water." (P. 347.)

2190. *The preying of the osprey is a very interesting sight.* When one of these birds leaves its nest to prey for its young, the sea, or some vast lake, is the usual course of his wandering. Wheeling around in airy circles, he views all beneath with minute attention, particularly he meditates the watery world below, over which he suddenly appears as a fixture, supported only by a rapid motion of his wings. Ere long he is seen to dart down with surprising velocity, and soon he emerges from the water, bearing a large fish (*fig.* 331.) in his talons, with which he speeds him away to his mate and her young, where his visit is without doubt greeted by the home party

2191. *The sea-eagles,* as the ospreys are called, form a widely diffused group, for they are met with throughout Europe. America, and Northern Asia. In so wide a geographical distribution, it is but natural to expect that the individuals will present considerable variations, particularly in their plumage. They certainly recede from the character of the eagles, but evidently approximate the vultures, as well in their external characters as in their habits. Of the former we have an additional proof to those we have stated, by the thin clothing of light coloured feathers on the head and neck, which, as they advance in age, particularly in the South American groups, amounts almost to baldness—at least it leaves only a slight covering of thin downy feathers. In the choice of their food, "the sea-eagles," Mr. Bennett observes, "are far less scrupulous than their brethren of the land. Inhabiting most commonly the sea-coasts, or the banks of the large rivers and inlets, they make their prey chiefly of fishes and aquatic birds. These they usually carry off to devour at their leisure, either on the rocks or in their nests. But occasionally, when all other resources fail, they fix themselves upon the dead carcasses of animals which are thrown upon the shore, and their manner of feeding under such circumstances closely resembles the disgusting voracity of the vultures. For hours, and sometimes for days together, they remain stationary upon the putrid carrion, and quit it only when it no longer affords the means of satiating the cravings of their appetite." (*Zoological Gardens*, p. 35.) Thus we are furnished with a new proof, not only that connecting links of similitude unite all the living forms around us, but likewise that the slight deviations which we observe between each link are so economically framed, that the very departure from the specialties of the last link are those which will least harmonise with the wants of the next. Mr. Macgillivray, under similar impressions, thus notices the habits of these birds; and his observations are particularly deserving attention, as applying to the structure and functions of the wings of the raptorial birds generally: — "In the form of the osprey is presented to our contemplation an example of the adaptation of means to ends, which we can in some measure comprehend. That bird lives entirely on fish, marine and fluviatile, or lacustrine, and its food must be fresh; at least it does not appear to meddle with fish that have been cast ashore, or left dead in the water. Its prey is slippery, and therefore its claws are long and much curved; its toes nearly of equal length, and capable of being applied in the most effectual manner, in pairs, two and two opposite each other. It must also possess considerable power, and therefore its legs are strong and muscular; and to prevent its being inextricably entangled, the claws are smooth and rounded, so that they can, if necessary, be readily withdrawn. The animals on which it feeds live in the water, ordinarily beyond its reach, coming occasionally to the surface. The bird, therefore, has a comparatively slender form, with very long wings, to enable it to remain without fatigue sailing or hovering over the water, until an opportunity of pouncing occurs." Imagination already paints the act, and that the moment has arrived when she attempts the violent seizure. It is done! How she disturbs the waters by the violence of her pounce! the liquid element even seems to resent the shock by the ebulition it has occasioned, and the spray it has thrown up! She has however struck correctly, and has secured her prey, apparently a very large fish. But may not the united resistances of the fish and the water have injured her? No! provident Nature has provided against this danger to the bird; and to prevent its plumage being injured by its sudden immersion in the water, the feathers of the lower surface are

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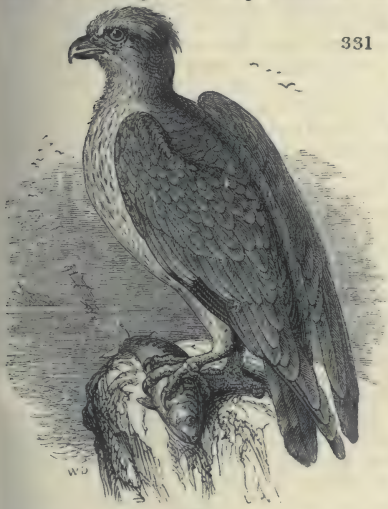


OSPREY.

rather more compact, and considerably shorter, than in eagles and most other birds of the family; and those of the leg are short all round, while most other species have a large tuft of soft feathers on the outer side of the tibia. On the upper parts, again, the plumage is not more compact than in other species, there being no purpose to be answered by such an arrangement. The structure of the wing is peculiarly worthy of study. Hawks having long wings, are commonly supposed to have a more rapid flight than those with short wings; but this is not always the case, for the flight of the short-winged sparrow-hawk is certainly as rapid as that of the longer winged kestrel. The osprey has very long wings, yet its flight is not so rapid as that of the falcon's. Length of wing, then, is not of itself an indication of great speed, so much as of the power of easy suspension in the air, and of continued flight. The osprey requires to hover long over the waters, often over the open sea at some distance from land, sometimes for hours together, before an opportunity of pouncing occurs. Its form, therefore, is as light as is compatible with strength, its wings long and unusually feathered, there being more quills in them than in those of the eagles or other hawks, while the tertiaries are moreover converted into quills." (*Rapacious Birds*, p. 124.) This bird breeds more frequently on trees than on the ground. Colonel Montague saw one on the top of a chimney of a ruined building. Dr. Fleming, in stating that it built its nest among reeds, probably was led to the supposition from Willoughby, who states its nidification as *inter arundines humi.*

2192. *The habits of the true sea-eagle of America are thus spiritedly drawn by Mr. Wilson:* — "Elevated on the high dead limb of some gigantic tree, he seems calmly to contemplate the motions of the feathered tribes below. High over all these hovers one, whose action instantly arrests his attention, by his wide curvature of wing and sudden suspension in air; he knows him to be the fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight; and balancing himself with half open wings on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep. At this moment the eager looks of the eagle are all ardour; and levelling his neck for flight, he sees the fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, soon gains on the fish-hawk; each exerts his utmost to mount above the other, displaying in these rencontres the most elegant and sublime aërial evolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish. The eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods." In proof, however, of the innate cowardice of this formidable robber, the same author adds, — "When driven, as he sometimes is, by the combined courage of the fish-hawks, from their neighbourhood, and forced to hunt for himself, he retires more inland in search of young pigs, of which he destroys great numbers. He will also attack old sickly sheep, aiming furiously at their eyes." (*Ornithological Dictionary*, p.155.)

2193. *The great sea-eagle*, being now identified with the cinereous eagle, is, without doubt, that noticed by Sir Humphry Davy in his *Salmonia*, where *Poietes* asks, "What is that large bird soaring above the pointed rock towards the end of the lake? Surely it is an eagle? *Hal.* — You are right, it is an eagle, and of a rare and peculiar species, the grey or silver eagle, a noble bird! From the size of the animal, it must be the female; and her eyry is in that high rock. I dare say the male is not far off. *Phys.* — I think I see another bird, of a smaller size, perched on the rock below, which is similar in form. *Hal.* — You do; it is the consort of that beautiful and powerful bird; and I have no doubt their young ones are near at hand. *Poiet.* — Look at the bird! How she dashes into the water, falling like a rock, and raising a column of spray; she has dropped from a great height. And now she rises again into air: what an extraordinary sight! *Hal.* — She is pursuing her prey, and is one of our fraternity — a catcher of fish. She has missed her quarry this time, and has soared further down towards the river, to fall again from a great height. There! You see her rise with a fish in her talons. *Poiet.* — She gives an interest to this scene, which I hardly expected to have found. Pray, are there many of these animals in this country? *Hal.* — Of this species I have seen but these two, and I believe the young ones migrate as soon as they can provide for themselves; for this solitary bird requires a large space to move and feed in, and does not allow its offspring to partake its reign, or to live near it. Of other species of the eagle, there are some in different parts of the mountains, particularly of the osprey, and of the great fishing or brown eagle. I once saw a very fine and interesting sight above one of the crags of Ben Weevis, near Strathgrave, as I was going, on the 20th of August, in pursuit of black game. Two parent eagles were teaching their offspring, two young birds, the manœuvres of flight. They began by rising from the top of a mountain in the eye of the sun (it was about midday, and bright for this climate). They at first made small circles, and the young birds imitated them; they paused on their wings, waiting till they had made their first flight, and then took a second and larger gyration, always rising towards the sun, and enlarging their circle of flight, so as to make a gradually extending spiral. The young ones still slowly followed, apparently flying better as they mounted; and they continued this sublime kind of exercise, always rising, till they became mere points in the air, and the young ones were lost, and afterwards their parents, to our aching sight." (P. 98.)

SUBSECT. 3. *The Falcons.*

2194. *The falcons* (*Falco* Linn.), properly so called, include the most important individuals of what are known after the falconer's grammar as the "noble birds of prey." "The *Falconidæ*, or falcons," Mr. Swainson observes, "exhibit the perfection of the order of rapacious birds; they are distinguished by a much shorter and sharper bill, more or less toothed, and by very acute and strongly curved talons. Their form, in general, is lighter, their flight more graceful, and their courage much greater than what we see in the vultures; unlike these latter, also, they live almost exclusively upon animals which they themselves have killed, resorting only to carrion or dead game when pressed by extreme hunger. The geographic range of this family, as a whole, is universal; for wherever other animals exist, there also these deadly enemies are to be found. From the arctic regions to the most southern limits of Australia, and from the western shores of Africa to the vast forests of Brazil, different races of the falcons abound; and yet there are very few species which inhabit widely remote countries. Some of those whose chief metropolis is in Europe, extend their range to the most northern parts of the new world, and even spread in the contrary direction to the more temperate latitudes of Asia; but the species of tropical America are totally different from those of western Africa, although many of these latter extend their range to the Cape of Good Hope, and some few appear, also, to be inhabitants of India." He also justly observes, that "The natural arrangement has excited more attention among modern naturalists, and has given rise to more controversy than any group in the whole circle of ornithology." (*Natural History of Birds*, p. 287.)

2195. *The division of falcons advocated by Mr. Swainson is into three groups:* — "The first contains the true falcons, having a deep and sharply angulated tooth (which is often divided into two) near the tip of the upper mandible; these compose the restricted genus *Falco*. The second is composed of the hawks, wherein the tooth just mentioned is not apparent, or rather it assumes a form of a rounded projecting lobe, or festoon, towards the middle of the margin; the shape of the bill, however, in other respects is the same; that is to say, it is short, high, and curved from the base: the wings are also more rounded than those of the true falcons, but both groups agree in having the tarsus fully developed. For these birds we retain the generic name of *Accipiter*, originally given exclusively to them by our great countryman, Willoughby. The third, which is the aberrant division, is characterised, as a whole, rather by negative than positive characters. The bill is weaker, less curved, and more straight at its base; it is never toothed, and seldom festooned or sinuated on the margin; while the wings, although rounded like those of the hawks, are considerably longer." (*Ibid.* p. 289.) The term aberrant will call to mind that Mr. Swainson forms all his zoological arrangements on the quinary or circular system. The genus *Aquila*, or eagles, is reckoned as one portion of the division just mentioned; the genus *Buteo*, or buzzards, as the second; and the *Milvus*, or kite, as the third. There is indeed much order and method in this arrangement.

2196. *The distinctive characters of the falcon family are thus stated by Cuvier:* — "The falcons are, for their relative size, the most courageous of the whole; their offensive arms, and the power of their wings, are proportioned to their courage. Their beak, bending from its base, has a tooth on each side at the point. The second quill feather is the longest; but the first is nearly as long, rendering the entire wing longer and more pointed. From these premises result peculiar habits; the length of the quill feather weakens their efforts at vertical flight, and renders it in a still air very oblique forward, and obliges them, when they wish to rise directly, to fly against the wind. They are very tractable birds, and are the most used in falconry, being taught to pursue game, and to return when called. All of them have the wings as long and longer than the tail."

SUBSECT. 4. *The Hawks.*

2197. *The terms hawk and hawking are so familiar*, that it might appear wholly unnecessary to enter into any explanation of them. But whoever regards these terms attentively, will be at once convinced that both have a popular or general acceptation, and also a systematic or restricted one, which, however the naturalist and the practised falconer may understand and readily discriminate, may not be so easily distinguished by others, who, on the contrary, are likely to consider the subject mystified without a helping hand from without, or much patient investigation of their own. If a hawking treatise were taken up by any one who was neither a naturalist nor a falconer, he would, ere he read half a dozen pages, become bewildered by the frequent use of these terms, both in their popular and restricted sense. Nor without some assistance could an ordinary reader see his way through the contradictory maze. In proof of this it may be remarked, that one ornithological statement generally received, while it collects almost all the birds of prey under the term *hawk*, at the same time gives the reader to understand that *hawks*, properly so called, form a genus of very limited extent and small pretensions, having but two British types, the goshawk and the sparrow-hawk, and even of these the goshawk should be assigned a distinct niche in the opinion of some naturalists, which still further lessens the individual importance of the *hawk proper*. To remove the effect of these seeming inconsistencies, which obscure the history of birds of prey, we request attention to what will follow on *hawks properly so called*, in distinction to the common use made of the term in figurative language as used at large, not more by the poet, the historian, and the falconer, than by the naturalist himself. It is to be premised that the extensive use of the term *hawk* arises, without doubt, from the very large and very important family of birds of prey being described by our most accredited naturalists under the term *Accipitres*, derived, as is well known, from *accipiter*, the Latin name for the hawk, which thus occasioned the term hawk in common parlance to be conventionally used to denominate birds of prey bearing very different characters, dimensions, and properties; and thus also hawking, as a verb, claims an equally extensive sphere of action. The older poets and historians, no less than our writers on Natural History, offer ample proofs of the truth of our assertions. Bailey, the excellent lexicographer of by-gone days, has — "Hawk (*hieroglyphically*) was by the ancients put to signify the sun, being an emblem of its powerful influences in the world. Some have observed of this bird, that it can stedfastly behold the sun, and that its bones will attract gold (the metal of the sun) as the loadstone does iron. They also represented the Almighty by the body of a man covered with a long garment, bearing on the top of the head a *hawk*, because the excellence, courage, nimbleness, and good qualities of this bird, did shadow out the incomparable perfections of its Creator. And because the hawk is a bird of long life, it was an emblem of natural life; and was also used to signify a prudent, valorous, just, and brave man." (Vol. ii.) Strutt, in his *Historical Account of the British Sports of early Times*, almost invariably uses the terms *hawk* and *hawking*; falconry being seldom mentioned by him, and falcon almost never: nevertheless, as we have already stated, and shall prove, the hawk is only a subordinate member of the falcon family. The same remark will apply to many of the old sporting treatises, where hawk and hawking are terms of much more frequent occurrence than falcons and falconry. In the old legal enactments, where great precision was required, *hawke* or *hawk* was employed to designate the falcon of whatever size and quality. Thus: —

"Great was the sorwe for that *hawke's* harme,
That Canace and all hire women made."
Chaucer's Squiere's Tale.

"And in their the soring *hawke* did toure,
Sitting like king of fowles, in majesty and poure."
Spenser's Faerie Queene.

"*Hawking* comes near to hunting, the one in the ayre as the other on the earth, a sport as much affected as the other, by some preferred."
Burton's Anatomy of Melancholy.

"Ride unto St. Alban's,
Whereas the king and queen do mean to *hawke*."
Shakspeare.

"Dost thou love *hawking*? Thou hast *hawks* will soar
Above the morning lark."
Id.

"A falc'ner Henry is, when Emma *hawks*;
With her of tarsels and of lures he talks."
Prior.

If we needed other proofs that all the preying birds used in falconry were ranked under the term *hawk*, we might assert that they crowd on us. The *Saxon Dialogues* in the Cotton Library speak thus of the fowler: — "How do you deceive fowls? — Many ways; sometimes with gins, sometimes with lime, sometimes with whistling, sometimes with hawks, sometimes with traps. Can you tame them? — I can; what use would they be to me if I could not tame them? Give me a hawk. — I will give it willingly if you will give me a swift hound: which hawk will you have, the greater or the less? — The less; the greater. How do you feed them? — They feed themselves and me in winter; and in spring I let them fly to the woods: I take for myself young ones in harvest, and tame them. And why do you let them fly from you when tamed? — Because I will not keep them in summer, as they eat too much. But many feed and keep them through the summer, that they may again have them ready. — So they do; but I will not have that trouble about them, as I can make many others." Geoffrey Fitzpierse, history informs us, "gave two good Norway hawks to King John, to obtain for his friend, Walter Le Madena, the liberty of exporting a hundredweight of cheese; and Nicholas the Dane was to give the king a hawk every time he came to England, that he might have free liberty to traffic throughout the king's dominions." (*Ibid.*) We shall only remark, that the old writers use the word hawk for falcons of every degree on almost every occasion, but they make use of the term falconer, in many instances, to designate him who makes use of the hawks, although in many others the term hawker is employed. We feel that we ought to apologise for thus trespassing on the patience of our readers; but having in our own noviciate felt the inconvenience of a want of precision in the naming of the subjects before us, and of the total variance between the *conventional* and the *technical* methods of considering them, we have endeavoured to smooth the path for other travellers over the same ground. We shall, in conformity with this view, now proceed to consider the *hawk* in his proper *station* among birds of prey, stripped of the borrowed plumes in which ancient legends had bedecked him.

2198. *Hawks are considered as a group of birds belonging to the falcon family.* This group is systematically divided into hawks proper and goshawks. Modern naturalists further arrange the hawks under the term *Nisus*, and the goshawks under that of *Astur*. M. Savigny has formed a new genus for hawks, which he names *Dædalion*. M. Viellot calls them *Sparvius*.

2199. *The systematic characters common to both hawks and goshawks are thus clearly displayed by Mr. Griffith :* — "A beak greatly inclined from the base, and compressed laterally; the upper mandible greatly crooked, with a very marked tooth; the lower shorter, and obtuse; the cere smooth; the nostrils a little oval; the commissure, or division of the mouth, extending as far as below the eyes; the tongue oblong, thick, and sloped; the tarsi reticulated, principally on the sides, with a rank of lozenges in front; the four toes long, but considerably exceeded by the intermediate one; the talons crooked and acerrated, that of the lower toe the longest of all; the first remex the shortest, the fourth the longest; the wings scarcely reaching half the length of the tail, which is rounded." The differences between the two sections consist in the respective proportions of the beak, tarsi, and toes: thus the hawks have the beak shorter, the tarsi more elongated and slenderer than the goshawks; they also have the last phalanx of the intermediate toe passing the talons of the lateral toes; the tongue is also more sloped than that of the goshawks, and the latter in general are stronger built and of a less elegant shape. Both the hawks and goshawks in their plumage exhibit a character which distinguishes them from other birds of prey; when adult and past the second moulting, they have transverse stripes on the lower part of the body, where, previously to this age, there were longitudinal bands." (*Ibid.*)

2200. *The natural habits of the hawk are thus treated by the same authority :* — "The conformation of their wings does not permit them to fly so high, nor so long, as some of the other *Accipitres*, which have longer wings; and it obliges them to employ stratagem in the procuring of their prey, while the other *Raptores* fall upon it almost perpendicularly. Their flight is low and horizontal, and they dart sideways on the birds which pass within their reach. When obliged to repose, they fix in the midst of tufted trees, from which they watch partridges, fringillæ, field-mice, and other small *Mammiferæ;* consequently their mode of hunting naturally removes them from the close covert to the open fields, which are bare of trees. The goshawks, being stronger, attack hens and pigeons. All these birds deplume their feathered prey, and tear it in pieces before they eat it. But they swallow the small *Mammiferæ* entire, the skin of which, rolled up, is rejected by the mouth. It is only during summer, and the back season, that hawks are seen dispersed in the fields, where they are frequently observed alone, though the two sexes are usually at no great distance from each other; but the male and female, to avoid interfering with each other in hunting, are generally perched on separate trees. Sometimes, however, entire families are met with, hunting together, but such assemblages only take place during the early age of the brood, while the parents are instructing them in the exercise necessary to procure subsistence: a proof that there is a natural education among animals, and that all is not mere instinct." (*Animal Kingdom*, vol. vi. p. 238.) We have been led to borrow thus largely from this accredited source, because we have met with no description of the hawks which united popularity with system so happily as this, which we hope will plead our excuse.

2201. *The generic characters of the kite* (*Milvus*), according to Dr. Fleming, are, "Plumage, above, deep brown, with pale edges; beneath, ferruginous, with dark longitudinal stripes. In length the kite is twenty-eight inches, breadth sixty-four; weight forty-four ounces. Bill yellowish, with a dusky tip; cere and irides yellow. The feathers on the head are light-coloured, with a dark streak on the shafts. Quills twenty-four; inner webs of the first four, and outer webs of the third and fourth, abbreviated; black at the extremities. Two outer tail feathers more produced, and darker than the others. The female has the brown and pale edges of the feathers more distinct, the latter passing into white. Breeds in trees, making a nest of sticks, lined with wool. Eggs three or four. In the young, the feathers of the head are more rounded, and destitute of longitudinal dark stripes. Feeds on reptiles and dead fish. Is stationary in Britain. (*Fleming's British Animals*, p. 51.)

2202. *The exterior characters of the buzzards bear the accipitrine stamp.* Their wings, like those of the falcon, are almost as long, and in some of the species even longer than the tail; but they differ in having the first quill feather very short, and the third and fourth the longest. In the true buzzard the tarsi are short. As hawking agents their reputation is very small. Sluggish in nature, somewhat indistinct in their vision in the noon-tide glare, they have seldom fulfilled the sportsman's intentions; and however they might have been employed in olden times, we believe no attempts are now made to train them in Britain.

Sect. II. *The Falcons and Hawks employed in Hawking.*

2203. *The falcons and hawks* now employed in falconry. we repeat, are few in comparison with those used for the purpose in olden times. Colonel Thornton, the most noted falconer of our times, gives the following list of the falcons and hawks which have been mostly employed in this kingdom: —

The gerfalcon, and its male the jerkin.

The falcon,	ditto,	tierce gentle.
The lanner,	ditto,	lanneret.
The bockerel,	ditto,	bockeret.
The saker,	ditto,	sackerel.
The merlin,	ditto,	jack-merlin.
The hobby,	ditto,	jack or robin.

The seletto of Spain.
The blood-red rook of Turkey.
The waskete from Virginia.

Of the short winged are the following: —
The eagle, and its male the iron.

The goshawk,	ditto,	tiercel.
The sparrow-hawk,	ditto,	musket.

The two sorts of French pie.

Of the inferior: —
The stangel, or ring-tail.
The raven and buzzard.
The forked kite and bold buzzard.
The hen driver, &c.

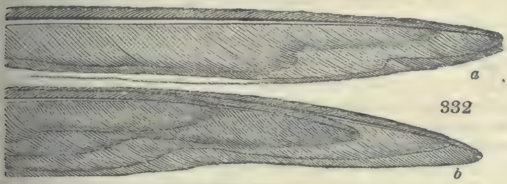
The sporting colonel, however, omits to notice the castrel (kestrel) and her jack. We shall ourselves pursue the subject in detail, and it may be well to commence our account of the *Falconidæ* by noticing the difference of size between the sexes. Contrary to what is observed in most others, the male among birds of prey is, we believe, invariably the smallest, in most cases by one-third, and of course is the least efficient in power. Consequently in the use of any of these birds for hawking purposes, a marked difference has always been shown, not, we should here say, to the more gentle sex, though it is to the ladies, which, being in this instance the larger and stronger, are the most ungentle of the two. Thus in hawking it is the hen birds that are most highly esteemed, and almost exclusively employed, and they will consequently take the precedence in our practical detail; when, therefore, the sex is not specifically noticed, it may be presumed to be a female that is alluded to.

2204. *In designating the sex of falcons and hawks,* arbitrary terms were imposed by the falconers of early times, according to the species intended, which should be borne in mind to enable us to understand the writings of ancient falconers. These male designations are noted at length in the list of falcons and hawks in use in times when falconry prevailed over all the other field sports. The ages also were known by arbitrary terms, as the female yearling was called a *red* falcon; the male a *red* tiercel, and when reclaimed (*i. e* trained) was a gentil or gentle hawk of any kind, though afterwards by corruption gentil was used as the proper name of an individual falcon.

Subsect. 1. *The Wings of Falcons and Hawks, as Aids in Flight, and as Characteristic of their Rank.*

2205. *Falcons and hawks are popularly divided into long winged and short winged,* which division is of itself a proof of the difference of power in flight which results from a particular form of the wings of these birds. To illustrate the effects of these variations, we will attempt some explanation of the means by which raptorial birds overtake their prey, and of those by which they almost invariably destroy it, themselves usually coming scathless out of the fray. The wings of birds, we need not repeat, are the great organs of motion in them; it is the wings also which direct and increase the force of the blow given by the pursuer to the pursued, the beak and talons helping to complete the bloody task, and effect the dismemberment of the carcass of the victim. Most of the ancient authors treated only of the mechanics of hawking, or of rearing and training the predacious birds to the purposes of the falconer; and it remains for the moderns to direct our attention to the philosophy of this aërial warfare. Among these M. Huber, in his *Observations sur le Vol des Oiseaux de Proie*, published in 1784, has signalised himself more than any former author. We are also indebted to Mr. Griffith for a very interesting summary of this ingenious writer's opinion on the subject, of which we have availed ourselves to a certain extent. We would nevertheless recommend those particularly interested in the sport, to refer to M. Huber's work itself, or otherwise to Mr. Griffith's *Animal Kingdom of Cuvier*, vol. vi. M. Huber divides "the wing into *rowing* and *sailing* wings (*rameuses et voilières*). The birds provided with the former sort he calls *rowers*, birds of high flight, or, as in the old French, *de leurre;* the latter he calls *sailers*, birds of low flight, in their hawking vocabulary, *de poing*." We also retain these distinctions; indeed, it will be seen that they are strictly correct, as all falcons of high flight are necessarily trained to return from aloft by the *lure*, which is conspicuously swung around the head; whereas, those of low flight, not being so remote, return to the *fist*. "The wing of the first is slender, attenuated, not much convex; and, when unfolded, subject to very considerable tension. The first ten quills are entire, and their barbs touch each other without discontinuity in their entire length. The motions of this wing are easy, rapid, and strong: accordingly we find the rowers fly against the wind, with the head straight, and raise themselves without difficuly into the highest regions of the air, where they sport in all directions."

2206. *The wings of birds of rapid flight* are called by Mr. Swainson emarginated wings; at the same time he observes of them, that "They are obviously formed for the purpose, but that they have nevertheless no fixed character in the proportion of the exterior primaries; for in some groups the first quill is as long as any of the others, while, in other instances, the first, second, and third quills are gradually shortened; the true distinction of an emarginate wing consists of a sudden notch, or sinuosity, more or less abrupt, which is found on the margin of the inner shaft of the longest quills. This notch in the true falcon is situated near the end of the shaft (*a*, *fig.* 332.); but in the sparrow-hawk, and others of the "ignoble" hawks, it is placed at the base (*b*). The flight of these latter birds is well known to be less powerful than that of the typical falcons; for their three first quills are gradually shortened, whereas the "noble" race has the first quill feather nearly as long as any of the others. In the owls, the situation of the notch varies; for in some it is near the end, in others toward the middle of the quills. This structure, the precise use of which it is difficult to explain, is universal among the rapacious birds." (*Loc. cit.* p. 89.)



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EMARGINATED WINGS.

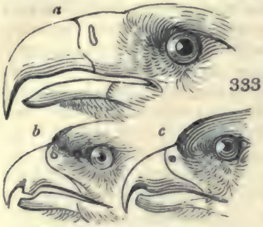
2207. "*The wing of the sailers*," continues our first authority, "is thicker, more massive and arched, and less stretched in the act of flying. The first five quills, of an unequal length, are sloped from the middle to the extremity: thus, that portion of the wing which is most important for the purposes of flight presents an interrupted surface to the air; and the wing itself, actuated by forces of less energy, fails of producing so perfect an effect. We find, therefore, that these birds can only fly with advantage when the wind is in their rear. They keep their heads low, and seldom rise but for the purpose of discovering their prey; and here the French term *planer* (to hover) very appropriately depicts this mode of flying, in which the wings are extended and motionless, and the body is carried along by the course of the wind: in fact it is, strictly speaking, a sort of sailing. The quills of the rowing wing are also in general, more firm than those of the sailing; and this is indicated according to M. Huber, by the lively and marked variegation which predominates in the first, from one end to the other; while in the last a deep, uniform, black wash prevails from the sloping of the feather to the point, and a white, equally uniform from the origin of the quill to the commencement of the sloping. (*Griffith's Animal Kingdom of Cuvier*, vol. vi. p. 206.)

Subsect. 2. *The Beaks and Talons of Falcons and Hawks, as Organs of Offence, and Characteristics of their Degree of Nobility.*

2208. *The beaks or mandibles of birds of prey* are employed, in common with the wings, in stamping on them those characters of nobility so often remarked on by naturalists, and considered so important by falconers. The beaks of these birds are essentially cutting instruments, being employed in the destruction and dismemberment of their prey, rather by pressing their opposed edges together than by striking with the point. These *tomia* have their line interrupted in most, but very differently in some to others. In some it is by a waving line only, in others the interruption offers a more strongly marked festoon, and again in a third set it presents a prominent tooth-like process, both strong and sharp.

2209. *The general characteristic of the beaks* of each member of this predacious family is that of strength. In all it is short and compressed in comparison with its length; from its base to its apex, the culmen or ridge of the upper mandible curves irregularly forward to its point in a hook-like manner. The cutting edges of both mandibles are also curved in their outline, but are interrupted variously, according to the species, as we shall point out hereafter. The lower mandible is also strong, but less incurvated throughout. Its *tomia*, or upper surface, adapts itself to the peculiarities of the *tomia* of the upper mandible. Its tip ends abruptly, as seen in the figures of exemplification, so as to enable it to just slide within the curved point of the upper portion of the beak. The whole line of the *tomia* of the lower is variously indented, or otherwise extended, to adapt itself exactly to the irregularities in the edges of the upper. This exact application of these upper and under surfaces, and the action arising therefrom, has been forcibly and justly characterised, by describing it as compounded of the direct cut of a chisel and the drawn cut of a knife. It is on the variation of this general outline, in conjunction with length of wing and strength of talon, that the characters of noble and ignoble birds of prey are formed. We will now proceed to apply our outline to the various grades of the preying birds, in the order of our individual description of them.

2210. *The beaks of eagles* of every species are more prolonged from the base than those of the falcons and hawks of all kinds (*fig.* 333.). The upper mandible of the eagle's beak curves moderately only for two-thirds of its length, the remainder, however, bends into a powerful hook. Its *tomia* is very slightly interrupted, and can hardly be said to offer any dental process whatever. Much therefore as we admire the lofty bearing, the poetic descriptions, the size, and the powers of this bird, we must nevertheless class him with the ignoble as regards his bill, though, as a redeeming trait, his wings are of the requisite length. We venture also another suggestion to rescue him from degradation, which is, that nature gives nothing in vain, and never loads her children with more than they actually want. This beneficent mother has, it is true, denied to the eagle and the vulture these mandibular attributes of nobility; but has she given to the former such immense powers, both of acquiring food and of abstinence, as to make these additional armatures almost unnecessary? The vulture also, being able to satiate itself on dead carcasses, does not need this addition. Are we not likewise somewhat borne out in the assumption, that this deprivation is an equalising one, from the further fact that the Iceland falcon, which is larger by one-fourth than any other member of the genus, wants a full development of the tooth-like process on the lower manbible? but having the required length of wing, united to great power and courage, it has, in the estimation of every practical falconer, been elevated to an equal rank with others of less size which possessed the toothed beak.



BILLS OF RAPACIOUS BIRDS.

2211. *The bills both of hawks* (*b*) *and falcons* (*c*) in *fig.* 333., as already stated, are shorter than that of the eagle (*a*): and it is also worthy of remark, that the tooth-like process in the bill of the hawks is seen, in the majority of them, to be more developed or prominent than it is in the falcons. In these several instances, however, the bounty and the equality of nature's gifts are conspicuous; for, notwithstanding this seeming superiority of armature in the bill of the hawk, it is nevertheless evident, on examination, that the bill of the falcon altogether is a more formidable weapon than that of the hawk; and this superiority is particularly evident in the rowers on the wing, known as the noble falcons of high flight. In them the culmen of the bill, by springing directly from its base, gives great power to the organ, and enables the tooth-like process or angle in the *tomia*, or cutting line of the upper mandible, to rend the prey most destructively. The utility of this specialty of formation must be apparent, when we consider the habits of these birds, who tear to pieces not vegetable but animal matter, and not dead but living animal substances. To this end organs similar to the teeth of the carnivorous quadrupeds were necessary. It is probable that it is the force of the blow of the sternum, and the vice-like pressure of the talons united, that kill; but the dismemberment of the prey is left to the beak, which is less formidable at striking than a bill of a straighter form, like that of the raven or magpie. But for skinning, depluming, and dismembering the quivering victim, no apparatus can be better devised.

2212. *This beak has been aptly called a typical one by Mr. Mudie*, and it certainly exhibits the type of perfection in the order for predacious purposes. His own words are, — "In proportion as the different species of falcons and hawks have the bill approaching to this typical one, they are preyers on the wing, and consequently preyers upon birds, killing their own game, and eating it in the recent state. In proportion, too, as they have this structure of the beak more perfect, they fly at "higher game," or birds of more powerful wing. The plumage of these is more firmly set, and the tendons, and even the muscles, are much tougher than in birds of lower flight; and besides, the low-flying hawks, harriers, and buzzards, strike prey upon the ground, and prey upon small *Mammalia*, or occasionally take a mess of carrion or garbage. It is thus, not without some shadow of reason, that the high-flying falcons were called 'noble,' and the low-flying ones 'ignoble;' for there is a sublimity in their style of hawking, as compared with that of the others. They are the genuine birds of prey; for though they descend to the earth to strip and eat their game, their preying is, in a state of nature, confined to the air, the appropriate region of birds." (*Natural History of Birds*, p. 169.) In this list we enumerate the peregrine falcon, in all its fancied varieties, the merlin, the hobby, and the kestrel.

2213. *The gerfalcon*, as regards his beak, must be considered as an intermediate between the noble falcons and the ignoble hawks; and although Mr. Mudie describes the dental process as prominent and well defined, yet it cannot be said to present an equal armature, and consequent claim to rank, with the peregrine and other noble falcons. We, however, perfectly agree with him, that this falcon is stronger in proportion to its size and quantity of matter than most other birds; Mr. Mudie indeed says, "than of any other." We confess that the accounts given of this beak are rather conflicting. Cuvier, if we mistake not, likens it to "the blunt-toothed bill of the hawks." Mr. Griffith observes, "the falcons proper are distinguished by a tooth more strongly defined, on each side of the upper mandible, which in the gerfalcons is a mere festoon." Mr. Macgillivray's description of it runs thus: "The upper mandible has the edges a little inflected, rather obtuse, with a slight, sometimes an obsolete, festoon, the tooth-like process distinct, and rather rounded." Mr. Mudie, on the contrary, presents us with a figure taken, as we have reason to believe, from an Icelandic specimen, the property of Mr. Yarrell. "Here," observes Mr. Mudie, "the tooth is prominent, the notch well defined, and the tomia curved in the greater part of their outline." Discrepant as these accounts appear, it is not difficult to reconcile them, when we consider the variations which are seen in individuals among the *Raptores* of the same species, occasioned by varying ages, localities, and habits. The great importance of this bird to the falconer, and the interest he must excite in the naturalist and bird-fancier, have prompted us to this detail. We shall only further remark, that, in strict accordance with that depreciation in rank which the defective armature of the beak attaches to him, is the curtailment of his wings, which do not extend to the end of the tail by four inches. The legs, short and strong, are feathered down one-third of their length; anteriorly they are mailed, and terminate in toes strong, scutellate, and furnished with sharp massive claws.

2214. *The consideration of the beak of the hawks* introduces us to the ignoble birds of prey, so called from their being defective in the requisite degree of length and strength in the armature of the bill, as well as in the length and formation of their wings. These are the sailers of M. Huber, and the short winged hawks of the practical falconer. Our prominent examples of them are the goshawk and the sparrow-hawk (*fig.* 333.). Both are, however, reputed agents in hawking, particularly the former, whose elegance of form and powerful make, have stamped him although a bird of *low flight*, as a very valuable auxiliary in the sport of hawking. The beak of the goshawk is short and strong; its culmen slopes slightly as far as the edge of the cere, and then incurvates sharply; the edges are anteriorly very sharp, and present a broad festoon beyond the middle. The tip, however, is very acute, and the general strength of the whole compensates for its defective armature; the wings also are of moderate length; the legs, feathered down one-third of their length, are mailed before and behind with powerful scutella. The toes are strong; the third and fourth are webbed together as far as the second joint.

2215. *The beak of the sparrow-hawk* differs somewhat from that of the goshawk in being shorter, and in having its festoon more in the centre of the edge of the upper mandible; the tip is very acute, and its point nearly perpendicular. The wings of the sparrow-hawk are of moderate length, and barely reach the middle of the tail, which, however, is none of the shortest. The tarsi, or legs, are long and slender; as are the toes also, which are terminated by black sharp claws.

2216. *The offensive organs of the remaining birds of prey* will not detain us, as any peculiarity in their construction, however interesting to the naturalist, would prove little so to the falconer's practice. Of the bills of the kite and the buzzard we need only remark, that their armature becomes more and more obsolete as we descend in the list, although the general strength and substance does not vary in equal proportion. The beak of the owls is toothed, we believe, in most of the species; it is also short and acutely hooked, and, further, it exhibits the peculiarity of having its toothed process not on the upper, but on the under mandible. On the wings and feet of these several varieties, we shall reserve whatever we may have to say for our notice of those birds individually.

2217. *The talons of birds of prey* are very active agents in their hawkings. Mr. Swainson calls these raptorial feet, as being adapted to seize and destroy. Those of the noble kinds, M. Huber remarks, are longer, more supple, and altogether more mechanically framed to take a firmer hold of their quarry, than those of the sailers. Mr. Mudie very expressively calls these "clutching feet," which are expressly formed for using in the air; and he considers the foot most typical of these powers to be that of the gerfalcon (*fig.* 334.). "The character of these clutching feet," says this popular writer, "is to have four toes, all free to their bases, and three turned to the front, and one to the rear, in the general habit; but those species which fish have the exterior front toe reversible, so that the toes act two against two, and thus lift the prey more easily out of the water, than if they had the common position. When the toe is reversible, it is generally the largest in the foot; and the claws upon these feet have their under sides smooth and rounded, as well as the upper ones; whereas those birds which use the feet only in killing, have the under sides of the claws grooved, or with two cutting edges, by which means they inflict much more lacerated and mortal wounds. The claws of the more typical birds of prey (which are the only ones that get the name of talons), are used only in killing the prey, or in holding it while depluming, skinning, or tearing asunder, by the beak; but the vultures and other less typical species, which eat carrion and rarely kill living prey, use the claws more for retaining their hold, while they stand on the bodies of dead animals. Size is not so much an indication of power in these feet as compactness

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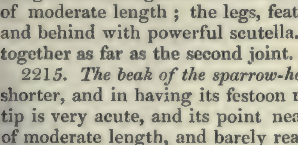

CLUTCHING FEET.

and symmetry; the tarsi of the more powerful ones are all short; and in proportion as the preying of the bird becomes what is called more ignoble, the tarsi increase in length." (*Natural History of Birds*, p. 241.)

2218. *The methods of attack of both the long winged and the short winged hawks* are spiritedly and accurately touched on by Huber. "The rowing birds," he remarks, "pounce at once on such prey as is at the same time light of weight and slow in movement. On the contrary, when one that is heavier and more active is the object, they first attempt to arrest its progress ere they finally rake it. With an instinctive precision, they also at once attack the tenderest and most vital part, as the head of birds, and between the shoulder and the ribs in beasts." But, with all due submission to M. Huber's opinion, we must from authentic information state, that both the common falcon and the gerfalcon can at one stroke break the neck of a hare. M. Huber however, in a general sense, is correct, when he asserts that the smaller hawks, of good breed, are more instantaneously destructive to their prey than the larger. The precision with which the fatal stroke is given, he likewise justly observes, is not so great with the sailers as with the rowers, the former rather compress and strangle their prey than break it up: a hare they seize by the throat with one talon, and hold it until it is dead.

2219. *The action of the feet of the falcons*, when seizing their prey, is the effect of position. Mr. Mudie, after his admirably descriptive fashion, says, "It is an oblique thrust, neither directly against the end of the last phalanx of the bone, nor across it, but in a tangent to the curvature of the claw at its point; and any one upon examining the foot of a falcon, will find that this is the very direction in which a shock can come so as to jar or strain the least possible, and at the same time to divide the pressure most equally among all the joints of the member which acts. If the stroke were given directly in the line of the axis of the toe and claw, the crush or jar would be in all probability most injurious, for hard as are the bones, and tough as are the tendons and ligaments in the foot of the gerfalcon, they could not hold directly against so terrible a rush as this; and were she to strike against a solid and fixed substance, she would be dashed to pieces by her own velocity; or, in other words, would perish through the very excess of her own strength. But the violent motion of this bird, the circumstances under which it is exerted, and the organisation by means of which it is performed, are all admirably adapted to each other. The stroke of the falcon, unlike the spring of the beasts of prey, or even the stoop of the eagle, and the other predatory birds which kill their prey upon the ground, does not, in itself, arrest the violence of her motion; for when she misses, if she hawks at flocking birds, as she often does, she dashes onwards, and strikes again; whereas the lion and the tiger must pause and again crouch before they can take a second spring, and the eagle must regain her height before she makes a second stoop. Thus the prey of these wild beasts, if not captured at the first attempt, has a chance of escape much greater than the prey of the gerfalcon." (*Loc. cit.* p. 103. 105.)

Sect. III. *The Falcons and Hawks principally employed in Falconry.*

2220. *When falconry, or hawking, was the all prevailing sport*, almost every one of the falcon and hawk tribes was trained to the purpose, although even then some were more highly prized than others. At the present time the list of the falconer is very much curtailed, and a few of the most tractable only are now employed in it. As however it is our intention to treat somewhat fully on this once popular pastime, we shall notice more or less each individual member of the raptorial family. As we conceive we best consult both the entertainment and the information of our reader, when we blend the systematic characters of the living objects with the uses to which they are applied in the service of the sportsman, we shall commence our account of the gerfalcon, and that of the peregrine which is to follow, by calling to mind that between the gerfalcon and the peregrine falcon there are differences, which have made it necessary to divide them into two sections. "The falcons proper are distinguished by a tooth more strongly defined on each side of the upper mandible, which in the gerfalcons is much less prominent; the lower mandible is also much more sloped at its point in the true falcons." (*Animal Kingdom*, vol. vi. p. 196.) Were we therefore to follow in the order of systematic rank, we should set out with the peregrine falcon; but having commenced the order of our display by the popularity which size and strength give to the living objects, we shall in this instance do the same, though it will be perceived that even to this we shall not slavishly adhere, but shall so frame our descriptions as that they may follow somewhat in the order of our practical detail. We cannot proceed further without restating it as our opinion, that hawking will again become a popular amusement. Its high bearing and its great antiquity give it a strong hold on our admiration and regard. It offers little to excite the stigma of the sensitive, nor does it interfere with the rights or properties of our neighbour. It gives a spur to natural history, and tends to illuminate many of its dark pages. Gambling has little connection with it. Commerce is benefited by it, and its associations have a loftiness of character about them, that tends to enterprise in the pursuers of it.

Subsect. 1. *The Gerfalcon.*

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THE GERFALCON.

2221. *The gerfalcon (F. candicans, F. cinereus,* and *F. sacer) Gm. Enl.* p. 210. 462. and *Histoire des Oiseaux,* i. pl. 14. Edw. *55* "one-fourth larger than the falcon, is one of the most esteemed birds for falconry. It is brought principally from the north. Its common plumage is brown above, with a border of paler point to each feather, and transverse lines on the covertures and quill feathers; whitish underneath, with long brown spots, which change with age on the thighs into transverse lines; the tail is radiated brown and greyish, but it varies so much in the prevalence of brown or white, that there are some with the body all white, with only a brown spot on each quill of the mantle; the feet and membrane of the beak are sometimes yellow and sometimes blue." (*Animal Kingdom,* vol. vi. p. 32.) Such is Cuvier's systematic description of this bird, whose very name appears to carry with it something mystic, and whose clothing, varied by time and habitation, has subjected it to be divided and sub-divided, until confusion became worse confounded with regard to it. We offer the following ingenious observations of Mr. Griffith, as directly applicable to the difficulty we feel in attempting a satisfactory history of this prime favourite of the falconer: — "Etymological affinities, which are so often found to throw light on many subjects, seem to have contributed to obscure the natural history of the gerfalcon. Belon traces the origin of this name to the word gyps, a vulture, and falco; and the word gyrfalco seems immediately formed from geyer, the German for a vulture, and falco. This association of terms, so incompatible with a just designation of birds of different genera, might surprise us, if we had not numerous examples of the uncertainty of naturalists of that day respecting distinctive characters, and the proper allocation of certain animals. The vagueness, however, of such terms can be easily rectified by a more intimate acquaintance with the true characters of the species; yet it leaves an inconvenience of another nature which has resulted from Belon's exclusive application of the Greek term *hierax,* equivalent to the Arabian word *sagr,* to a species which, perhaps, has no existence, or is, at all events, doubtful: probably neither of these words was restrained in its acceptation to a single bird; but was used in a general way to designate a class of birds venerated by the ancient Egyptians, who moreover distinguish the *hieraces* (falcons, hawks, and goshawks) from the vultures, which latter were held in equal veneration, but from different motives. Examination of the Egyptian monuments has proved that it was the common goshawk which was represented on the temples, obelisks, and particularly on the Isiac table, where even the distribution of its colours is observable. If then the *Hiero Falco,* the *Falco sacer,* the *sacre* of Belon and others, can be considered as forming the peculiar type of any one species of falcon, there is no reason why these denominations should be applied to the gerfalcon rather than to the common falcon. It remains, perhaps, yet to be verified, whether the white gerfalcon and the gerfalcons of Iceland and Norway be particular races, simple varieties, or mere individual differences of age and sex. It is, however, safer to stick to the specific characters of the gerfalcon as given in the text, and applied to all of these, than run the risk of adding to the errors and confusion already far too great." (*Ibid.* vol. vi. p. 204.) We would however strongly recommend the reader to the work quoted from. The exact weight, both being in good condition, of the peregrine is two and a-half pounds, and of the gerfalcon four pounds.

2222. *Of the gerfalcons* (*Hiero Falco* Cuv.), it may be observed, that it has not been generally adopted as a genus, although it stands thus in the text of Cuvier with the following generic characters:—"The gerfalcons have the quills of the wings, as in other noble birds to which they are assimilated, except that the beak has only a festoon, as in the ignoble birds. The tail, long and displayed, exceeds the wings, although the latter are very long: their tarsi also, short and reticulated, are feathered to the upper third. Only one species is well known." (*Ibid.* vol. vi. p. 31.)

2223. *The identity of the gerfalcon* with the so-named Iceland falcon, we think there is no reason to doubt, notwithstanding the respect we are inclined to pay to the opinion of Sir John Sebright, who considers them as distinct individuals. We feel assured from the concurrent testimonies of naturalists and falconers, that this falcon is subject to considerable variation in the colours and markings of its plumage, both from age and locality. By the former it varies in common with all the *Falconidæ* at each periodic moulting; and by the latter it would appear to lose the strength of its rufous spots, and to become almost white, as its *habitat* approaches the poles. These views being not only in strict accordance with the known variations which occur in other birds by geographical distribution, but also as agreeing with the notices of observant naturalists and travellers who have examined these birds in various localities, leave us little room to doubt as to the identity of the gerfalcon and the Iceland falcon. The saker and sackerel of the old falconers is now well known to be the gerfalcon at some particular age.

2224. *On the predatory powers of this noble falcon*, Mr. Mudie, in his *Natural History of Birds*, is very emphatic. He considers it the "boldest, the most perfectly winged, and, in proportion to its weight, the strongest both for action and endurance of all the feathered tribes. Dwelling in the wilds of nature, subjected to violent winds, to heavy snows, and to long-continued rains, and compelled often to endure long periods of abstinence in those parts of the world where there is not a tree, and hardly even a bush, for the shelter of a bird, and requiring at other times to range for several hundred miles before it can procure a meal either for itself or for its young; the gerfalcon, estimating according to the average powers and experiences of animals, may be said to have the hardest lot in the whole kingdom. But even upon this, the grand extreme, as it were, of his works, the Creator has not left himself without a witness; for if the task which the gerfalcon is called upon to perform in nature is harder than that of most other birds, the preparation of this falcon for the performance of it is greater in the same proportion." (P. 97.) Its great powers might, indeed, be presupposed on the bare inspection of its skeleton (*fig.* 312.). Little is wasted on the length of the individual bones, but much is expended on their strength. The neck bones all admit of free motion, and, to use the words of Mr. Mudie, "The position of repose, or that in which all the bones bear equally upon each other, is a curve. All the vertebræ of the back, at least as far as the posterior edge of the sternum on the under side, are soldered together, and afford a firm base for the blade-bones, which are considerably produced, and lie nearly parallel to the mesial line of the spine. The coracoid bones are strong, and enlarged at their extremities, where they meet the anterior edge of the sternum, though they are more flattened there, so as to agree in thickness with that bone. The furcal bone is also a perfect circle, and placed with its flat side in the direction of the strain, so that it resists the separating or bringing together of the shoulder joints, the grand centres of motion for the wings, in the most powerful manner that could be obtained from the same quantity of bone. This bone, it will be perceived too, forms a large opening, in which the neck can play freely, without the least pressure upon any of the important vessels which it contains." (P. 100.)

2225. *The bony mechanism of the wings of this falcon* is equally worthy of admiration; and, as it offers an instructive exemplar of the general bony mechanism by which the very powerful flights of these aërial wanderers are operated, we shall present a distinct plan of the bones of the wing of this falcon (*fig.* 336.), where *a* will mark the humerus, which is one of the longest, and also the strongest and heaviest bone in the wing; we say one of the longest, because it may be observed that the cubitus *b*, which corresponds with our fore-arm, or the bony assemblage between our elbow and wrist, is somewhat the longest, and is also slightly curvilinear. With this exception, the sizes and the lengths of the other wing bones diminish in the proportion of their other dimensions; and have this effect, that although, when the wing is in motion, all the parts move with velocities in proportions exactly commensurate to their distances from the centre of action, yet the effect of the whole organ remains uniform; and hence it follows, that this falcon, when engaged in powerful flight, strikes the air uniformly with every portion of the under surface of the wing. It being convenient and usefully illustrative to carry on the comparison between the bones of the wings in birds and those of the arm and hand in man, we proceed to state that *a* and *b* mark the radius and cubitus, or bones of the arm and fore-arm; *c* the ulna, which, it will be observed, is comparatively more slender in the bird than in man. To proceed with our comparison, *d*, *e* mark what we have elsewhere noted as the bastard wing of the bird, corresponding with the human thumb, but which in the bird is confined to two phalanges only. The metacarpal bones, corresponding with the rest of the hand, are marked by *f*, *g*, which space is, however, principally occupied by the type of the human fore-finger. Mr. Mudie, after his admirably descriptive manner, observes, that "The stiffness of the intermediate joints in such a wing, the perfect freedom of the shoulder joints, and the remarkably steady base which, from their size, form, and place, the scapular, the coracoid, and the furcal bone, give to the centre of action, render the flight of the bird exceedingly

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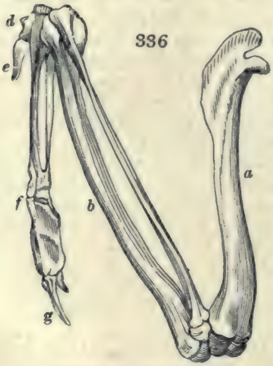

GERFALCON'S WING BONES.

smooth; and though it is heavy for its bulk, and even for the length of its wings, the gerfalcon never appears in the least to labour on the wing. Birds more loosely boned in any of the respects that have been mentioned, are incapable of this perfect steadiness and beauty of flight. The short winged among them flutter, as if they had not wing enough; and the long winged ones have their bodies tossed upward by the down stroke of the wings, and downward by the up stroke, as if their wings were too much for their management. This falcon, however, having to range over somewhat bare and very stormy pastures, has its wings and its body adapted to each other with the utmost nicety, so that it can rush onward in any line of direction that it pleases without the least deviation; therefore it flies from point to point by the shortest line possible; and thus, while it is the perfect model of power in flight, it is at the same time the perfect model of economy." (*Natural History of Birds*, p. 101.) The admirable mechanism of the legs and feet, for its predatory purposes, has been already noticed in p. 667.

2226. *The female gerfalcon is larger than the male;* but in the use of these noble birds, which are so difficult to be obtained, falconers are not so fastidious as to the sex as in the lesser hawks, for where a male of two years old was twenty-two and a half inches in length, and a female of the same age was twenty-four inches only, the difference would not be great between the powers of the individuals. The variations in plumage, according to Mr. Macgillivray, are not so considerable between the sexes in this falcon, the colours of the female being nearly the same as those of the male, except that her spots are larger, particularly on her breast and sides. The accounts of some authors, however, lead us to believe, that as they become aged these spots entirely disappear in both sexes, and leave them almost of a pure white. In those of the most northern localities this is particularly observable.

2227. *On the habits of the gerfalcon, or Iceland falcon,* Mr. Macgillivray remarks, that "It locates in the cold regions of both continents, but particularly in Iceland, and that opportunities of observing its habits are so rare in Britain, that we have few authentic accounts thereof by British writers. Dr. Richardson," he observes, "states that, 'It is a constant resident in the Hudson's Bay territories, where it is named the speckled partridge-hawk and the winterer,' and gives the following anecdote respecting it: — 'In the middle of June, 1821, a pair of these birds attacked me, as I was climbing in the vicinity of their nest, which was built on a lofty precipice on the borders of Point Lake, in latitude 65½°. They flew in circles, uttering loud and harsh screams, and alternately stooping with such velocity, that their motion through the air produced a loud rushing noise. They struck their claws within an inch or two of my head. I endeavoured, by keeping the barrel of my gun close to my cheek, and suddenly elevating its muzzle when they were in the act of striking, to ascertain whether they had the power of instantaneously changing the direction of their rapid course, and found that they invariably rose above the obstacle with the quickness of thought, showing equal acuteness of vision and power of motion.' Mr. Audubon, who found it breeding on the coast of Labrador in 1833, states that its flight resembles that of the peregrine falcon, but is more elevated and rapid; that, when proceeding directly to a certain point, it seldom sailed, but used a constant beat of the wings; and that, after balancing itself in the air over a puffin standing on the ground near its burrow, it would descend upon it with astonishing rapidity, and, shaking its feathers while ascending with its prey, carry it off with the greatest ease. Mr. Jones, who had been a resident in Labrador for twenty years, informed him that this species, which the fishermen called the duck hawk, destroys there an immense number of hares, rock partridges, and willow grouse." (*Rapacious Birds of Great Britain*, p. 154.) Mr. Audubon has figured the young gerfalcon in his accurate and spirited manner, and has described it with equal fidelity.

2228. *Latham, an old writer on falconry,* is warm in his commendation of the gerfalcon, which he affirms to be when reclaimed (but which requires much time and trouble) of a most obedient and even affectionate disposition; in proof of which, he relates the following instance: — "I myselle did know one jer-faulcon that was as good as did flie to the hearne neuer the lesse whensoeuer she did pull downe any one, her loue was so exceeding great to her keeper, that as he did come into the fall, before the hearne was dead, she would presently forsake the quarry, and flie to him for reward, which he continually with great care and skill had given and used her unto at her first making; so would he do also, although she had killed it and taken hold thereon." Blome is also lavish in his praise of the gerfalcon for her hawking qualities, both for land and river. Of her appearance, he says, "She is a stately bird to behold, and most fit for princes and persons of quality."

Subsect. 2. *The Peregrine Falcon.*

2229. *The peregrine falcon* (*F. peregrinus* Linn.), and the common falcon (*F. communis* Linn.) are, by modern naturalists, considered as the same individual bird, but disguised by annual variations of plumage. As its name implies, this is one of the migratory hawks; and it is that particular one which Cuvier describes "as big as a fowl, and always known by a sort of triangular black spot on the cheek," &c. (See *Animal Kingdom of Cuvier*, by Griffith, vol. vi. p. 24.) The slight falcon, which is the usual name by which falconers know the peregrine or migratory hawk, is one of the most important agents in the falconry of the present day. We shall not therefore be blamed for somewhat extending our notices relative to its qualities, characteristics, &c. Fortunately the veil which has so long hung over its history, has been almost torn away by the indefatigable exertions of modern naturalists, in which M. Beckstein and Professor Wilson of Edinburgh have particularly distinguished themselves. Every one interested with regard to these disputed tribes, should have recourse to the admirable paper of the latter gentleman on the subject, which appeared some years ago in the *Memoirs of the Wernerian Society.* To Mr. Macgillivray we are also much indebted for his work, entitled *Descriptions of the Rapacious Birds*, which tends still further to bring them before us in their true form and characters. As regards this particular falcon it is well observed by Mr. Bennett, that it is not surprising that it should, at different ages, have been regarded as so many distinct species by those who had no opportunity of watching the progress of its growth. "At every successive change," observes this ingenious naturalist, "the plumage undergoes a fresh modification, not in colour alone, but even in the distribution of the markings. It is only after the first moulting that it assumes any thing like permanence of character, and at each successive moulting afterwards there is no apparent change. In the first year it is generally of a light brown on the upper parts, with an ash-coloured tinge on the middle of the feathers. Its head and neck are whitish, with a tinge of red, and numerous dark brown spots; its throat and under parts dirty white, with longitudinal spots of brown; its cere bluish horn colour, and its legs yellow. As it advances in age the upper parts became greyish brown, with lighter transverse bars. This conversion takes place in a gradual manner, and affords a certain means of distinguishing the young from the adult bird, not only in the present species, but throughout the whole of the hawk and falcon tribes. At the same time there is developed in the peregrine falcon a character which is not very distinct in the young bird, and is somewhat more faintly marked in the female than in the male, but which may be regarded as one of the best diagnostics of the species. It consists in a broad black streak, passing downwards obliquely over the cheeks from the inner angle of the eye, and giving to the bird a very peculiar expression of countenance. When perfectly full grown, the beak is lead-coloured with a dark tip; the cere has a greenish tinge, and the irides are yellow. The upper parts of the head and neck are bluish black; the black has a lighter tinge of lead-colour, crossed by scarcely perceptible blackish bars; and the black whiskers are strongly developed. The quill feathers of the wings and tail are of a dusky black; the latter crossed by numerous ash-coloured bars, and yellowish white at the tip. This last character is, according to M. Savigny, uniformly indicative of the species in all its stages. All the under parts are white; a series of transverse brownish bars commence on the lower part of the breast, and extend to the tail; the upper part of the breast is marked by a few longitudinal streaks; but the throat is entirely free." (*Zoological Gardens*, vol. ii. p. 117.)

2230. *The male peregrine falcon* (*fig.* 337.), distinguished by falconers from the female by the term tiercel, tercel, or tassel, is thus described by Mr. Macgillivray: — "Form full and robust, its neck rather short, its head large and round. The bill is shortish, thick, and strong; the upper mandible with the edges sharp, slightly inflected, with a distinct process toward the curvature, having on either side a rounded sinus, the tip triagonal, descending obliquely, and acute; the lower mandible involute at the edges, the tip directly truncate, the notch distinct. The legs are robust and short; the tarsi, which are feathered more than half way down, are covered all round with reticularly arranged scales, the anterior larger, broad, and subhexagonal, the posterior small and rounded; the toes are robust, covered above with scutella, scabrous and tubercular beneath; the second and fourth toes are nearly equal, the hind toe shortest, the third longest, the third and fourth connected by a membrane at the base. On the first toe are six, on the second nine, on the third seventeen, on the fourth ten scutella. The claws strong, rounded on the ridge, rather compressed, acute, narrow, and marginate beneath." Wings very long and pointed; primary quails of moderate breadth, attenuated towards the end; the first quill with a sinus near the

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end internally, the second longest; the first a little shorter, the third nearly as long as the first; secondaries thirteen, curved inwards, broad, obtuse with an acumen. Tail about half an inch longer than the closed wings, slightly rounded, the feathers broad and rounded." (*Rapacious Birds*, p. 159.) The colours and markings of the male peregrine falcon are also critically described by our author as follows: — " The bill is blackish blue at the tip, pale blue at the base; the cere oil-green; the bare orbital space orange; the irides dark hazel; the feet lemon-yellow; the claws brownish black. The head, and hind parts and sides of the neck, are greyish black tinged with blue; the rest of the upper parts deep bluish grey, gradually fading into ash-grey behind; the feathers of the back wing-coverts, and upper tail-coverts, all more or less distinctively barred with greyish black. The quills are blackish brown, their inner webs marked with transverse elliptical spots of reddish white. The tail is marked with about twelve bars of blackish brown, the last of which is broad, the rest diminishing in size and intensity of tint, the intervals light bluish grey, the tips brownish white. The throat and fore-neck are white, a broad band of a blackish hue from the angle of the mouth downwards; the cheeks whitish grey; the breast white, with longitudinal lines and triangular spots; the sides ash-grey, longitudinally lined and transversely banded; the tibial feathers ash-grey, transversely banded, as well as the abdominal feathers and lower tail-coverts. The bars on the feathers of the lower parts vary from two to seven, those on the fore-part of the breast having two, on the sides five, some of lower tail-coverts six, the axillary feathers seven. The lower wing-coverts whitish and transversely barred." (P. 161.) The dimensions of the male peregrine are set out with equal precision. It will suffice our purpose to observe, that it measures in length, from the head to end of tail, sixteen inches and a half; to end of wings sixteen; extent of wings thirty-six inches; but it must be observed that he is occasionally seen larger.

2231. *The female peregrine falcon* is more highly prized by many practical falconers than the male, and is by some of them for supereminence exclusively called *the falcon.* Others of this fraternity, on the contrary, will not allow such superiority to be at all considerable between the female and the male, either in size, strength, or daring. In fact, the mutations in plumage in both are so great from year to year, as to make a ready distinction between them somewhat difficult to the practical falconer, as well as to the naturalist also. Contrary, likewise, to the nature of predacious birds in general, in the peregrine neither the size of the sexes nor their plumage, particularly the latter, differ very much. Consequently, the falconer is by no means averse from employing the male peregrine, although, when both are before him, he usually prefers the female. Her dimensions are twenty-one inches and a half to the end of the tail; to the end of the wings thirty inches and three-quarters. Were these stated dimensions of the female peregrine, and those above quoted of the male bird, uniformly as there laid down, then we should not wonder at the great preference among practical falconers shown for the female; but having seen breeding specimens of both on the southern coast of our country, we feel assured that such disproportion is not uniform. It is a supposition, not only among naturalists, but also among falconers, that the lanner and female peregrine are identities; such are the mystifications attendant on the subject. In tintings and markings Mr. Macgillivray says, the male varies but slightly; age, however, renders the spots and bars smaller, and it more decidedly increases the ashen grey of the hinder parts. The females vary rather more than the males, by changing from a greyish brown to a brownish grey. Their lower parts are generally of a lightish brown, and altogether their markings may be said to be usually larger than those of the male. The peregrine falcon, it may be well to state, is extensively, though not universally, distributed. It is found in most mountainous and rocky situations throughout the temperate and colder parts of Europe; it is also common in North America and in New Holland. Its migratory character, we believe, to be only fully developed in cold countries: with us there is reason to consider it as stationary, or at least its migrations are not uniform. As a British resident, we are convinced that it is much more extensively distributed than is commonly supposed; and from our own experience we agree with the learned editor of the last edition of *Montague's Ornithological Dictionary*, that there is not a spot on any part of our coast, from north to south, where the cliffs rise to the height of three or four hundred feet, but they are scattered on during the breeding seasons, and from which they seldom wholly retire, although they force their young, when fully fledged, to seek fresh quarters. We of our own knowledge can affirm, that they breed every year on the rocky precipices on the south of the Isle of Wight; and if we mistake not, Mr. Joseph Squire, of Yarmouth, Isle of Wight, has one or more which have been taken as eyasses from thence. They are not uncommon in the Shetland and Orkney Islands, and are seen on the cliffs of the Hebrides. Throughout the Scotch coasts, particularly on the eastern rocky precipices, they breed annually. Sir William Jardine also notices the vale of Moffat in Dumfriesshire, and the confines of Selkirkshire, as favourite stations. Pennant was witness to their existence in Wales, and he particularises the rock of Llandedno in Caernarvonshire as supplying a very favourite spot for the nidification of peregrine falcons. It is further insinuated, that the breed produced here was, in the falconer's phraseology, of " a generous kind,' *i. e.* excellent at plunder and destruction, which character is borne out by a letter extant in the Gladdaeth Library, from the Lord-treasurer Burleigh to an ancestor of Sir Roger Mostyn, in which his lordship thanks him for a present of a fine cast of *hawks* taken on these rocks which belong to his family. Sir John Sebright observes, that "Slight falcons take up their abode every year, from October to November, until the spring, upon Westminster Abbey, and upon other churches in the metropolis: this is well known to the London pigeon-fanciers, from the great havoc they make in their flight." We ourselves know that one was killed within the limits of the metropolis in 1837. The lanner and lannaret (*F. lannarius* Linn.) of bird fanciers, we repeat, are without doubt the male and female peregrine falcon, although described by Linnæus as distinct species.

2232. *The action of the peregrine falcon is thus described by Mr. Macgillivray:*—"Its direct flight is extremely rapid, is performed by quick beats of the wing, and is very similar to that of the rock pigeon. When proceeding in haste from its breeding place, or roosting station, towards a distant part of the country, it very seldom sails, or moves forward at intervals with extended wings; but when sauntering, as it were, about its retreat, it employs both modes of flight, as it also does, in common with many other hawks, when searching for prey. Yet it is hardly ever seen to float, or sail along in circles, as eagles, buzzards, and harriers are wont to do, but performs its short gyrations as if in haste, and the moment an opportunity occurs, comes down upon its prey, either in a curved sweep, or like a stone falling from the air." (P. 164.) In the choice of its food this author hints, that it shows a decided predilection for wild game, seldom regaling on the feathered produce of the farmyard. It riots among the moor-fowl; and as a proof of its vast powers, the keeper of the Bass Rock informed Mr. Macgillivray, that he had found an entire blackcock in the nest of this falcon, with which it is probable he must have flown some miles. From the remnants left around their nests, it appears that grouse, partridges, plovers, ducks, auks, guillemots, and the smaller varieties of the gull breeds, form their principal prey. But although they will strike at rabbits and hares, they are unable to kill them, unless very young. A peregrine cannot carry a blackcock; so that the keeper's story to Mr. Macgillivray is at least doubtful.

2233. *The daring of the peregrine falcon* equals, if it do not surpass, that of most other of the falcon tribe. "A female in Colonel Montague's possession, which had never enjoyed its native habits of destruction, having been taken before she could fly, and had never been much used to slaughter, except with an occasional small bird, was suffered to be a whole day without food, at the expiration of which an old male heron was introduced into the room where the falcon was at liberty, the point of the heron's bill having been previously sawed off. As soon as the heron was in motion, the falcon, who was also deprived of the means of flight, took post on a stool which was at one end of the room; and as the heron, regardless of his enemy, traversed the apartment, the falcon motionless kept her eyes fixed on her destined prey, till, after several turns round the room, she judged the heron was sufficiently near to effect her purpose, when she sprang at the head, intending to seize that part with her talons. In this, however, she failed, the stool not having given her sufficient elevation to reach the high-erected head of the heron. This failure might probably have cost the falcon her life, had the bill of her antagonist been perfect; for she received a blow on the body that must otherwise have inflicted a severe, if not a mortal, wound, from so pointed an instrument, urged with such power. Baffled in this attempt, and having received a severe blow, it was conjectured no further attack would be made until the calls of hunger became more urgent. The falcon, however, soon regained her station; and it was not long before we perceived the heron, regardless of his foe, again pass very near, when the falcon, in a second attempt to seize her prey as before, was equally foiled, and again received a severe check from the bill of the heron. Finding her efforts had failed for want of the advantage nature had assigned her, instinct directed the falcon to a box that stood on the opposite side of the room, which was somewhat higher. Here she again seemed to meditate another attack, by watching every motion of the heron, who continued his rounds with a view to make his escape; and it was not long before an opportunity offered for falco to make an assault from her more elevated station. Here she found an humble substitute for those powers with which nature had so amply furnished her, but of which she had been deprived, and at last succeeded in springing from her perch, and seizing the unfortunate heron by the head and upper part of the neck with her talons, which instantly brought him to the ground. Now the unequal contest was soon determined; for in vain did the superior weight and strength of the heron drag and flounder with his enemy across the floor; in vain did he flap his unwieldy pinions to shake off the tyrant of the air; nor could even his gigantic legs force her from the bloody grasp; her work was short and certain; no efforts could compel her now to quit her deadly gripe; the powerful and only dreaded arms of her antagonist were secured, and, thus disarmed, he became a sure and easy prey. Scarcely was the gigantic bird prostrate on the ground, than death ensued; for in this noble race, destined for blood and slaughter, torture makes no part of its nature; but, like what we are told o the generous lion, exulting in death but disdaining cruelty, in less than half a minute did the falcon tear out the gullet and windpipe of the heron, and regale on the head and neck." (*Montague's Ornithological Dictionary*, 2d edit. p. 360.) Colonel Thornton asserts that in his hawking career he could never obtain a tiercel (male) that would fly at ducks, but from Hambledon in Yorkshire, although he had tried many others. The female peregrine, he observes, is a match for herons and geese, and will also stoop at lesser game equally well; and that where perseverance is necessary, she excels the tiercel or male.

2234. *This falcon was also known as the haggard falcon* of most of the older falconers, and was with Latham the chief of all falcons. Turberville ranks her as the second only in importance; but it must be noted that he does this under an impression that the slight, or peregrine falcon, and Latham's favourite, known to Latham as the haggard falcon, are distinct species, which there is every reason to believe is not the case. This continual arbitrary application of names by the old falconers, produced by a confined knowledge of zoology, has much of it descended to the moderns also, among whom it tends as greatly to confuse the critical definitions of individuals, as the periodical mutations of the birds themselves. Blome's description of this bird is to the following effect: — "The faulcon, or slight faulcon, is of several shapes, viz. some large, some small, others long shaped, and some round trust; so are they also of several mailes, as white, black, brown, and russet. The principal sorts of faulcons are by all agreed to be the intermewed haggard and the lentiner faulcon, now much in use. Those that are excellent are thus shaped: viz. broad-shouldered, carrying her breadth down to her train wide and strong, with short arms and a large foot, a short beak and a large nare and close plumed, high thighs with white on the insides, great full black eyes, a large breast, her head plumed dark, or black, with a white wreath. In her flight she is known from another hawk by her nimble and quick getting up to her place, by her strong stirring, and by her skill in her stooping, and killing her game. She is very bold and hardy, of a great strength and courage to endure both wind and weather, gaining her prey by main wing, and into what place she cometh she is victor. By nature she is very hot, and consequently the better able to endure cold weather, witness her high soaring in the air; and likewise when once she begins to cast her feathers, she meweth with more expedition. Her greatest fault is, she is more difficult to be reclaimed than any other hawk. From this bird the faulconer is said to derive his name, as well as the art itself; for that it seems the chief end of a faulconer, and the art of faulconry is rightly to reclaim and man the faulcon; for she fleeth at all games, both at field and river, but most proper for the river; so that he that throughly understands how to bring the faulcon to that perfection that she is capable of, may well deserve the name of a master of this art. This hawk is a great pains-taker, no weather discouraging her from her game, if possible to be found; and altogether she hath laboured two or three days together in ill weather, yet she will not be tired; and indeed every hawk requireth exercise. But old staunch hawks should have more rest." (*Gentleman's Recreations*, p. 29.)

2235. *Importations of the slight falcon* are annually made from the open grounds around Falconswaard for the use of British falconers in flying herons, in lieu of the gerfalcon, which is more expensive and difficult to obtain.

SUBSECT. 3. *The Lanner and Sacre.*

2236. ***The lanner and lanneret, the sacre and sackerel,*** as disputed identities of the peregrine falcon, we have thus brought under one heading.

2237. *The lanner* (*F. lannarius* Linn.). Notwithstanding this bird has been described by Linnæus, Willoughby, Ray, Temminck, Montague, Cuvier, Fleming, and other eminent naturalists, as a distinct individual hawk, there are other most respectable authorities, who, by omitting it in their lists of the raptorial birds, tacitly deny its existence as such. Among these dissentients we may particularly notice Selby, Vigors, and Macgillivray. Sir John Sebright, also, who is not apt to form an opinion without sufficient grounds, is a great sceptic as to the existence of this bird as a distinct falcon, observing that he never himself saw either a lanner, or lanneret, in any collection to which he had access; neither had he ever met with any falconer who had seen either. Linnæus, however, enumerates three varieties of it, and then sums up the account by stating, that it is of the size of a buzzard; that it migrates; builds its nest in low trees, and is much esteemed in falconry. A specimen has been lately procured from the north of Africa by the Duke of Leeds, proving it a distinct hawk. Cuvier describes it thus: — "Wings two-thirds as long as the tail; middle toe shorter than the tarsus; mustaches very narrow; feet bluish; two first quills notched at the end. Inhabits the north of Europe. Length one foot and a half." Fleming says the head of the female is dark brown, and the throat and under tail-coverts have narrow streaks. Bewick tells us that it is not common in England, but that it breeds in Ireland, and is frequent in various parts of Europe. This writer also observes, that it derives its name from the mode of tearing its prey into small pieces with its bill. Pennant, in his *British Zoology*, both describes and figures a bird which "was communicated to him by the name of lanner, that had been taken in a decoy in Lincolnshire; and which, from the description given of it, corresponds with the principal characters attributed to it by other naturalists. Belon, also, describes this falcon as common in France in his time. Buffon, on the contrary, insinuates that if such were the case, it must have become extinct, or otherwise so scarce as to have escaped notice of late years.

2238. *The lanner's existence as a British bird therefore*, at the present time, may be considered as somewhat doubtful. Shaw, we think, concludes his account of this bird wisely, although he leaves the matter equally uncertain: — "After all these descriptions, one would be inclined to suppose this bird entitled to the rank it has hitherto maintained in ornithological writings. I am informed, however, on seemingly good authority, that the lanner, so often considered as a distinct species both by falconers and naturalists, is in reality no other than the peregine falcon in its first or second year, and before it has arrived at its full and genuine plumage. It is for this reason that I venture to assign it the place it occupies in the present work; though, at the same time, I must beg to be understood as being by no means perfectly convinced of the truth of this supposition. The chief objection seems to be the colour of the feet, which are blue, not yellow as in the peregrine. Some have supposed both the lanner and the sacre to be varieties of the gerfalcon." (Vol. vii. p. 131.)

2239. *The sacre and sackerel* (*Sacer* Linn.) are names met with in all the olden lists of hawks, and these equivocal gentry have the authority of Linnæus for their pretensions. The researches of subsequent naturalists have, however, rendered the existence of the sacre, as a distinct species, more than doubtful: on the contrary, there is every reason to consider the object so denominated, to be neither more nor less than the peregrine falcon of a certain age. This view is rendered the more probable, as the name *sacre* implies a particular brown hue, which exactly corresponds with the colour of the plumage assumed by the peregrine, after one of its important moultings.

Subsect. 4. *The Hobby.*

2240 *The hobby* (*F. subbuteo* Linn.) is a long winged hawk (*fig.* 338.), and though small in bulk, his length of wings and the form of his beak and talons rank him high in the list of the naturalist and falconer. He is thus described: length, twelve inches; spread of wing, twenty-six; tail, five and three-quarters, rather rounded, and furnished with twelve broad acuminated feathers. The tips of the wings, which reach beyond the extremity of the tail, are narrow and rather pointed towards the extremity; the first primary is notched out on the inner web, and is but little shorter than the second, which has its outer web slightly cut out. "The bill is blue; cere and orbits of the eyes, yellow; irides, orange; a light coloured streak passes over each eye; the top of the head and back are bluish black; wing-coverts the same, but in some are edged with rust colour; the hinder part of the neck is marked with two pale yellow spots; a black mark from behind each eye, pointing forward, is extended down on the neck; the breast and belly are pale, marked with dusky streaks; the thighs rusty, with long dusky streaks; wings brown; the two middle tail feathers deep dove-colour, the others barred with rusty, and tipped with white; the legs and feet are yellow. The female is larger than the male, which in the falconer's vocabulary is her jack or robin. Her length is thirteen inches; extent of wings twenty-eight; bill and feet the same colour as the male; feathers of head margined with brown; throat and neck white; hinder part of neck of a brownish white; breast and belly reddish white, striped with brown; the spots on her breast more conspicuous than those of the male. The hobby breeds with us, lays three or four bluish white eggs, irregularly spotted with grey and olive, and is said to emigrate in October. It was, we are told, formerly used in the taking of larks and other small birds, in the following singular manner, known by the term *daring:* when the hawk was cast off, while hovering on the wing, she was sure to fix larks, and whatever small birds were there, immovably to the ground, through fear; which, thus paralysed, became an easy prey to the fowler who drew a net over them. Buffon says, 'the hobby was also regularly flown at partridges and quails.'" (*Bewick's British Birds*, p. 43.) These birds migrate in winter, and return in the

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spring for the purposes of breeding. "The hobby builds its nest," says Colonel Montague, "in trees, and sometimes takes possession of a deserted crow's nest; the number of its eggs is usually four, of a bluish white, with olive-green or yellowish brown blotches. We have seen three young ones taken from a nest, which were not of so dark a colour as the old birds. Small as this species of falcon is, it is inferior to none in point of courage; while its flight is wonderfully rapid, and supported with undiminished vigour for a considerable time: it will frequently pounce upon a partridge; but its favourite game seems to be the lark, to which it is a great enemy; and it is frequently taken in pursuit of them by bird-catchers in their nets. We have often," continues the same authority, "witnessed its flight in pursuit of this bird; and it is astonishing to observe how dexterously the little creature avoids the fatal stroke until it becomes fatigued. A hobby in pursuit of a lark was joined by a hen harrier, who, not being so rapid on wing, was usually behind, and ready to avail himself of the sudden turns the unfortunate lark was compelled to make, to avoid the talons of the hobby; however, after numberless evolutions, the hen harrier relinquished, being unequal to the chase, and left the deadly stroke to one better adapted for rapid and durable flight, and aërial evolutions. The country was open, and as far as the eye could discern the chase continued, but doubtless without a chance of the lark's avoiding the fatal blow." (*Ornithological Dictionary*, 2d ed. p. 256.) The hobby, both male and female, though naturally impatient, yet, with much care and perseverance, may be trained to *wait on*, and will afford some sport, small as is their size, when flown at blackbirds, thrushes, larks, &c.

2241. *These minikin falcons were great favourites* with some of the most reputed old falconers. Blome is loud in their praise: — "This hawk," he says, "next the merlin, is the least of all hawks, yet had in good esteem, being observed to follow the falconer and dogs in the field; and when she espies any lark or other small bird, she makes at them with great courage, few escaping her. She affords very good diversion with nets and spaniels, which is thus done, — cause your dogs to range and beat about the field, to spring the larks; but the poor birds espying the hawk soaring aloft, dare not betake themselves to their wings, thinking to lie close; and so you draw the nets over them and take them. The hobby lieth indifferent well on her wings; and when she follows the spaniels as they range about, will make divers turns on them, so that when the game is sprung, she may the more advantageously stoop from her wings; and being well manned, she serves for several sorts of game. The hobby must be taught and trained in each particular like a falcon; and observe not to flee her in the heat of the day, for then she is apt to soar and be lost (although but for a time, being to be found again); but about two o'clock in the afternoon begin to flee her, and so hold on till near sunset, and longer is not good, for fear of losing her; and if you order her according to the directions given for the falcon, she will make a hawk of great delight, for you may flee her oftener, and when you can't any other. She is often made to flee the partridge at the first season of the year; also the quail, wheatear, and the like. In plain champain fields, where great and tall bushes grow, the hobby will make abundance of stoopings (which resting sometimes), and if the bushes stand at some reasonable distance, the birds will be so terrified at the sight of her, as to suffer you almost to take them up with your hand; but may easily kill them with a cross-bow. And this they will do seven or eight times, making their stoopings with rest between, so that the sport will last three or four hours. The eyass hobby is best for the mount; and I hold this way the best for reclaiming and preparing them: — you must take her out of the nest a little before she is able to stand on the side thereof; then provide some other nest on any tree in your garden or orchard, about seven or eight foot from the ground; and there at set times feed her with bits from the sharp end of a stick, and when she is able to stand stiff on her legs, and to tug hard for her meat, then teach her to come from thence by your art, in luring and calling her, though it be but a foot at first, and so by degrees, further and further, until she will come from the nest to you, as far as she can well hear you, and there must she attend on her wings until you take her in. When she is full summed, she must have her jesses, bewits, and bells, with other usual ornaments and dressings; then must she be made acquainted with the hood, and carriage on your fist all day; she must be also accustomed to men, horses, and dogs; and she must be trained with larks, which had need be let loose with a great deal of caution, that she perceive not they are let go from your hand; her first trains should be let loose in a creance of brown thread, and mounted forty or fifty foot high before you unhood her; three or four trains thus killed will be a sufficient introduction. When she is thus throughly made, you may flee her at the lark with advantage of the wind, and near approach, and afterwards you need not use so much care, for she will soon gain strength, and understand her business. At such times when you do not use nor flee her, you need to look after her only at feeding times, remembering to draw her by your lure and voice at least a quarter, if not half a mile from home, and there feed and leave her; for when she hath once fed, feaked, and rejoyced, she will soon find the way home to the place where she was bred and trained up. On resting days when she is gorged, you may find her in the heat of the day flying and soaring aloft, whereby she becomes acquainted with the adjacent places." (*Gentleman's Recreations,* p. 1.) At the present day the hobby has lost amongst falconers all its pristine repute. They assert its unfitness for the purposes of falconry, maintaining that its chief food are insects. They admit that it will take a small bird "from the hand."

Subsect. 5. *The Kestrel.*

2242. *The kestrel, or kestril* (*F. tinnunculus* Linn.), the stone-gall, stannel-hawk, or the wind-hover, so called from its habit of hovering in the wind (*fig.* 339.). Though it is one of the most common of our hawks, it is yet one of the most elegant, uniting, in an eminent degree, lightness with strength in its structure. The wings, when closed, do not reach to the end of the tail by two inches. The body is ovate in shape, the bill short and strong, having the tooth-like process and medial festoon very distinct, thus gaining in one of the requisite characteristics of rank what it loses in the other. The male and female differ so considerably in plumage, that a distinct description of each is necessary. The female, according to Montague, is considerably larger than the male, which Mr. Macgillivray denies; his measurement of a male kestrel being, "length to the end of tail thirteen inches and a half; extent of wings twenty-seven: of the female, length fourteen inches and a half; extent of wings thirty."

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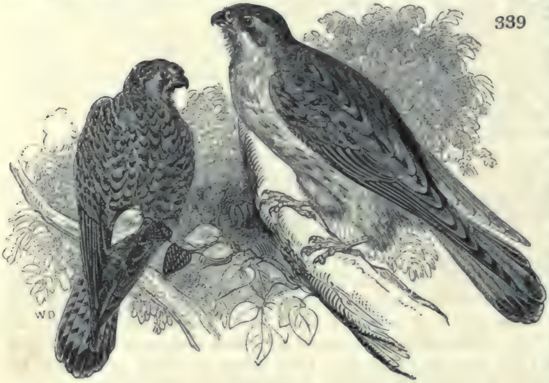

THE KESTREL.

2243. *The male kestrel* is thus described by Bewick, from one he had in his own possession, probably, as he observes, an old one:—"Length fourteen inches; breadth two feet three inches; bill blue; cere and eyelids yellow; eyes black; forehead dull yellow; top of the head, back part of the neck and sides, as far as the points of the wings, lead colour, faintly streaked with black; the cheeks are paler, from the corner of the mouth on each side a darkish streak points downwards; back and coverts of the wings bright cinnamon brown, spotted with black; quill feathers dusky, with light edges; inside of the wings white, beautifully spotted with brown on the under coverts, and barred on all the quills, with pale ash; the under part of the body is pale rust colour, streaked and spotted with black; thighs plain; rump and upper coverts lead-blue; and the tail feathers fine blue grey, with black shafts; towards the end is a broad black bar, both on the upper part and under sides; the tips are white, legs yellow, claws black. (*British Birds,* p. 39.)

2244. "*The female kestrel,*" Colonel Montague observes, "is considerably larger, and is distinguished from the other sex by the head and tail being of the same colour as the back, which is not so bright a red brown as the male; the under parts are also lighter, and the black spots not so distinct, but more in dusky streaks; the tail also is marked with transverse dusky bars, with a broad one near the end." (P. 276.) It is observed that the kestrel of both sexes varies in size and colour. In the young, the grey on the head is less clear than in the older; and as the period of moulting approaches, the plumage is less vivid—a proof, that a deciduous change of feathers is essential to the integrity of their pristine state. Mr. Macgillivray observes on a remarkable difference in the digestive organs of kestrels, which he had examined:—"Of two males and two females the œsophagus in all was four inches and a half in length; in two no cæcum; in another a mere vestige of one; and in another two very distinct cæca were found. The general length of the intestinal canal varied from twenty-two to twenty-five inches." We have ourselves observed very considerable alterations in the size and length of the different portions of this canal also in gallinaceous birds, or fowls, as popularly so called. The principal food of the kestrel is said to be field-mice, and by examining the contents of the stomach of such as have been shot, the exuviæ of beetles, particularly of the *Scarabeus Stercorarius,* or dung-beetle, being found in considerable numbers, show that it is also insectivorous as well as carnivorous. Mr. Macgillivray, also, with many bones of *Glires,* the lesser *Glires* or gnawers, has found the feet and other parts of birds of various kinds in the stomach of these birds. The kestrel is also accused, in Scotland, of carrying off young chickens, which feat we have ourselves witnessed it perform, as well as the pouncing on larks and other small birds. Mr. Macgillivray's translation of Buffon's account of the predatory habits of this bird is too interesting, and too much *à la Buffon* to be omitted: "The cresserelle," says he, "is the most common rapacious bird in most of our French provinces, and especially in Burgundy. There is not an old castle or a deserted tower, which it does not frequent and inhabit. It is particularly in the morning and evening that it is seen flying about these old buildings, and that it is heard more frequently than seen. It has a hurried cry of *pli, pli, pli,* or *pri, pri, pri,* which it incessantly repeats as it flies, and which frightens all the little birds, on which it darts like an arrow, and which it seizes with its talons. If it should happen to miss them at the first plunge, it pursues them into the houses, fearless of danger. I have more than once seen my people take a cresserelle, and the little bird which it was pursuing, by closing the window of a room, or the door of a gallery, which were more than two hundred yards distant from the old tower from which it had issued. When it has seized and carried off the bird, it kills and plucks it very neatly before eating it. It does not take so much trouble with mice, for it swallows the smaller whole, and tears the others to pieces. All the soft parts of the body of the mouse, are digested in the stomach of this bird; but the skin is rolled up so as to form a little pellet, which it voids by the mouth, and not by the intestines, for its excrements are almost liquid and whitish. On putting these pellets, which it vomits, into hot water, to soften and unravel them, you find the entire skin of the mouse, as if it had been flayed. It at first feeds the young with insects, and afterwards carries to them plenty of field-mice, which it perceives on the ground from the greatest height in the air, when it slowly wheels, and often remains stationary to spy its prey, on which it falls in a moment. It sometimes carries off a red partridge much heavier than itself; it also often catches pigeons which straggle from the flocks; but its most common prey, next to field-mice and reptiles, consists of sparrows, chaffinches, and other small birds." (*Loc. cit.* p. 202.) Though Buffon's account is interesting, it is erroneous. The kestrel never kills birds when they are on the wing. It kills them, as it does mice, whilst they are running or at rest on the ground.

2245. *The propagation of the kestrel* is commenced about the end of the month of March; the male and female remaining together through the year. This bird may be met with in plenty through every part of Great Britain, and equally in cultivated as in wild localities. The nest it makes is simple, as it may be said to be rather laid than built in the excavations of the cliffs on sea-coasts. In more inland situations, crevices in ruins are sometimes chosen, in which a few sticks, laid without apparent method, and topped with wool, hair, or moss, serve the purpose of nidification. Cavities in trees are also not unfrequently made use of for the purpose; and, occasionally, kestrels occupy the deserted nest of one of the pie tribe. Four or five eggs are usually deposited, rather of a short, elliptical, than round form, uniform, or almost uniform, at both ends, of a pale orange colour, dotted or splashed with dirty red.

2246. *The flight of the kestrel is singular, yet graceful.* It appears like suspension in the air without effort. If steadily observed, however, a slight quivering of the wings may be noticed, which fans the air, and thus supports the bird, who at the same moment, and with little effort, fills her whole body with air. The kestrel was formerly used in Great Britain in hawking partridges and other birds of straight flight; but although it is easily reclaimed, more efficient agents have led to the discontinuance of its use. Nevertheless, some of the old writers describe it as a good *field-hawk*, and praise it for being a fast goer *afore-head.* It was used for pheasant hawking sometimes; but of course it was in the *open*, as the long winged hawks are unfit for *cover* hawking. The kestrel is found throughout Europe and the temperate parts of North America. Selby says that the kestrel hawks after cockchaffers in the evening. He has seen this bird dart through a swarm of them, and seizing one in each claw, eat them while on the wing.

Subsect. 6. *The Merlin.*

2247. *The merlin* (*F. Œsalon* Linn.) is the smallest of the hawks, but it also is one of the most active and beautiful. Little longer than a blackbird, it can kill a partridge at a single pounce, such is its power and determination. The wings reach to within less than two inches of the tip of the tail, which is marked with alternate dusky and pale bars. The male merlin, called by the older falconers the jack of the female, as it would appear, is less rammish than most hawks. Colonel Montague tells us, that one taken in a trap-cage, into which he had entered in pursuit of a bullfinch, proved very docile; and, what was remarkable, was very fond of drinking water; and, indeed, showed signs of much distress when it was not at hand, which, it was apprehended, was occasioned by fever, as it died of inflammation of the chest. There is a quickness and general liveliness of manner in both the male and female merlin, very different from the grave deportment of the hawk tribe generally. All their movements bespeak volatility and hurried purpose; on the wing both are rapid in the extreme. In external markings the male is distinguished, according to Mr. Macgillivray, by having his upper parts tinged with a dark bluish grey, each feather having a black central line. The lower parts of the body are of a light reddish yellow, with oblong dark brown spots. The upper part of the head is of a brownish grey, the lower part of a greyish white. The bill is of a pale blue at the base, bluish black at the end; in figure it is short and strong, its upper mandible being sharply curved from the base; the tomia sharp anteriorly, with a slight central festoon, having the angular process characteristic of the genus very distinct. The lower mandible has a truncated tip and semicircular notch directly behind it. In length the merlin ranges from ten to twelve inches; its weight about five ounces.

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2248. *The female merlin* differs from the male in being somewhat larger, and somewhat differently marked and coloured. The general tinting, according to Mr. Macgillivray, of the upper parts, "is deep brown, slightly tinged with blue, each feather having a central line of black. Part of the hind-neck is yellowish white, the feathers there tipped with brown. The quills, larger coverts, and alula, have a regular series of rounded light red spots on both webs, and their tips are of the same colour but paler. On the tail are five conspicuous bars of pale reddish brown spots, and a terminal band of greyish white, the lateral feathers having two more of these light bars at the base. A yellowish line, margined beneath with blackish brown, extends over the eye. The throat and cheeks are yellowish white, the longer feathers of the latter tipped with brown; and from the angle of the mouth is a band of brown, formed by the central markings of the feathers. The lower parts in general are pale reddish yellow, marked with numerous oblong spots of brown, larger than those of the male; the abdominal feathers and lower tail-coverts nearly spotless, a single row of the latter on each side having a line of brown on each feather. The lower wing-coverts are brownish red, spotted with yellowish white; the long feathers of the leg marked with brown lines, the shorter nearly white and without markings." (*Rapacious Birds*, p. 215.) Length twelve and a half inches; extent of wings twenty-eight inches. In both male and female the legs, which are slender, are feathered before more than a third of their length, and are compressed behind, and covered with scales. The flight of the merlin, we are told by the accurate authority just quoted, "is very similar to that of the sparrow-hawk, being rapid, protracted, and devious. But it generally flies at a greater height than that bird, although you may also see it skimming over the fields or copses, and gliding along the hedges. It often captures small birds by thus coming upon them unawares; but it may as often be observed pursuing one in the open sky, and ultimately securing it, sometimes after a long chase. It perches on a stone or crag, apparently for the purpose of inspecting the neighbourhood; and from its station, should a flock of small birds come up, it fixes upon an individual, from the pursuit of which it is not drawn by the presence of others. Its prey consists of larks, chaffinches, thrushes, sand-pipers, and partridges, though very rarely. Some authors state that it also occasionally feeds on beetles and other insects; which is a habit common to all the smaller hawks, as well as most owls." (*Ibid.* p. 217.)

2249. *The merlin is by no means a common bird;* it is perhaps more frequent in Scotland than in any other part of the British dominions, where it appears to be a constant resident. It visits England in October, about the time the hobby retires; but even then it seldom penetrates further south than Cumberland, where, Dr. Latham informs us, it has been found more than once with four young ones placed on the ground: — "In the middle of a high clump of heath (*Montague's Ornithological Dictionary*, p. 321.), there were found on the Moors of Northumberland three young ones, about half-grown, but no nest. They were well concealed, and could not have been discovered but by a setting-dog making a point at them. The eggs are said to be of a plain chocolate colour, and an instance has been known of the birds depositing them in a deserted crow's nest." Cuvier states that it builds in rocks. Dr. Fleming, on the contrary, says its nidification is usually in trees or on the ground, where it lays five or six eggs of a whitish cast, except one, which has a green tinge; notwithstanding which discrepancy both writers are probably correct. Quails, blackbirds, thrushes, snipes, and larks are taken with this minikin hawk, and she has been successfully flown at partridges; we have heard, but we doubt it, woodcocks noticed as being her quarry occasionally. This hawk, when young, is reclaimed by the same methods as are used toward the slight falcon. Blome says, "It is usual to fly a cast at a time, which is very pleasant; for the birds are so terrified at the sight of them, that they choose rather to take shelter under the horse's legs, than to rely on their wings. And a cast of merlins makes excellent sport for the snipe in the winter, being much like the flight of the hern and the gerfaulcon. To order this aright, do thus: when your merlins are throughly manned and made gentle, carry them into the field, and having found a lark, or some small bird, make loose their hoods, and go as near as you can into the wind to the bird, and as soon as the bird riseth unhood them, and cast them off to flee, and when they have beaten down the game, let them feed thereon for their reward; at first you must flee them with the most advantage you can, that they may not be over-wrought." (P. 30.)

Sect. IV. *Goshawks, Sparrow-hawks, Kites, and Buzzards, as Preying Birds of Low Flight.*

2250. *If, after what has been stated,* the practical falconer should not hold the verbal distinctions of noble, semi-noble, and ignoble falcons and hawks in much respect, he must nevertheless by no means be indifferent to those more important practical distinctions of *long winged* and *short winged.* On a due attention to these, in a great measure, will depend his reputation as a successful falconer, as will be made apparent in the progress of our practical detail. Having just described those rapacious birds that usually strip their prey in the air, we shall now proceed to such as usually seize theirs on or near the earth.

2251. *The hawks* (*Autours* Cuv.), formed the second division of ignoble birds in the Cuvierian classification, as the eagles formed the first. This great naturalist observes, that, like the three last tribes of eagles, the hawks have wings shorter than the tail; but as a redeeming trait their beak bends from its base. Such are more particularly called goshawks as have the tarsi shielded, and rather short. The goshawks, sparrow-hawks, and buzzards, not only have the general length of their wings shortened, but, by having the third and fourth wing feather nearly of the same length at the same time that the second feather is rather the longest, their wings when spread have a somewhat rounded appearance, instead of a lengthened and pointed one; and which form, it is evident, must have much effect on their manner of attacking their prey. Thus they are not able to soar aloft to reach it, or pounce down on it from above, after the manner of the more noble falcons; but they take it by *raking,* that is, by seizing on it near the ground.

Subsect. 1. *The Goshawk.*

2252. *The common goshawk* (*F. palumbarius* Linn.) "is the only species of this country. It is brown, with whitish eyelids: white underneath, barred across with brown in the adult; dotted when young; five browner bands on the tail. It equals the gerfalcon in size, but not in courage, falling always obliquely on its prey. It is, nevertheless, used in falconry for weaker game. It is common in all our hills and low mountains." (*Animal Kingdom,* vol. vi. p. 48.) Bewick's description of it is, "Length of the female from one foot ten inches to two feet, the male is a third less; the bill blue, tipped with black; cere green; eyes yellow, a whitish line passes over each eye; the head and all the upper parts are of a deep brown; each side of the neck is irregularly marked with white; the breast and belly are white, with a number of wavy lines or bars of black; the tail long, of an ash colour, and crossed with four or five dusky bars; legs yellow; claws black; the wings are much shorter than the tail." Buffon, who brought up two young birds of this kind, a male and a female, makes the following observation: — "That the goshawk, before it has shed its feathers, that is, in its first year, is marked on the breast and belly with longitudinal brown spots; but after it has had two moultings they disappear, and their place is occupied by transverse bars, which

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continue during the rest of its life." He observes further, that "Though the male was much smaller than the female, it was fiercer and more vicious. Feeds on mice and small birds, and eagerly devours raw flesh; it plucks the birds very neatly, and tears them into pieces before it eats them, but swallows the pieces entire, and frequently disgorges the hair rolled up in small pellets." Its breeding place is in trees, and sometimes in rocky excavations, laying from two to four eggs of a bluish white, with brown spots and streaks of the same. Sir John Sebright says of it, that "It is a short winged hawk, much larger than the slight falcon, from which it also differs as much in its appearance as in its manner of flying." The goshawk is occasionally bred in Scotland, but more frequently in France and Germany. It is brought into England for the use of our falconers, from Falconswaard, and usually in a reclaimed state. Montague says, "It is not uncommon in the wild and mountainous parts of Scotland; particularly it is known to breed in the forest of Rothemurchus and on the woody banks of the Dee: goshawks are also said to be numerous in the Orkney Islands." The flight of this hawk is very rapid, but is generally low, and it usually strikes its prey near the ground, being incapable of mounting. "If its prey take refuge, it will wait patiently on a tree, or other elevation, until the game, pressed by hunger, is induced to move." Colonel Thornton informs us that he flew one at a pheasant, which retreating into cover and the hawk following it, was lost. At ten o'clock the next morning, the falconer found his goshawk, and as he caught her, the pheasant seeing its enemy secured, first ran and then rose." (*Ornithological Dictionary*, p. 222.)

2253. *The older falconers preferred the largest sized goshawks*, and those of the whitest mail to all others; and they also considered those of Norway to be the best. The goshawk, however, come from where it will, requires much management in its training, it being naturally shy, and often perverse, and is withal sometimes so fickle as to make a frequent change of treatment, according to circumstances, necessary But when it is once thoroughly reclaimed, it usually continues mild and obedient, and even exhibits strong marks of attachment. In her training, the principal difficulty is to teach her to face men, horses, and dogs. To avoid this trouble, Belon informs us that falconers endeavoured to procure goshawks from Greece, as proving much more docile than any others. They are all, however, rather apt to be sluggish, and therefore should be early *made* to the attack of active prey. If this is not done they will confine their preying to the poultry-yard, and will kill nothing beside. To prevent this, take care to enter this hawk to strong game, such as herons, pheasants, geese, ducks, grouse, rabbits, as the case may require, or opportunity offer. It must, however, be remarked, that the goshawks, in common with other large hawks and falcons, perform best when principally flown at one quarry: also, that those trained to water hawking seldom excel on the campaign country after heath or moor fowl, or rabbits; nor will one which has been for some time flown at these latter quarry, readily take to heron hawking. If the goshawk miss her prey, and more particularly if she be at all disturbed by the presence of dogs, or by much noise, she will be apt to *take pet*, and obstinately fix herself on a tree, from whence she can only be recovered by being allowed to *plume* on a *train-partridge* (*i. e.* one brought to the field in a wicker cage or bag); this being loosened, flown at, and killed, she must be allowed to feed on it, which will revive her courage, and serve to excite her in her next trial. To prevent these hawks from taking to poultry, which they are very prone to, the older falconers accustomed them to be placed under restraint in the midst of a poultry-yard, by which, becoming acquainted with the usual feathered inhabitants, they by degrees regarded them as associates, and thus lost the habit of injuring them; and, consequently, they were the more ready to choose other quarry.

2254. *The goshawk intended for pheasant hawking*, requires to be particularly *trained to cover*, which is done by taking her into a wood when sharp-set in her stomach. Now, having placed her on a bough, and being retired to some distance, but within her sight, call her, and, having *fisted* her, reward her with a little of any meat she is known to be fond of: repeat the same three or four times, at each time rewarding her. For wood hawking she must be singularly well accustomed to dogs; on which head we beg to offer a hint not usually given in any practical hawking directions, which is, that the dogs used should be equally well trained, to fit them to hunt with the larger falcons and hawks, as the hawks themselves. While the spaniels may be familiar, they should be taught to keep at a certain distance, and not to crowd around the hawk in hopes of sharing the edibles brought to reward her: they must, on the contrary, keep completely aloof.. The French falconers do not seem to hold the goshawk difficult to reclaim; they however acknowledge, that, for a few days after she is captured, she bates much; but though she does not become quite tractable so soon as some hawks, she will, under good management, by the fifth or sixth day take the food that is offered to her; having once done this, she will soon be ready to spring on the hand held out to her. Mr. Griffith describes the French methods employed in *manning* and *reclaiming* the goshawk thus: — "At the end of eight days, having bathed the goshawk in the morning, they lure him in the evening with a cord, several times, at eight, ten, and twelve paces distance, and the following day at twenty and thirty; after which they leave him at liberty to attack a pigeon fastened to a stake; when he has taken this bird by the head, they pull away the body, and hold it in the hand, so that, when the goshawk has eaten the head, he jumps upon the hand to devour the rest. In the afternoon of the same day they call him back, from greater and greater distances in the woods; and if he returns readily, they can employ him the following day in the chase, having first carried him for some time on the hand. But if he is designed for any other chase than that of partridges and rabbits, to which he is instinctively prone, it is necessary to habituate him to the particular game, like the falcon and gerfalcon, by means of *lures*." (*Animal Kingdom*, vol. vi. p. 217.) We fear, however, the process, to be effective, is more complex and operose than it is here stated. These hawks fly low and very fast for 200 yards. If they do not soon take their quarry they give in. They are able to overtake rabbits, but not hares.

2255. *The goshawk* is taken in various ways, as we shall notice hereafter; one method, marked by its simplicity, is that of inclosing a pigeon within the nets used for taking larks, on which the goshawk precipitating himself, either gets hampered in the net, or, otherwise, intent on dismembering his prey, suffers himself to be secured.

Subsect. 2. *The Sparrow-hawk.*

2256. *The sparrow-hawk* (*F. nivus* Linn.). Montague describes the male as being five ounces in weight and the female nine, so great is the disparity between the sexes in this species. In length the former is twelve inches, the latter fifteen; bill bluish, cere yellow, irides orange-yellow, and furnished with bristles at the base, the orbit offering an unusual protecting projection. The plumage of both sexes is somewhat variable, being sometimes of a deep bluish grey, and at others inclines to a brown tinge edged with ferruginous markings. The breast of the male is of a rust colour; that of the female approaches to white. On the back of the head, both male and female present a broken patch of white, which tends to characterise this species particularly.

2257. *The sparrow-hawk is a familiar type of the true hawks.* The wings of this bird are short and rounded, hardly reaching to the middle of the tail, which however is long. In form it is slender, but elegant. Its flight, when in pursuit of prey, is rapid in the extreme; but when searching for food, Mr. Macgillivray observes, "it moves along gently and silently, with easy flappings, alternating with short sailings or glidings, its head retracted, its tail extended and slightly spread. It often stops, hovers over some spot in a field, supporting itself in the air by a quick but gentle motion of the wings, then moves onward a hundred yards or so, and again stops to survey the subjacent objects, sometimes remaining for a considerable time almost motionless. On some occasions it will perch on a stump, tree, or wall, patiently explore the neighbourhood for a while, until, finding its search vain, it will fly off, or, observing a bird, will glide rapidly towards it, and secure it in an instant." (P. 246.)

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SPARROW-HAWK.

2258. *As a hawker*, Willoughby informs us that this bird was used to be trained to the sport, and Bellonius, also, details a common and familiar way of taking these hawks about the strait of Propontis, in these words: — "Not far distant," saith he, "from the outlet of the Euxine Sea, at the entrance of the straight leading to the Propontis, having climbed up a very high hill that is there, by chance we found a fowler on the top, intent upon catching sparrow-hawks. Whereas it was now past mid April, at which time all sorts of birds are wont to be very busie in building their nests, or breeding, it seemed to us wonderful, strange, and unusual, to see such a multitude of kites and hawks coming flying from the right side of the sea. This fowler did with such industry and dexterity lay wait for them, that not so much as one escaped him. He took at least twelve hawks every hour. The manner thus: He himself laid hid behind a little bushet, before which he had levelled a square plat or floor, about two paces long and broad, being two or three paces distant from the bushet; in the borders of this floor he had pitched down, or thrust into the ground, six stakes, at due distances, of about the thickness of one's thumb [the word is *pollicis*, and may possibly signify an inch thick], of a man's height, two on each side. On the top of each, on that side which respected the floor, was a nick cut in, upon which was hung a net made of fine green thread. In the middle of the floor stood a stake a cubit high, to the top of which a cord was bound, which reached as far as the fowler, who lay behind the bushet. To this same line, lying loose, were many little birds fastened, which picked up grains of corn on the floor. Now, when the fowler saw a hawk coming from afar off from the sea-coast, shaking the line, he made these birds to flicker up and down; which the sparrow-hawks (as they are notably long sighted) espying at least half a league off, came flying full speed, and rushed upon the nets with that force to strike at the birds, that, being entangled, were taken. The hawks being allured into the nets, and caught by this artifice, the fowler thrusts their whole wings up to the shoulders into certain linnen clothes, sewn up for that purpose, which our falconers call *mayling* or *trussing* of hawks. Thus *mayled*, or *trussed* up, he left them on the ground, so unable to help themselves, that they could not stir, nor struggle, much less disengage or deliver themselves. No man could easily imagine whence such a multitude of sparrow-hawks should come, for in two hours' time that we were spectators of that sport, we saw more than thirty taken by this deceit, whence one may conjecture that one fowler, in the space of one day, might take more than a hundred." These hawks do not usually stay so long in one place as falcons, but are often changing place; whence it is more difficult to take them with a net, for they will not readily give a fowler time to spread a net over them, unless they be deceived in that manner Bellonius hath set down.

2259. *The sparrow-hawk* may be taught to fly at partridges, landrails, quails, and all the smaller birds; and as she is very industrious and not intractable, it is to be wondered that, so easily as she may be procured, she is not used more. Perhaps it is because she will not follow birds high into the air. As a short winged hawk, she is reclaimed and manned after the manner of the goshawk, which she so much resembles. To prevent her being balked at her first essay at partridges, enter her either to a young one, or otherwise to one *shortened*, i. e. with one wing, or both wings clipped. Blome says, " When you enter your sparrow-hawk, hold your left hand aloft, that she may the better watch both the spaniels and prey: you must give her some small reward after every flight, especially if she kill; and if at first entering she miss, be sure to have some young partridge or bird in your bag for her to kill. After she is well entered and noussled, then hold down your fist, whereas formerly you held it up. You should likewise be sure to let your spaniels range near together, and on your right hand, that she may the better discern her game, and flee to the most advantage; for which purpose you should be as near the dogs as possible, and carry your hand low, that she may not bear at the game before they spring. He that is not quick at sight, and nimble of hand with his sparrow-hawk, shall soon spoil her; but, with care and due attendance, there are few hawks of more pleasure, for you may flee her at such times of the year as you can't the goshawk. Her keeping ought to be delicate, and in regard she is so small and weak, be sure to keep her high and lusty, yet with due regard to the preparation of her stomach, before you take the field with her. She will kill, according to the several seasons, diversity of game. She generally delights to flee close to the ground, and will stoutly attack the lapwing, ringdove, jay, magpie, blackbird, and the like game, and she may be made to hold out all the summer. You should flee her from the hood, and not let her spend her little strength, and disorder herself by unruly bateing, which happens by being carried bare." Both the goshawk and sparrow-hawk, be it remembered, must come to the field *sharp-set.* The short winged hawks do not *fly* for *flying* sake, nor fight like the gerfalcon and slight falcon with the hern for the very love of fighting; they, on the contrary, must be stimulated by hunger to make them fierce.

Sect. V. *Kites, Buzzards, Harriers, &c.*

2260. *The kite,* of which we have one British species only, is allowed by modern naturalists to remain undisturbed in his ornithological station. The buzzards, on the contrary, have been subdivided by them; the honey-buzzard being ranked under the genus *Pernis*, and, of the remainder, the genus *Circus* claims all, except the individuals known as the common and the rough legged. As regards the practical part of our subject, as a treatise on falconry, it is of little consequence how this matter is viewed; for the buzzards, though not entirely unknown as hawking agents, yet are very little relied on, except to be *flown at* by other falcons and hawks. As, however, it has been supposed, that their vision is somewhat indistinct in the full day, it has suggested itself to us as a query, whether, if such be the case, and their hawking ardour, *con amore*, being damped by the circumstance, they might not be advantageously trained to fly at birds of evening flight, as wild ducks, owls, the goat-sucker or night-hawk, &c. &c.? This being however only a suggestion, they will employ little more of our notice than will suffice to characterise each variety, should the falconer essay such quarry; and further, as it will enable us to demonstrate each link in the chain of the rapacious birds. With the kite something more is demanded from us, for kite-hawking has long been very popular among falconers; we shall therefore at once proceed to some further notice of him.

Subsect. 1. *The Kite.*

2261. *The kite* (*F. Milvus* Linn.), provincially called fork-tailed glead, or buttock, notwithstanding it ranks low in the falconer's list, is yet an object of admiration to the naturalist, and indeed to every common observer. Although the female weighs less than three pounds usually, yet her wings extend beyond five feet. "The male," according to Colonel Montague, "weighs about two pounds six ounces; length two feet two inches. The bill yellowish, point dusky; cere yellow, irides the same, but of a light colour. Head grey, streaked down the middle of each feather with dusky; back and wing-coverts dusky, edged with ferruginous; the under parts more or less ferruginous, streaked with dusky, lightest on the breast; quill feathers dusky black, from the fifth to the tenth dashed with ash colour with a few dusky bars, and white at the base and on the inner webs, the rest are dusky, with obscure bars; the tail is of a bright ferruginous colour, the two exterior feathers dusky on the outer webs, the first barred on the inner web the same; the legs are yellow; claws black. The tail of this bird at once distinguishes it from all others of the genus, being much forked; the exterior feathers are twelve inches in length. The female is somewhat larger, measuring in length two feet four inches, breadth five feet six inches; in colour much resembling the other sex, but in general not so ferruginous." (*Ornithological Dictionary*, p. 28.) We must, however, observe, that the kite varies much by age, more so than is generally known.

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THE KITE.

2262. *Of its habits we may remark,* that though common in some parts, it is scarce in others. It is more frequent in wooded than campaign countries; it seems, however, somewhat of a rover, as we have known a pair to have been seen almost daily, and then to be altogether missed for some months. In some parts of Scotland it is frequently met with, in others not at all. Mr. Macgillivray says, "I have observed it in the counties of Aberdeen, Stirling, and Argyle; but in the Hebrides, and in the southern division of Scotland, I have never met with it. As a proof of its rarity in the latter districts, I know of only one specimen that came through the hands of the bird-stuffers in Edinburgh in the course of eight years." (P. 277.) Though not worthy the trouble of training to hawk at command, it does not want for predacity in search of food. "At a farm-house," says Colonel Montague, "in the neighbourhood of Hastings, a servant girl was alarmed by an unusual uproar among the poultry; and on looking out, she saw a large bird hovering close to the window over some coops, where several broods of ducks and chickens were kept. She accordingly sallied forth to drive the bird away; but he took so little notice of her, that she snatched up a broom, and actually knocked him down and killed him. It proved to be a kite, which had probably a nest in the neighbouring wood. A circumstance similar to that just related, we witnessed in one of this species, that afforded us no small entertainment: — A poor woman was washing some entrails in a stream of water, part of which extended a few yards out of the basket placed in the water; the hungry bird had long been hovering over, viewing with anxious eye so delicious a bait, and took the opportunity of actually pouncing upon and carrying off a part, in spite of all the woman's efforts with hands and tongue, the latter of which might have alarmed a more powerful enemy. In addition to these remarkable circumstances in the biography of this noble bird, we remember an instance of two males, in the spring of the year, being so intent in combat, that they both fell to the ground, holding firmly by each other's talons, and actually suffered themselves to be killed by a woodman who was close by, and who demolished both with his bill-hook. In England it is chiefly observed in the more wooded districts, where timber trees abound; it is also common in the eastern parts, but is rare in the north, and even more so in the west; for in twelve years' residence in Devonshire, we never observed but one in the southern district of that county." (*Ornithological Dictionary*, p. 283.) The kite, it may be perceived, is by no means very choice in its food, being ready, when living prey is not at hand, to satisfy the cravings of its nature with reptiles, worms, and any garbage or offal that may fall in its way. Nor is it inapt at such times to attack the young lambs, though hares, rabbits, grouse, partridges, and domestic fowls of all kinds are the usual objects of its choice. In truth the kite is by no means an epicure, and therefore will put up with coarse food rather than none.

2263. *The flight of the kite is peculiar*, and is thus descriptively noticed by Buffon: — "One cannot but admire the manner in which its flight is performed; his long and narrow wings seem immovable; it is his tail that seems to direct all his evolutions, and he moves it continually; he rises without effort, comes down as if he were sliding along an inclined plane; he seems rather to swim than to fly; he darts forward, slackens his speed, stops, and remains suspended or fixed in the same place for whole hours, without exhibiting the smallest motion of his wings."

2264. *The spring is the season for the propagation of kites*, who usually build their nest in the fork of some large tree. Pieces of wood crossed with twigs are surmounted by moss, feathers, wool, and hair, so as to make a more comfortable place for nidification than is usual with the large raptorial birds. Our information was gained from an old gamekeeper, who professed to have examined three or four "glead nestesses," as he termed them. The kite would appear, from Shaw's account, to have been very plentiful formerly: — "In the days of King Henry the Eighth, as appears from the observations of the celebrated Clusius (L'Ecluse), the British metropolis itself swarmed with kites, which were attracted by the various kinds of offal thrown into the streets, and were so fearless as to take their prey in the midst of the greatest crowds, it being forbidden to kill them. Thus the kite was as much reverenced in the streets of London in those times, as the vulture is at present in those of Grand Cairo or Alexandria. The descent of a kite at the present day in Cheapside or Charing Cross, would probably attract as sudden a crowd as any other unexpected phenomenon, and would doubtless be recorded in the public prints as an event of singular curiosity." (*General Zoology*, vol. vii. p. 104.) A black variety of this bird has been noticed by Sir Robert Sibbald in his list of Scottish birds; but as no such variety is generally acknowledged, it was probably either an emigrant, or otherwise it might have been, as suggested by Dr. Fleming, the *Falco ater* of Gmelin and Temminck.

Subsect. 2. *The Buzzards.*

2265. *The honey-buzzard* (*Falco apivorus* Linn., *Pernis apivorus* Cuv.), also called the capped buzzard, from a ring of closely set feathers seen between the bill and eyes (*fig.* 344.), from which peculiarity it is indebted for the honour of being separated from its congener, and placed by Cuvier in a new genus, called *Pernis.* Its vernacular name of honey-buzzard is, without doubt, derived from its feeding, though not on honey, yet on the larvæ of bees and wasps, which is ascertained by the quantities which have been found in its nest. Dr. Fleming describes the bird thus: — "Plumage brown above, brown and white beneath; the head grey. Length twenty-three inches, breadth fifty-two; weight thirty-one ounces. Bill, cere, gape, and claws black; irides and feet yellow. Quills twenty-four; secondaries with alternate rays of blackish brown and bluish grey. Tail long, with transverse bars. In the female the plumage is spotted. Breeds in trees. Eggs grey, with obscure spots. Young birds have the cere yellow; the head spotted with brown and white. Feeds on bees, wasps, reptiles, and small birds. Probably only a summer visitant." (*British Animals*, p. 52.) This hawk is eaten in France; and Buffon tells us that it is taken by snares in winter, at which time being very fat it is tolerably well tasted. Mr. White, in his *Natural History of Selbourne*, informs us, that "a pair of honey-buzzards (*Buteo apivorus, sive vespivorus* Raii) built them a large shallow nest, composed of twigs and lined with dead beechen leaves, upon a tall slender beech, near the middle of Selbourne Hanger, in the summer of 1780. In the middle of the month of June a bold boy climbed this tree, though standing on so steep and dizzy a situation, and brought down an egg, the only one in the nest, which had been sat on for some time, and contained the embryo of a young bird. The egg was smaller and not so round as those of the common buzzard, was dotted at each end with small red spots, and surrounded in the middle with a broad bloody zone." Mr. Macgillivray has appropriately named this bird the bee-hawk.

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HONEY BUZZARD.

2266. *The hen harrier* (*Falco cyaneus* Linn., *Cirus cyaneus* Flem., *fig.* 345.) is in bad odour with the agriculturists, for its destructive propensities towards poultry, which are very great.

It is a well known bird, and from the prominently marked bars on its tail is called the ring-tailed harrier, it being now generally understood that the hen harrier and the ring-tail are one and the same species. The tail is two inches longer than the wings; male bird light bluish grey; female brown above, reddish yellow underneath, longitudinally streaked with brown; young similar to the female, but the tints more vivid. Dr. Fleming describes it thus: — "Length eighteen, breadth forty inches; weight thirteen ounces; bill dark blue; cere and legs yellow; plumage grey; under and upper tail-coverts, belly, and below the wings, white. Behind the nostrils, and above the eyes, numerous black hairs. The first quill equal in length to the seventh; second and fifth nearly equal; third and fourth longest, and nearly equal. Inner webs of the first four, and outer webs of the third, fourth, and fifth, abbreviated from the middle; second, third, fourth, and fifth, black; first and sixth greyish; rest grey. Tail, with the two middle feathers, uniform; the others lighter coloured, and barred with dusky on their inner webs. The ear feathers forming a large concha, like a ruff on the sides of the neck, distinguish this species from the other British *Accipitres.* Female, with the plumage above, brown, with pale margins; beneath yellowish brown, with longitudinal dark spots; the two middle tail feathers with dark cinereous and blackish bands. In this state it is the *Falco pygargus* of Linnæus, and the ring-tail of British ornithologists. Willoughby had hinted at their identity (*Ornithology*, p.40.); and Barington seems to have admitted it (*Phil. Trans.* 1770, p. 14.); but it was Montague who removed all doubts on the subject. Breeds in furze and heath. Eggs four or five, bluish white, and without spots. This species flies near the ground, and is very destructive to poultry and game." (P. 53.) The hen harrier is very common in Scotland, and to the account given of it by Mr. Macgillivray, for critical description, detail of habits, and interesting anecdotes concerning it, we would refer the reader.

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HEN HARRIER.

2267. *The common buzzard* (*Falco Buteo* Linn., *Buteo vulgaris* Flem.), provincially called the puttock, is thus described by Dr. Fleming: — "Upper quarter of the tarsi feathered. Nostrils round; the margin of the upper mandible slightly waved. Length twenty-one, breadth fifty inches; weight thirty-two pounds. Bill bluish; cere, irides, and feet, yellow. Plumage above deep brown, with pale margins; below greyish brown with darker spots, sometimes with cross bars of white, scarcely apparent on the throat, but increasing on the breast, belly, and vent. Thighs plain dusky-brown on the outside, more rufous on the inside. The first four quills, with the inner webs abbreviated and black towards the extremity. Tail feathers dusky, with pale tips and brown bars, a little longer than the wings. Breeds in trees. Eggs two or three, size of those of a hen, white, with rusty spots at the large end. The young have the plumage light brown, variegated with white and yellow; throat and belly white, the latter with longitudinal large spots. Feeds on rabbits and birds, pouncing on its prey on the ground." (*British Animals*, p. 54.) This bird is remarked for its sluggish disposition, which keeps it from remaining long on the wing. It is very generally diffused throughout Europe, and in France, Italy, and Spain, is eaten as a great delicacy. Mr. Macgillivray objects to the popular prejudice against the buzzards, and generously contends in their favour, as being the accused party. We would refer the reader to his valuable work, so often quoted by us, for a detailed and interesting account of this bird.

2268. *The rough legged buzzard* (*Buteo lagopus* Flem.). This bird in colour resembles the common buzzard; nor does it greatly differ in size, but is readily distinguished from it by its feathered leggings, which reach nearly to the toes. It is thus described by Fleming: — "Length nineteen to twenty-seven inches. Bill and claws black; cere and feet yellow; irides brown. Head, neck, throat, breast, and thighs, yellowish white, with large streaks of brown. Back dark brown, with yellowish margins. Belly with a large brown spot; the rest beneath yellowish white. Quills white at the base, dusky at the ends. Tail, with the basal half, white; then a broad brown band; the tips whitish. In the female the head, neck, and tail are whiter; the sides and belly browner. Breeds in trees. Eggs four, clouded with red. Young have brown spots above, varied with white, with a stripe of the same colour over the eye. Tail with three bands near the end. Feeds on *Glires* and frogs. It is frequent in the north of Europe." (P. 54.) It is occasionally met with in England. Mr. Pennant mentions one which had been shot near London, having the extreme half of the tail tipped with white. One of less size was also shot in Suffolk, and later notices of it may be met with.

2269. *The ash coloured buzzard* (*Buteo cineraceus* Flem., *Circus cineraceus* Vigors) was first fully described by Colonel Montague. (See *Ornithological Dictionary*, 2d edit. p. 7.) Of the few specimens met with, most were taken for the common harrier, until this indefatigable naturalist first clearly described it in the *Linnæan Transactions*. Fleming's account of it runs thus: — "Wings exceed the tail in length. Body in length eighteen inches, breadth forty-four; weight nine ounces and three-quarters. Bill and claws black; the latter small. Cere greenish. Irides, and margins of the eye and legs, yellow. Plumage above cinereous brown; beneath white, with a broad streak of bright bay down the shaft of each feather. Quills dusky black; the first very short, the third by far the longest. Secondaries cinereous with dusky bars. Tail, with the two middle feathers, dusky brown, others of an ash colour. The female has the head ferruginous, the nape with a patch of white, the remainder of the upper parts of the body, including the quills, dark chocolate brown, with ferruginous margins. Lower part of the rump and tail-coverts white. Beneath, the plumage is uniformly ferruginous. Breeds among furze. Eggs four, white. Young like the female. Montague supposes that Pennant referred to this species in his variety of the ring-tail, with the colour of the belly entirely plain. (*Brit. Zool.* i. 195.) Feeds on larks. Has probably been confounded with the *Circus cyaneus*, from which, however, it differs obviously in the superior length of the wings." (*British Animals*, p. 56.)

2270. *The shrikes, or butcher birds*, form the last family of the *Rapaces*, and though the individuals are small in size, they are by no means the least sanguinary of the tribe. They are said not to be permanent residents with us, the correctness of which assertion seems as yet undetermined. Three distinct varieties are acknowledged among us: the greater butcher bird (*Lannius Excubitor* Linn.), the flusher, or lesser butcher bird (*Lannius Collurio* Linn.), and the woodchat (*Lannius rufus* Linn.). The shrike genus, according to Bewick, is distinguished by the following characteristics: — "The bill is strong, straight at the base, and hooked or bent towards the end; the upper mandible is notched near the tip, and the base furnished with bristles; it has no cere; the tongue is divided at the end, the outer toe connected to the middle one as far as the first joint. To these exterior marks may be added, that it possesses the most undaunted courage, and will attack birds much larger and stronger than itself, such as the crow, the magpie, and most of the smaller kinds of hawks; if any of these should fly near the place of its retreat, the shrike darts upon the invader with loud cries, and drives it from the nest. The parent birds will sometimes join on such occasions; and there are few birds that will venture to abide the contest. Shrikes will chase all the small birds upon the wing, and sometimes will attack partridges, and even young hares. Thrushes, blackbirds, and such like, are their common prey; they fix on them with their talons, split the skull with their bill, and feed on them at leisure." (P. 69.) Bewick, however, omits to notice a most remarkable feature in their manner of disposing of their prey, which Selby thus describes: — "It had just killed a hedge-sparrow (*Accentor modularis*), the skin of which, still attached to the thorn, is now in my possession; after killing the bird it hovered for a short time, with the prey in its bill, over the hedge, apparently occupied in selecting a thorn fit for the purpose; upon disturbing it, and advancing to the spot, I found the *Accentor* firmly fixed by the tendon of the wing to the selected twig. When confined in a cage this bird still evinces the same propensity for fixing its food; and if a sharp-pointed thorn or stick is not left for that purpose, it will invariably fasten it to the wires before commencing its repast." Selby found in the stomach of one of these birds the remains of a mouse; and Montague found in another those of a shrew (*Sorex arenarius* Linn.). "I could never observe," says Mr. Knapp, "that this bird destroyed others smaller than itself, or even fed upon flesh. I have hung up dead young birds, and even parts of them, near their nests; but never found that they were touched by the shrike. Yet it appears that it must be a butcher too; and that the name *lannius*, bestowed on it by Gesner two hundred and fifty years ago, was not lightly given. My neighbour's gamekeeper kills it as a bird of prey; and tells me he has known it draw the weak young pheasants through the bars of the breeding coops; and others have assured me that they have killed them when banqueting on the carcass of some little birds they had captured. All small birds have an antipathy to the shrike, betraying anger, and uttering the moan of danger when it approaches their nests. I have often heard this signal of distress, and cautiously approaching to learn the cause, have frequently found this butcher-bird occasioned it. They will mob, attack, and drive it away, as they do the owl, as if fully acquainted with its plundering propensities. Linnæus attached to it the trivial epithet *excubitor*, a sentinel; a very apposite appellation, as this bird seldom conceals itself in a bush, watching its prey." Audubon informs us that, — "When pouncing on its prey, this bird seizes it with its bill first (if *insectivorous*), then secures it under its feet to eat it. When coming on a bird or mouse, which it has pursued for some distance, it settles its feet at the moment it strikes with its bill the cranium of the object pursued. I have seen a bird of this kind in America," he adds, "carried to a considerable distance by a Carolina dove, fastened to the back and head of the dove with beak and feet. Although the toes are slender, and the claws comparatively weak, their press is powerful; and the bite it inflicts with the bill can draw blood from a robust man's hand." (*Ornithological Dictionary*, p. 66.)

2271. *The shrike, as a hawking agent, has claims to our notice on two grounds.* It is of great use in the capture of the passage-hawks, in which, as we shall elsewhere show, it performs its part with singular adroitness. As it is not an intractable bird, it has also been itself trained to hawk at fieldfares, thrushes, blackbirds, rails, quails, and young partridges; and in Germany, Russia, and Sweden, it is said the practice is still common. Its predacity extends also to rats, mice, and all the smaller vermin, which makes it a favourite in some districts among farmers, gardeners, and other ruralists.

Sect. VI. *Nocturnal Birds of Prey.*

2272. *The owls, or strigine family*, are here principally alluded to, and the various members of it present an interesting picture of that gradual descent, which takes place in animal groups, from those whose wants being great, present a correspondent degree of perfection in the organs by which those wants are supplied, to such whose wants being either more circumscribed, or otherwise more easily supplied, do not exhibit an organisation so powerfully marked. In our tracings of the predacious characters of the falconine family (which includes the eagles as well as the more direct agents employed in falconry) to the hawks and buzzards, and lastly to the owls and butcher birds, the descent has been gradual, but determinate, as our notices of the leading organs of predacity in each will testify. It will be found in our practical detail of hawking that this tribe is somewhat concerned, and that it is not unfrequently both offensively and defensively engaged.

2273. *The species of owls* of common occurrence in Britain may be said to be four, but there are at least three others that occasionally visit us. Of the four British owls three only are permanent, or at least are commonly met with: these are the long eared owl; the barn or screech-owl; and the common brown wood-owl, or howlet.

2274. *The horned or long eared owl* (*Strix otus* Linn.), is thus described by Bewick (*fig.* 346.): — Length fourteen inches; breadth about three feet. The bill is black; irides bright yellow; the radiated circle round each eye is of a light cream-colour, in some parts tinged with red; between the bill and the eye there is a circular streak of dark brown; another circle of dark rusty brown entirely surrounds the face; its ear-tuffs consist of six feathers closely laid together, of a dark brown tipped and edged with yellow; the upper part of the body is beautifully pencilled with fine streaks of white, rusty, and brown; the breast and neck are yellow, finely marked with dusky streaks, pointing downwards; the belly, thighs, and vent feathers, of a light cream colour: there are four or five large white spots upon each wing; the quill and tail feathers are marked with dusky and reddish bars; the legs are feathered down to the claws, which are very sharp; the outer claw is movable, and may be turned backwards." It is the least common of the three species we have noted, being occasionally found in ruins and rocky places, and more frequently met with in large woods, particularly in fir plantations where holly abounds; and as it is seen with us at all seasons, it consequently is not migratory. Its principal food appears to be mice, for Selby found in the stomach of one, no less than five skulls of mice, the relics, in all probability, of the last night's meal. Buffon observes that it seldom makes a nest, but lays four or five white eggs in one which has been forsaken by a magpie. It is said to be pugnacious in the extreme, and when brought down by the gun will throw itself on its back, and defend itself vigorously with both bill and claws. It is diffused very generally over most parts of Europe, as well as with us in Britain. It is taxed with being a great marauder, and seldom taking the trouble of building a nest of its own, but it forcibly takes possession of that of some other bird. The magpie, it is said, is often honoured with this preference; and we can conceive the chattering which a pair of mags must make, when thus interrupted in their nidification; for it is not the forsaken nest, as Buffon would imply, but it is the one actually occupied by the magpies that this marauder selects.

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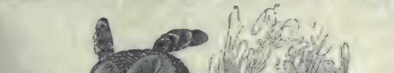

HORNED OWL.

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WHITE AND COMMON OWL.

2275. *The white, or barn-owl* (*Strix flammea* Linn., *fig.* 347.), is well known. Provincially it is called the "screech-owl," although it is said that it is the wood-owl only that is known to hoot. Bewick's description of it runs thus: — "Length fourteen inches; bill pale horn-colour; eyes dark; the radiated circle round the eye is composed of feathers of the most delicate softness, and perfectly white; the head, back, and wings, are yellow buff, beautifully powdered with very fine grey and brown spots, intermixed with white; the breast, belly, and thighs are white, on the former are a few dark spots; the legs are feathered down to the toes, which are covered with short hairs; the wings extend beyond the tail, which is short, and marked with alternate bars of dusky and white, the claws are white. Birds of this kind vary considerably: of several which we examined, the differences were very conspicuous, the colours being more or less faint according to the age of the bird; the breast in some was white, without spots; in others pale yellow." Bewick, however, in common with many others, attributes the night cries repeated at intervals to this bird. Colonel Montague gives a very interesting account of its habits. "This elegant bird," he says, "mostly frequents the habitations of man; is rarely found in woods, but resorts chiefly to barns for the sake of the mice, for which reason it is a welcome guest to the farmer. Like the rest of the genus, it chiefly lies concealed in the day, but will sometimes, when pressed by hunger, prey by daylight, especially in winter, or when it has young. It breeds in old decayed trees in the neighbourhood of farm-houses, or villages, and oftentimes in barns; makes very little nests; lays three or four white eggs, not so round or so large as that of the tawny owl. The food of this owl is chiefly mice, which it swallows whole, and, like other predacious birds, ejects the bones and fur in large pellets, which are termed castings. Some bushels of this ejected matter are found in the hollows of old trees. This species is said not to hoot, but to scream harshly; besides which, it makes a snoring and a hissing noise. Sir W. Jardine, however, asserts that the white owl does hoot, and that at night hooting is their general cry;" to which he adds, "that, when alarmed, it snaps its bill together with great force. It becomes exceedingly tame when taken young; we," he adds, "bred up one with a sparrow-hawk and a ringdove, who were confined together, and lived in great harmony; but the latter was the most quarrelsome, and was master of the triumvirate. After living together for six months they were given their liberty, and the owl was the only one that returned. Cats are known to kill, but never to eat, the shrew, which has been supposed to possess some poisonous quality. We have, however, taken from the stomach of one of these birds no fewer than five shrews." (*Ornithological Dictionary*, 2d ed. p. 23.)

2276. *The common wood-owl* (*Strix stridula* Linn., *fig.* 348.) is described by Bewick as being usually about the size of the barn-owl: "the bill white; eyes dark blue; the radiated feathers round the eyes are white, finely streaked with brown; the head, neck, back, wing-coverts, and scapulars, are tawny brown, finely powdered and spotted with dark brown and black; on the wing-coverts and scapulars are several large white spots, regularly placed, so as to form three rows; the quill feathers are marked with alternate bars of light and dark brown; the breast and belly are pale yellow, marked with narrow dark streaks pointing downwards, and crossed with others of the same; the legs are feathered down to the toes; the claws large, much hooked, and white. This species is found in various parts of Europe; it frequents woods, and builds its nest in the hollows of trees. The tawny owl and brown owl have, by the older authors, been described as distinct

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COMMON WOOD-OWL.

species; but Latham, Montague, and Temminck, seem to agree in considering them identical, the differences observed between them in their opinion arising from age and sex." Bewick observes, that "it was communicated to him by J. F. M. Dovaston, Esq. of West Felton, near Shrewsbury;" that "it is this owl that hoots at night, and sharply gives out the repeated cry of *tee-whit*, particularly in cold frosty weather:" he also adds, that, "when these birds are slightly disturbed amid their slumbers in the vast, deep, and solitary woods, they will utter an inward tremulous hooting of *too-whoo*, the subdued and gloomy shivering of which is peculiarly horrific." Colonel Montague also is of opinion, that this is the only owl which hoots, adding that, "besides hooting, it makes a disagreeable screaming noise." It is a singular but well authenticated fact, that this owl feeds its young with small fish, as the loach and bullhead. Query, How and when does the parent bird take them? but take them it does. (See *Naturalist's Magazine* of Loudon, vol. i. p. 179.)

2277. *Of owls, as hawkers at command*, we have but few indistinct notices; but we do believe they might be readily trained to evening hawking with some profit from the birds taken, and with much amusement at the sporting evolutions of such grave gentry. The twilight wanderers are more numerous than the mere passers-by imagine; and they all of them fly deliberately, consequently sport might be expected from them were owls trained to pursue them. The principal hawking use of the owl, however, has been confined to aiding the falconer in entrapping the passage-hawks; each of which uses we shall have further occasion to remark on hereafter. Owls, like kites, herons, rooks, and magpies, have been hawked at; and, if we mistake not, Colonel Thornton, on his hawking expeditions, frequently took them out with him, that he might not want sport if higher game did not come into view; but it is evident here, that the poor owl was the game flown at, and the colonel and his hawks the gamesters. In our opinion few birds are more useful than the owl, yet he has a host of enemies and numerous traducers.

Sect. VII. *The Methods of procuring Falcons and Hawks.*

2278. *The sage Mrs. Glasse*, as a preliminary to her instructions how to cook a hare, recommends that we begin by catching one. With such an example before us, we also think it would be well to advert to the methods employed in taking hawks, ere we treat on their uses when taken and reclaimed; and should we be found to dilate somewhat on this subject, we have, as we think, sufficient reasons for so doing. In the first place, as we have elsewhere stated, we incline to believe that the great increase of population, the restrictive laws which will ere long curtail hunting and shooting, as well as that the love of novelty likewise will eventually tend to vary the sporting practices of our countrymen; in which case we cannot but incline to a belief that the hawking mania may again affect our active spirits. It is truly aristocratical; it infringes little on vested rights; and, finally, it injures no one, but benefits many. We proceed, therefore, to state that hawks may be obtained either from the nest as *eyasses*, or they may be caught when, just after having left their nest, they begin to be able to fly from bough to bough as *branchers*. They are also entrapped or netted, after they have arrived at maturity, either as permanent residents, but more generally during their migrations as *passage-hawks*.

Subsect. 1. *The Taking and Rearing of Eyasses.*

2279. *The eyass must be sought after in such places* as accord with the habits of nidification of the parent birds; and as the mature falcons and hawks usually return to the same spot to breed, the seeker is pretty sure of finding them. Falcons, most of them, build in cliffs. Hawks also, some of them, make their nests in cliffs, others in trees, some on the ground, and not infrequently they make use of the old nest of some other bird, as the magpie, or crow, for the purpose.

2280. *Of unfledged eyasses* it must be remarked that, when discovered, the prudence of either taking them at once, or suffering them to remain until a little further advanced, must depend on circumstances. When it can be done, they should be left as long with the parent birds as possible, because they will thrive with them much faster than under the best care of the falconer. But there is, first, the chance of their being taken by some other person; and, next, that when more advanced in growth, the more danger arises that their quill feathers may be broken in moving them, from the greater resistance they then make, particularly if they have far to be carried. When the young are not immediately abstracted from the nest, but are either met with as *branchers*, or are purposely suffered to remain until they can clamber about the boughs, the usual method of taking them is by means of springes of green silk, set on the small branches among the foliage. Sometimes fine purse nets are used for the purpose, into which they are enticed by some tempting bait judiciously placed within. There are also other methods by which the simple caption of these *bowers*, *boughers*, or *branchers*, may be made, though probably such are less effective. Birdlime, which has been employed for many centuries, will commonly secure them, but it is injurious to the feathers; they may also be hunted down, but it being essential to the use to be made of the birds that their talons, and particularly that their wing feathers should be perfect, every violence that endangers these ought carefully to be avoided. The young eyass is, without doubt, rendered much more obedient and attached by its early domestication, than either the *tackler* or trapped hawk can be, with equal trouble; nevertheless, the artificial rearing of the eyass is against its perfect development, and, consequently, the effective qualities of the latter preponderate; and they are more highly estimated by most falconers than the former. It is the chance of losing them, therefore, that occasions their early removal when once found. Most of the falcon tribes which breed with us, return every year to incubate in the same nest. Every one therefore, concerned in the capture, knows where to meet with them; and the well practised falconer knows also how to take them, either as eyasses or as branchers, with little difficulty; but the inexperienced will not find it so easy without some instructions, which we will endeavour to supply.

2281. *Haggards, or mature hawks*, are entrapped in various ways, but the most important varieties are generally taken during their migrations, and, as already observed, are thence called passage-hawks. Among the methods of taking mature hawks, that which is effected by the aid of the great ash-coloured shrike, popularly called the butcher-bird, is a common one. The method is thus clearly depicted by M. J. D. Hoy:—"The village of Falconswaard, in North Brabant, has been long famed for its falconers: it formerly sent out men well practised in this art to every country in Europe; and the few efficient falconers still remaining (as this diversion has been of late years much laid aside on the Continent as well as in this country), are natives of the village of Falconswaard. The hawks are generally caught during the months of October and November, when they are on their passage towards the southern parts of Europe. The falconer constructs a low turf hut in an open part of the country, with a small opening on one side; at about a hundred yards' distance from the hut, a light coloured pigeon is placed in a hole in the ground covered with turf, with a string attached to it, which reaches to the hut; another pigeon is placed in a similar situation on the opposite side, at the same distance. At ten yards' distance from each pigeon, a small bow-net is fixed on the ground, so arranged as to be pulled quickly over by means of a piece of small iron wire made fast to the net, and reaching to the hut. (See figure and description, p. 693.) The string by which the pigeon is held passes through a hole in a piece of wood driven into the ground in the centre of the bow-net. The falconer has also a decoy pigeon in a string at a short distance from the hut, and several tame pigeons at liberty on the outside, which, on the sight of a hawk, immediately take shelter within. The butcher-bird is fastened by a leather thong on a hillock of turf, a yard in height; and a few yards distant from the hut a small hole is made, and a piece of turf laid over, for a place of retreat in case of danger. The falconer, employing himself in some sedentary occupation, observes every motion of his little watch, and it is almost incredible at how great a distance he will point a falcon in the air. If it approaches, he shows symptoms of alarm in his feathers, fixing his eyes in the same direction: on a nearer approach he screams aloud, the falcon being then, perhaps, not less than three or four hundred yards distant; on its closer approach, he retreats under the turf, and quite conceals himself. It is then the falconer draws out the pigeons where the nets are fixed; which, fluttering round, generally tempt the hawk to make a stoop at one of them, which, if he takes, he is inevitably ensnared. While the falcon is near, the shrike continues in his hiding-place, hardly daring to show his head at the entrance of his retreat; should the falcon be taken, or pass over without attacking the pigeons, he cautiously creeps out, yet almost afraid to trust himself on his hillock, looking on every side; and does not, during some time, recover from his alarm. He is even more terrified at the sight of the goshawk, screaming and endeavouring to escape, as this hawk would even seize him in his hiding-place, should he catch sight of him, which the falcon would not. He does not show much alarm at the sight of the kite, nor at the different species of buzzards, unless they are very near to him; so that, by the motions of the butcher-bird, the falconer can tell, almost with certainty, the species of hawk which is approaching him. Were it not for the penetrating eye of the watchful bird, the falconer would sit many dreary hours to no purpose, as he would not know when to pull his pigeons out to lure the hawk." (*Magazine of Natural History*, vol. iv. p. 343.) Dr. Shaw's description varies the method somewhat. "Falcons," he says, "may be taken by means of nets, such as are used in catching larks; but the difficulty is to attract the bird. If a falcon is engaged in the pursuit of his prey in the air, he will not quit it and descend to seize an immovable, and apparently lifeless bait lying on the ground. It is therefore necessary to use a greater degree of art. The experienced falconer places and fixes in the centre of his net a pulley, or a strong iron wire bent into a ring; through which he passes a string of thirty or forty fathoms length, and, at the extremity, ties by its legs a live pigeon, which he carries with him into his hut or cover; and as the falcon sometimes flies so high as not to be seen, the falconer is informed of his motions by means of a butcher-bird, which is fastened by a string tied to a stick fixed near the net. This bird, by its movements, indicates the kind of hawk which is hovering above. If it be a buzzard, or any kind of sluggish hawk, the butcher-bird's motions are but slight; but if it suddenly flies down and hides itself, it is a sign that some large kind of falcon is above. In consequence of this, the falconer lets out the pigeon, whose apparent state of liberty attracts the sight of the falcon. If it approach readily, the man withdraws the pigeon, and, a moment or two afterwards, lets it out again. This second appearance of the pigeon never fails to incite the falcon, which darts upon it as its prey, and is in consequence caught in the net, which the man instantly draws over it." (*General Zoology*, vol. ix. p. 139.) Pallas informs us that, in Russia, they capture gerfalcons by luring them under nets suspended at a moderate distance from the ground, on which ground luring pigeons are fastened down Above the nets, lines passing from tree to tree, garnished with feathers, wave to and fro, and attract the attention of the hawks to the pigeons underneath.

2282. *The manner in which the Icelanders capture falcons* is thus related by Horrebow in his *Natural History of Iceland:* — " They strike two posts into the ground a little distance from each other; to the one they tie a partridge or pigeon (for want of either sometimes a cock or a hen), by a small line, two or three yards long, that they may flutter about a little, and that the falcon may sooner observe them ; to the leg of the partridge or pigeon they tie another string, a hundred yards long or more, which goes through a hole in the other post, in order to draw the bait to that post, where a net is fixed like a fishing-net, with a hoop in a semicircle of six feet diameter; this being pulled down, it goes over and covers the post, for which purpose there is another string fastened to the upper part of the hoop, which goes through the first post to which the bait is tied: these two strings the falcon-catcher has hold of, that he may pull the bait where he pleases, as also the net over his prey. These nets they fix near a nest, or where they see a flight of falcons approach. As soon as the falcon sees the bait fluttering on the ground, he takes a few sweeps about in the air just over the place, and looks about to see if there be any danger; then he strikes with such violence that he takes the bait's head off as clean as if cut off with a knife. The moment he has struck the bait, he generally flies up again, unless very hungry, to look about if any danger be at hand, or any thing to interrupt him in the enjoyment of his prey. Whilst he is in the act of flying up, the falcon-catcher pulls the string and the dead bait to the other post close under the net, which the falcon not observing, presently darts to devour its prey; but the other string being pulled, he is caught in the net." Mr. Anderson also says, "the falcon is taken by means of a bird (the shrike we presume), in a cage put near the place where the net is fixed ; which bird can see the falcon at an incredible distance, and by a certain noise gives notice, whereupon the falcon-catcher, who conceals himself in a bush, throws out a pigeon to flutter about, which, as soon as the falcon espies, he strikes down upon, and immediately the net is pulled over him. He is taken out with great caution, for fear of breaking any of his feathers in the wing or tail, and has a cap clapped over his eyes. The falconer is generally hid behind some stones or bushes, or else lies flat on the ground, a hundred yards or more off, where, even if the falcon sees him, he has no mistrust, being at such a distance."

2283. *A British method of capturing the falcon* is by means of what is known as the bow-net, thus described by a talented friend already noted, whose ready access to libraries affords him opportunities to glean from sources not open to every one. His acumen being such also as enables him at once to select the grain from the chaff, we offer with confidence whatever he is kind enough to favour us. His description of the bow-net is as follows, and the model he kindly sent us in aid of his description is herewith seen (*fig.* 349.). "This engine," he says, "consists of a *bow* made of some stout wood, or of iron, forming a *semi-oval* (see model); each end of the *bow* is bent into an *eye*, and works backwards and forwards, when pulled by the falconer, after the following manner: two iron pins are thrust into the ground at four feet distance the one from the other, the heads of which being likewise turned into an *eye*, form with the *extremities* of the *bow* hinges at those parts. An oval net is prepared, measuring five feet long from end to end, and four feet wide across at the *conjugate* line, an imaginary line passing from one extremity of the bow to the other as it lies flat on the ground; half this net is staked down, at its circumference, to the ground with pegs, the other half is sown on to the *bow;* the net should be verged all round with a stout cord; the meshes must be two inches and a quarter square, so as to admit of the head and neck of the falcon passing through when the bird is under the net: the net work to be dyed dark brown or green. When the engine is set, the *bow*, and with it the half of the netting, being reflected back on itself, a lure of raw meat, or a live bird, is staked down to the ground within the range of the fall of the net. The falcon pouncing on the lure, the fowler, who lies in ambuscade at a distance, with a nimble jerk twitches over the *bow* and leaf of the net, by means of a long string attached to the circumference of the former (as represented in the model). When the *bow* and *pegs* are made of wood, the *pegs* have *tenons* on their heads, which fit into corresponding *mortises* cut into the extremities of the bow; a pin is then run through them to keep all in place, at the same time allowing the joints free motion. Whether the apparatus be made of iron or wood, in either case the parts should be painted a dark colour, and may be farther concealed by having loose grass, weeds, and

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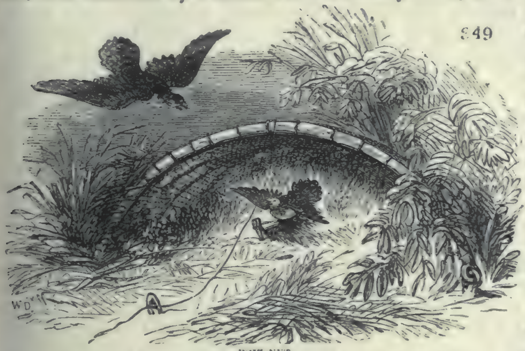

BOW-NET.

light rubbish thrown over the engine." He farther remarks, "I have in my model represented the bow of the net as made of iron, and working in a double eye. Iron is lighter, more easily pulled over, less likely to break, more portable, and being less bulky is less discernible. I know the advocates of the *wooden* bow say, that you can tuck the net under the bow as it lies on the ground, and thus hide it from the birds; but, in order to do this, the bow must be made of very broad stuff, thus it will be cumberous and tardy in its operations; and that an engine intended to ensnare a quick animal! Nay, more than this, the net cannot be tucked so closely as to really conceal it effectively from view. Painting the bow and pegs dark, and dyeing the net brown or green is a much better *ruse;* indeed, the best that we can adopt."* The same erudite authority observes, "I know not how the old Romans caught their falcons or hawks, but from a proverbial expression of theirs, which occurs in *Terence*, it would appear that the net was not used for the purpose:—

'Non rete accipitri tenditur neque milvio.'

There is a kind of net mentioned by authors living in the last two centuries, which appears, like falconry and hawking itself, to have fallen into total oblivion, and the make of which I have not been able to ascertain with any degree of accuracy. That net is the *urive* or the *urines*, thus,—'*Urines* (in falconry), nets to catch hawks with.' (*Philips's English Dictionary*, published in the year 1705.) '*Urives*, nets to catch hawks with.' (*The Gentleman's Recreations*, under the head of Hawking.) Again, in the same work, the following passage occurs:—'Take a pair of these nets, called by falconers *urines*, or *urnes*, ... being common to be bought at net-makers' shops, I shall say no more of them." The learned friend, to whose researches we are so much indebted, observes that, after a long and apparently hopeless search in every quarter likely to solve the mystery, which appeared to hang around these terms, "In vain I searched encyclopædias and dictionaries in all languages, old editions and new; with the exception of the authorities above cited, the word *urive*, or *urines*, was not even noticed at all; and we have seen what meagre descriptions they who did acknowledge the existence of the device vouchsafed to give. At length I stumbled upon the following passage in Willoughby, which I think affords some clue to the discovery of the shape and structure of that engine, which is as follows: — An account of some sea-fowl from a description of the Ferroe Islands, —'The *lunde* buildeth its nest some times on the continent, far from houses, digging itself two or three yards, according to the nature of the place, under ground; sometimes in *ures* (that are places under high cliffs, and by length of time are filled between with earth, and covered with grass), in which places they dig themselves into the earth, or build, where there is no earth, their nest under and between stones, where they can come to breed their young with most security, the most part being taken in such places, so that a man may often take above a hundred *lundes* in one *ure*. When the birds are flown, the men take them flying; which is done in this manner, —they have a long pole, at the end of which is a hoop drawn over with a net, whereof the meshes are almost as big as the quarries of a glass window, being like the net wherewith they take shrimps in some places, and this they call a stang, or staff. With his staff the fowler sitteth on the cliff, or in the *ures*, among the great stones, where he knoweth most fowl to come, which they call *flight-places;* and when the *lunde* cometh, flying either from or to the land, he lifteth up the staff and the net against the fowl; and when he hath got it into the net, he turneth the staff about, that it may entangle itself the better therein, a man being sometimes able to take two hundred *lundes* in that manner in a very short time.' Surely the net described in the above passage may very likely be, I do not say *must be*, the *urive*, which thus derives its name from the *ures*, in and amongst which it is found to be used? It is probable, if such be the real derivation of the term, that, through carelessness of speech and the not distinguishing a species from a genus, instances of which are of daily occurrence, the word *urive* may have been applied to nets of similar shape, but put to other purposes, such as catching falcons and hawks, instead of *geese*, and such like sea-going birds. The *lunde* is known by the name of *Anser Arcticus*. I may remark that Ainsworth and others have the word, '*Uria*, n. s. a naff or cormorant;' again, a sea-bird; and we have seen that the *ures* were the abodes of sea-fowls." (*Notes by the Hon. and Rev. Charles Bathurst.*)

2284. *The short winged hawks*, as the goshawks, buzzards, and sparrow-hawks, are netted, according to Sir John Sebright, after the following manner: — A net, eight feet in depth, and of sufficient length to inclose a square of nine feet, is suspended by means of upright stakes, into which transverse notches are made, and on which notches the meshes of the net are loosely placed; so that, as soon as a hawk strikes against it, the net readily disengages itself and falls. The inclosure is, of course, open above, and within a living bird, a pigeon usually, is fastened as a lure. It is likewise necessary that the colour of the net should assimilate as much as may be with the surrounding objects. By this process the larger falcons also, when very hungry, are occasionally taken, though the occurrence is rare; but in taking the common hawk, the merlin, and the hobby, the square net is effectively employed. The *call-birds*, or baits, are varied according as the one variety or other of the hawk is sought for. The shrike we have already stated to be used as an *aid-de-camp.* "This bird," Mr. Griffith observes, "which recognises from a great distance the various *Raptores* hovering on high, and is but slightly agitated when he sees a buzzard, rushes into the hunter's lodge when he perceives a falcon. The hunter then slips a pigeon under his net, also held by a strong cord, to leave him the power of fluttering and exciting the falcon, which, when he attacks his prey bitterly, suffers himself to be drawn after it within the fall of the net. Should this plan not succeed, the fowler (if he has one) takes a tame falcon, which age and infirmity have rendered useless, and attaches it to the end of a long pliant twig, by the feet, and fixes the other end of the twig in the ground. A cord, beginning from the point where the bird is retained, passes through the pulley which occupies the centre of the nets. The fowler, who holds the extremity of it in his box, on a signal given by the shrike, draws it; and the twig bending, obliges the falcon to extend its wings as if about to pounce on a prey. The wild bird then directly precipitates himself on the other, and falls into the snare." (*An. Kingdom*, vol. vi. p. 210.)

2285. *Owling is also another method of luring falcons to the net.* Any owl may be employed for the purpose, but the same authority informs us that the great horned owl is the usual bait, and is made use of after the following manner: — The owl, confined between two wooden stands or rests, is taught to fly from one rest to the other without touching the ground. Between the rests a cord is tightly stretched, on which a ring plays, and to which another slacker cord is attached by one end, the other being fastened to the jesses on the legs of the owl, whose movements are thus confined to flying from one block or rest to the other. To this change of position he is accustomed by presenting him with food on the opposite side to that on which he may happen to be resting, until he becomes completely habituated to this method of exercising himself. A saloon is now formed in the midst of a copse of boughs, in the centre of which a log or rest stands, and without the saloon a similar one is placed at a hundred paces distant, the intermediate space on which the owl is placed being cleared away. It is necessary that the top and sides of this saloon should be covered with boughs in such a manner, that, although the outside is distinctly seen, there is no opening that will admit any bird to enter with unfolded wings. Nets are placed against the top and sides, leaving open that part only opposite to the resting-place of the owl. The fowler now concealing himself keeps watch, and when he observes the owl lower his head and turn it to one side, he becomes certain that some bird of prey is in the air. The hawk now marking the owl for his own, follows him into his retreat, when, becoming hampered in the meshes of the net, he is easily secured. Other methods of capturing hawks may be seen in the older treatises on falconry, but as they are most of them framed on similar principles with those described, we shall not enter further into the matter, but content ourselves with observing, that the use of *trap-cages*, fashioned after those employed for taking goldfinches, linnets, &c. have also been employed by falconers, particularly for the capture of the smaller varieties of hawks.

SUBSECT. 2. *The Technical Terms in Use among Falconers.*

2286. *The redundancy of sporting terms in days of old was very great*, and the use of certain technicalities was essential to the character of every true sportsman. As monks and prelates fostered the sport, we need not wonder that many of its terms were derivatives from the Latin. Our Saxon masters had left us many. We had borrowed from the French, Dutch, and Belgic many more; and, as may be supposed, some were vernacular. Nor was the language used in this pastime entirely confined to mere technicalities, or terms of art; for, as is well observed by an ingenious writer, "No art or craft whatsoever has more copiously contributed to the figurative language, proverbs, and adages of our ancestors. To them hawking was a complete mine of metaphor. Our poets, from Chaucer to Spenser and Shakspeare, down to those of more modern times, continually derived figures, illustrations, and comparisons, from the falconer's craft. Those who are at all familiar with the works of our immortal dramatist, will instantly recall many instances of this habit. Nor were our English poets at all peculiar in this practice. The same obtained among the old writers of France, Spain, and (perhaps in a more marked degree) among the old Italian poets. The great Dante abounds in terms of falconry, and similes and allusions drawn from the same source; and so also does Petrarch." (*Penny Magazine*, part xxxii. p. 464.) Our author might have extended the list of terms which our language owes to hawking. The very name hawker, as applied in common to an itinerant dealer in small wares, is, in all probability, derived from an old custom of carrying about hawks for sale. We are borne out in this assumption by Mr. Nares, in contradiction to Johnson, who derives it from *hock*, a German word for salesman. In all sporting matters this great lexicographer must not be implicitly relied on; as one instance, among many others, we cannot forget that he defines pastern as "the *knee* of the horse." The sellers of hawks being, according to Mr. Nares, called cadgers, from the *cadge*, or stand, on which they carried them about, has transferred itself to a general trafficker, or huckster, of the lowest order, who is thence also often called a cadger. Numerous, however, as these figurative allusions were, the technicalities more than equal them; and, according to the sporting prioress of Sopwell, an acquaintance with them was of the greatest importance to all such "as woll lerne the kynaely speche of hawkyng." We, however, by no means profess to give all the hawking terms that are common in the vocabulary of ancient falconry; neither can we hold ourselves as answerable for the critical correctness, either orthographical or etymological, of those which appear on our pages. The authorities from whence we have derived them are often at variance with each other, and sometimes with themselves. We, however, would refer the inquisitive reader, who would seek further into the subject, to the Dame Juliana Berners, to Turberville, Latham, Markham, Blome, &c.

2287. *The parts of the body of the hawk are thus named by early falconers:* — In the head, the upper mandible was called the *beak*; the lower the *clap*; *coping* was paring both beak and talons; the yellow bare spot at the base of the bill, which naturalists term *cere*, the hawker knew as *sear* or *sere*; and the nostril as the *nares*. The legs, from above downwards, were called *arms*, the toes *petty singles*, and the claws *pounces*. The wings of the hawk were its *sails*, as their long feathers were *beams*. A subdivision of the wing feathers gave to the two longest in each wing the term of *principal feathers*, and, to the two next, that of *flags*. *Imping* of these feathers was artificially mending them. The tail was called the *train*, as the feathers underneath it and behind the thigh were named *pendent feathers*. The craw, or crop, which in hawks is rather a distension of the gullet than a distinct pouch, was called the *gorge*. The stomach was known as the *pannel*, and the fæcal matter, within the intestines, the *glut*. It may be prudent to observe, that *gorge* is more particularly used to imply abundant feeding. Substantively it also implies a very full meal given to the hawk at intervals of four or five days beyond its ordinary allowance, as circumstances may seem to require an extra stimulus. *Summed* and *unsummed* were terms applied to the complete, or mature; and the immature plumage, bearing the same signification as *mewed* or unmoulted, and *intermewed* or moulted. *Seamed* was a want of condition, as *inseamed* was perfect condition. *Put in*, the game when it takes to a hedge to evade pursuit is said to be *put in*. *Waiting on*, — to teach a hawk to well *wait on*, i. e. to readily attend to her master, is the very feather in the master's cap. When soaring aloft in the air, the hawk bends herself to watch all his motions, and is ready to come to his *luring*, or to follow him wherever he pleases, it is then she is perfect in *waiting on* him. *Whistle*, — by this sound the falconer dispatches his hawk from his fist, and he *lures* her back again to the fist by the same. The *hallo* is used by others for similar purposes,—

> "*I'd whistle her off*, and let her down the wind
> To prey at fortune." *Othello.*

Again, in an old play: —

> "If you can *whistle* her
> To come to fist, make trial, play the young falconer."

2288. *The names of hawks as connected with their ages.* Eyass is a young hawk just taken from the nest. This word is variously written, the most usual has been eyass. Some have derived it from the French *niais*, silly; others from the German *ey*, an egg; and as many of our words used in hawking are derivations from the Saxon or German languages, such etymological construction is not without its force. Eyerie, ey'ry, or aerie, — this word, which expresses a nest of hawks, is also by many considered a derivative from the German *ey*, an egg. By others, however, it is thought to be of Welsh origin, derived from eryr, an eagle. Webster appears loth to fix its critical etymology. Bailey writes ae'rie, an airy or "nest of goshawks," and, of course, of any hawk whatever. Blome makes a distinction between eyasses taken from the nest and bred up by hand in a room, and those bred up and kept at hack, *i. e.* at liberty. We notice this distinction, not for its importance, but that the readers of this author may not be led into difficulty on some future occasion, when others of the older authors may advert to an eyass tackler. When an eyass can hop from bough to bough, it is called a *brancher*. One taken from the nest and allowed its liberty, being only restrained from escaping by observing a certain time and place for feeding it, is known as a *tackler*, or *hack-hawk;* and such, the old trainers say, make the best hawkers. The young bird, when it can fly and prey for itself, is called a *ramage*, or *soar-hawk.* Young hawks, taken in the spring, were often called *lantiners;* but, taken after *Lent* time, they were called *haggards*, from their disposition then being more haggard or untractable. Haggard, however, in its general and correct sense, implies a full grown hawk of any kind, taken in its unreclaimed state. Bailey has "*haggard-hawk*, a *wild* hawk which preyed for herself." Though this word is generally written with a double *g*, its derivation being undoubtedly from the Saxon word *hag*, it would, perhaps, be more correct were it written *hagard*. We may also remark, that the old writers on falconry mystified this word not a little; and were full of the praises of the haggard, as though it was a specific term applicable to one kind of hawk only. Latham's *Book of Falconry* treats from beginning to end of the haggard falcon, by which he intends the slight falcon, although it is under this term he continues his description of hawks generally, to the end of the first book; nor is it without much study, and comparison with other authorities. that we at last find that haggard is not intended by him to apply to any one species of hawk, but to every hawk whatever that is wild and unreclaimed. This appropriation of a general quality to designate a particular individual, is further instanced in Turberville's falcon *gentle*, which was undoubtedly thus named from its mildness, and even affectionate manner towards its keeper, when it is reclaimed. Linnæus (critical as he was), from these authorities, was led to class the slight falcon under the unscientific term of *F. gentilis*. Falconers have been also too apt to call the female hawk of almost every kind, *falcons*, and the males *tiercels*. There are, however, but two kinds of falcons conventionally acknowledged in common, by the falconers of the present day, which are the Icelander, and the slight or peregrine falcon. As a misnomer, this has caused much ambiguity and confusion to the readers of the older hawking treatises; and so imperative does custom become, that we ourselves are sometimes apt to introduce the word falcon, where its critical propriety is questionable; but we do it to avoid the tax of pedantry. We are induced to dwell more on this subject than the matter might to some seem requisite; but as we have known much difficulty and misapprehension to have occurred by this obscurity of nomenclature, and malappropriation of general qualities in the designation of individuals, we could not resist the impulse to endeavour to rectify the error; for we again state, that we cannot refrain from thinking that hawking will again become prevalent.

2289. *The actions and acquirements of hawks.* The operations of taming the hawk were called *reclaiming*, as the accustoming it to bear the sight and presence of company was *manning* it. Fluttering, or striving to escape, is *baiting;* fighting with each other, *crabbing;* when sleeping, the hawk *jouks*. Her prey is her *quarry*. *Binding* is the act of grappling with her quarry; when she flies away with it, she *carries* it, as she *deplumes* it when she strips off its feathers: the dead carcass is called the *pelt*. When having seized her quarry, the hawk first carries it aloft, and then descends with it to the ground, she *trusses* it. When, after soaring aloft, she descends to seize her quarry, she *swoops;* the descent has also been called *swoop*,—"at one fell swoop." The hawk's pursuit after game is called *flying;* thus, also, a hawk *flies at fur*, when hares or rabbits are the objects pursued; or she flies at *plume* or *feather*, when fowls are the game in view. When she flies out too far from the game, she is said to *rake*, as she *checks*, when, forsaking her proper quarry, she *flies* at crows, magpies, or the like.

2290. *Mewing and intermewing are important hawking terms. Mewing* is the moulting or casting of the feathers: hence *mew* is the place appropriated to this process, and hence a hawk is *intermewed* after she has gone through her first moult. Previous to the first mewing, or moulting, she is called either a *soar-hawk*, or a *ramage-hawk*. Hawks are also known as *hawks of the lure*, or *hawks of the fist*, according as they return to the lure or fist. Long winged hawks are of the former division, and the short winged of the latter. *Castings* are the indigestible matters thrown up from the stomach: *castings* are also very commonly spoken of as forced emetics; such as small stones, wool, feathers, &c. as will be further treated on. *Cadge*, or *cage*, is the stand on which hawks are moved from place to place, and will be figured hereafter. In the numbering of hawks we call two a *cast*, and three a *lese*.

Subsect. 3. *The Apparatus employed in the Training and Flying of the Falcon and Hawk.*

2291. *The implements used in hawking* will first engage our attention. The hood is an important one, and has called forth the descriptive powers of a royal writer in the person of Frederic II., who describes it in his *De Arte Venandi cum Avibus*, which was printed at Augsburg, A. D. 1596, from a manuscript belonging to a physician of Nuremburg. In this work, now extremely scarce, there is an interesting description of the hoods called *capellæ*, which were first invented, as it is supposed, by the Arabs.

2292. *The hoods for hawks* (*fig.* 350.) are the proper, on the left hand in our cut, and the rufter, on the right hand. Both are almost equally necessary and important assistants to the falconer in the training of falcons and hawks. In the olden instructions of early falconers, the different hawks we find were hooded with one of these hoods only, according to the kind of bird in training; but later falcon trainers found it proper to make occasional use of either the hood proper, or the rufter hood, as circumstances indicated. The hood proper is a cap made of stout leather, of a size corresponding with the hawk it is designed for. It presents an aperture before, which is to receive the beak, and is also made sufficiently large, not only to receive her food, but also to allow of her ejecting her castings. It is not, however, the custom with modern trainers to feed their hooded hawks while under initiatory training; on the contrary, they omit it until the hawk is somewhat more reclaimed, but they give a little meat directly the hood is put on. Behind the hood a vertical slit is seen, which separates the cap posteriorly to receive the head. Each side of this slit is fur-

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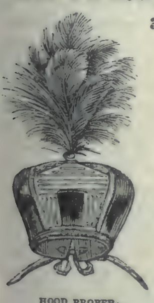
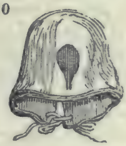

HOOD PROPER.


HOOD RUFTER.

nished with a leathern brace, and as these interlace, so, when drawn tight together, the hood becomes secured on the head. Great care is required so to form the hood, that, while it effectually prevents vision, it shall not press injuriously on any part, particularly on the eyes, which only can be done by deeply indenting the leather laterally. It is indispensably necessary that, in putting the hood on, as little violence as possible be used; for any injury received, or any fears excited at this time, are eradicated with great difficulty. It is to avoid this early disposition on the part of the hawk to rebel, that the rufter hood comes in aid. The enuring the hawk to this head gear is technically called *making to the hood.* A hawk's proper hood is usually topped with a plume of mixed feathers of the game kind, by which feathers it is put on or taken off. It may be well again to remark, that the placing of the hood on the head, inoffensively to the animal, requires a dexterity only to be acquired by care and perseverance. It would be well, therefore, first to practise it on a lay figure, *i. e.* a stuffed specimen; for if the lesson is to be practised on an unreclaimed hawk by an untaught hand, the bird will probably be ruined, and the hawker disappointed. The more readily therefore, we repeat, to enure the raw hawk to a hood, is to commence with a rufter hood. and particularly for the mature and passage-hawks. The Icelander, and the haggard slight falcon, especially the former, is so wild and obstreperous, that it is not prudent to attempt hooding with either of these restraints, rufter or proper, until by fasting, dripping, and watching, they are rendered obedient.

2293. *The rufter hood*, we have hinted, is not approved of by some trainers; and without doubt it may, in experienced hands, be dispensed with in most cases; but we must repeat, that when a haggard is newly taken, the stiff hood often offers much annoyance to the bird even in good hands; whereas the rufter hood, as seen in the marginal figure, being made either of cloth or chamois leather, is very supple and light, and may be slipped on and off in a moment; it is also easily secured under the throat, either by a drawing slip or by two ends tied to each other. In the scarce work, *De Arte Venandi*, of Frederic II. already noticed, p. 697., the hood is so highly and so elaborately described by this imperial author, as to warrant us to suppose that much of his known success in hawk-training was gained by its means; without it our own power over the hawk would be little.

2294. *The properties of the hood*, as a restraint, are very great. With this on, whether the hawk be at home or abroad, she is kept perfectly quiet; without it, we repeat, our power over the haggard nature of these birds would be very limited. In the field especially they would be under no restraint at all, but would *bait off* the moment a bird of any description came in sight. Sir John Sebright has elucidated this effect in a very philosophic and satisfactory manner. He says, — "It may, perhaps, appear paradoxical to assert, that hawks, by being kept hooded, are brought nearer to their natural habits: but this is undoubtedly the case; for, by this treatment, they are induced to remain at rest when they are not either feeding or in pursuit of game; and such are their habits in a wild state, when left undisturbed." We again repeat, that as long as the hood is on, the hawk remains quiescent, and that equally whether confined to the block or carried abroad on the fist. When the hawk is removed from place to place, it is evident that the hood is indispensable, to prevent anxiety or alarm. It is necessary, however, to observe, that the hood is not in general use for either goshawks or hawks, properly so called, when carried abroad, but is principally required at those times for the falcon tribes. This contrariety of treatment arises as well from the differences which exist in the training as in the flying of these birds, as will become more fully apparent in the course of our detail. The sudden removal of the hood for sporting purposes, and the starting off of the hawk, are, in the technical language of the falconer, termed "flying out of the hood." It is a singular caution, met with in some of the ancient hawking instructions, that the hood must on no account be formed of any red material, that it might not subject the hawk to be struck at by an eagle. This caution might be a prudent one, where scarlet plumage was common to the birds of particular localities, but in Europe it would not apply.

2295. *The brail* (*fig.* 351.) is a thong of soft leather longitudinally divided, so as to admit the pinion joint within the *slit*, after which the loose ends are to be thus disposed of. The lower is to be passed backwards under the wing, and, being brought along the side of the body, is to be tied to the other end above it. This restraint prevents the newly taken hawk from *baiting* (resisting) during the time her attendant is engaged in any operation on her, and such is essentially necessary to keep her from baiting off, and thereby injuring some of the more important of the wing or train feathers; the loss of any one of either wing or train feather would incapacitate her from successfully flying at any strong quarry. Imping, it is true, in such cases can be resorted to, but even the best imped feather is unequal to the natural one, and imping if possible should be avoided: for it must be evident that the abstraction of one wing-feather only would greatly interfere with the power of the wing.

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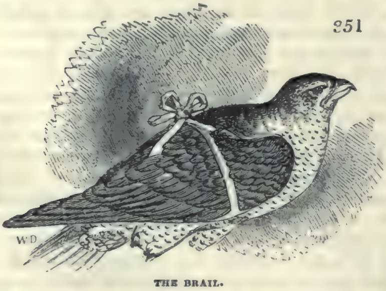

THE BRAIL.

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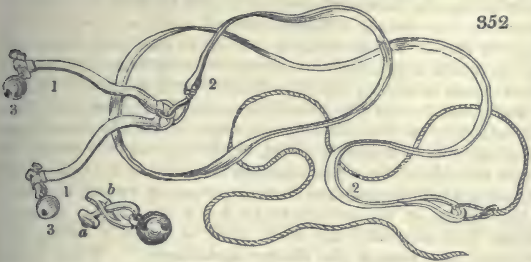

JESSES, LEASH, AND BELLS.

2296. *The jesses,* 1 1, *leash,* 2 2, *and bells,* 3 3 (*fig.* 352.) *as appointments of the hawk.* The first and last, indeed, are complete fixtures, being never removed from the legs. The jesses (*b b*) are straps a few inches long, formed either of silk closely knitted, or of leather, but commonly the latter. Each fastens round the leg by a slipping loop or noose, leaving an end which is furnished with a ring. The two rings are intended to hook on the swivel of the leash in such manner that they can be disengaged in a moment, when the quarry comes within view. When the hawk is carried on the fist, the leather end of the jesses are wound round the fingers for security. The bells are necessary articles, not only to apprise the trainer where his strayed bird is, but also when heavy bells are used, as is sometimes purposely done on hawks at hack, it prevents them from preying for themselves. Each bell is attached to its appropriate leg by a leathern brace called *bewit*, when the button (*a*, *fig.* 352.), being passed through the slit *b*, secures it to the leg. Formerly the tone of the hawk bells was an important consideration, so much so that they were imported from Germany, as being made in no other country to produce so much or so clear a tone, which was attributed to the silver introduced into their manufacture. Shakspeare expressively alludes to this, —

> "How silver sweet sound lover's tongues by night."

According to the *Booke of St. Alban's*, the Milan hawking bells were to be so prepared, that one bell should be a semitone higher than the other. The leathern-eared moderns are less refined, and a pair now lying before the writer, are twins in sound and size, and yet are true *hawk-bells.*

2297. *The creance* is nothing more than a long string or light cord, which, being attached to the leash or leathern thong, allows the hawk more liberty when occasion requires it. It is seldom used, however, except during the training process.

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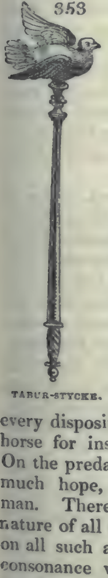

TABUR-STYCKE.

2298. *The tabur-stycke and hawker, the lure and the drawer,* are all modifications of one instrument *fig.* 353.). Some one of these modifications has been always used by way of allurement to the hawk to return to the hawker. The tabur-stycke of olden times, we are told, was merely a piece of wood rounded and besmeared with blood. The hawker, according to Mr. Hazlewood, was an improvement on the tabur-stycke of the *Booke of St. Alban's*, and "the little rownde stycke hanging in a string," mentioned by Turberville. The hawker was a wooden rod, about twenty-two inches long, its upper part being cased with iron, and having a bird with expanded wings at the top. It was also furnished with a bell, which was said to be in tone "rather sullen than musical." This tabur-stycke, or hawker, must have been a very magician's wand, for by the same authority we are told, — "Ye must fynde a foule in the ryuer, or in a pitte precisly, and then sette your hawke a grete space upon a moll hyll or on the grounde, and crepe softly towarde the foule from your hawke streyghte waye. And whan ye come almost there as the foule lyeth; loke backwarde toward the hawke and with youre honde, or wyth your tabur-stycke, becke your hawke to come to you." It is, indeed, surprising what effects discipline will have over the most stubborn natures; particularly where it is mixed with indulgence and the hope of reward. As food is the object sought after by every animal beyond any other, so the organ through which they receive it is by them at least respected, sometimes it appears highly prized; obedience follows, and continued hope of reward keeps the discipline in full energy, and destroys every disposition to open rebellion. Our hold on the generous animals, as the dog and horse for instance, is grounded in part on fear, in part on hope, and in part on affection. On the predacious animals, our hold on their obedience is principally selfish; much fear, much hope, and faint symptoms of personal attachment mark their intercourse with man. There is, however, without doubt, a certain degree of ferocity implanted in the very nature of all carnivorous animals, which by rendering them fearless, fits them for the attack on all such animals whose flesh will suit their tastes and satisfy their wants. This is in consonance with their natural habits, nor are we to regard them on that account with aversion, nor blame them for those propensities nature herself implanted within them. Nay, more, they occasionally evince sparks of genuine attachment. We have on record notices of hawks, which, however hungry, would not eat unless the food was offered by the favourite falconer. Van A mburgh's lions and tigers evince marks of affection also.

2299. *The lure and drawer may be considered as identities.* This instrument was formerly prepared with much more trouble and artifice than seems to be at present employed, as we witness in the description given of it by Sir John Sebright, who says, "the lure is a forked piece of wood, covered with the wings of birds. Pieces of meat are tied to each side of the lure, and the whole is attached to a string, three or four feet long, by which it may be swung round in the air," or thrown to a distance on the ground. In the olden times, on the contrary, we have reason to suppose that the lure was more artificially framed, and so fashioned as to resemble a bird, exhibiting not only wings, but a beak and talons also. The plumage constituted the *drawer*, and the feathers which garnished it were purposely varied, according to the nature of the quarry to be flown at. Thus, we read, "When they accustom the hawk to fly at a kite, a heron, or a partridge, they change the *drawer* accordingly." When hawks under the highest discipline were flown, a lighter drawer, after the form of a tasselled hood, was used. It, however, remained sufficiently conspicuous, as may be seen in the accompanying sketch from Reedinger. The *lure* is a most essential part of the apparatus employed in the training and practisings of the long winged hawks, and of those only; nor can they be too early or too intimately acquainted with it. Thus, to make the lure, the hawk is fed entirely on it during training; and we know how powerful a medium of connection the furnishing of food becomes between ourselves and the animals around us; and it follows that by such means the confidence of the animal, which in a wild state accompanies them through the vast field of nature, in the domesticated one centres in the hand which feeds it.

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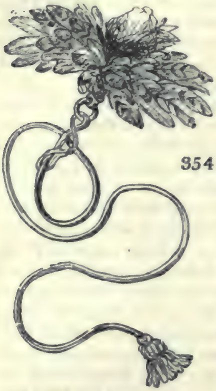

HAWK LURE.

2300. *Hawking gloves* of sufficient size and substance, form a necessary hawking appointment. These gloves were made of some stout substance to guard the hand and wrist on which the hawk is placed. In accordance with that show of state, and observance of ornament, which accompanied even the sports of old, the glove was a very consequential article. Some were garnished in the most costly manner. In the inventories of apparel belonging to Henry the Eighth, frequent notices occur of hawking gloves, and it is known that seven such, "most richly embroidered," were to be seen in the royal jewel house at Hampton Court. (See *Hawking-glove*, figured, p. 123.)

2301. *Seeling, coping, imping, mewing, caging, or staging,* were necessary and important operations in falconry; and, with the exception of the first, or *seeling,* they remain the same to the present day. We only notice seeling, to make our historical account of the art complete. *Seeling* was an early and cruel practice of the falconers of sealing up the eyes, to prevent the hawk from seeing around her. A needle and thread were passed through both eyelids, so as either to shut out the whole of the light, or only a part, as the two ends of the thread were more or less closely knotted. As early as the days of Dame Juliana Berners, this cruel practice was getting into disuse; for she informs us that, in her time, there were "falconers of latter and better knowledge, who had discovered a method of blindfolding the bird without unnecessarily torturing it."

2302. *Coping we have already alluded to* as being a paring of the beak and talons of hawks, to prevent their sharp points from wounding the hands, &c. of their keepers; to remove also the exuberant portions of a too rapid growth during close confinement; and sometimes also as a check to their unhallowed pursuit of game. In performing this operation, particular instruments, called *coping-irons,* were formerly employed; but either a sharp knife, or a file, is sufficient for the purpose, taking care that the sensitive parts are not wounded by penetrating to what is called the *quick.* We have already hinted at a division of animals into generous and selfish; or, we might say, into placable and ferocious. The former live on grain, or on the fruits of the earth; indeed, are essentially vegetable eaters: the latter are carnivorous, preying on the flesh of each other. Such are the objects under our present consideration, and it is on them principally that these coercive measures are practised; but even the hawk trainer will find, that keeping up the hope of reward will answer his ends better than the dread of punishment in most of them.

SECT. VIII. *Mewing, Weathering, Bathing, and Imping the Feathers of Hawks.*

2303. *These being subjects of much consequence in the treatment of the hawk,* they may, with propriety, receive a separate and distinct notice.

SUBSECT. 1. *Mewing, or Housing, of Hawks.*

2304. *The mewing, or housing, of hawks* is a very important part of their treatment, whether as intended to imply their general state of confinement, or that which is particularly adapted to their moulting state. Mewing originally was confined to the direct act of the moulting, or casting of the feathers of the hawk; and there can be little doubt but that the latter acceptation of the term is the correct one; and that the term *mews* was originally intended rather to express the immediate apartment in which hawks were shut up to *mew*, or cast their feathers, than to express their ordinary habitation, though even in this sense it is not altogether a misnomer, as will be seen. The moulting of feathers is expressed by a word of similar sound by the inhabitants of almost all European countries. By the Welsh it is called *miw*, *mudare* in Italy, *muer* in France, *mausen* in Germany, and *muiten* in Holland, &c. And although the word has divers other meanings, as *mew*, a gull, *mew*, to cry as a cat, &c. &c. it more strictly refers to *change* and *alteration;* hence to *mew*, or *change* the feathers: and not only does it express a change of feathers, but also of hair, skin, horns, and other animal exuviæ of a deciduous nature, —

"Nine times the moon had *mew'd* her horns." *Dryden.*

Mew also expresses *confinement*, which brings the term more particularly to bear on our subject, —

"More pity that the eagle should be *mew'd*,
While kites and buzzards prey at liberty." *Shakspeare.*

"Close *mew'd* in their sedans, for fear of air." *Dryden.*

"She hated chambers, closets, secret *mews*,
And in broad fields preserved her maidenhead." *Fairfax.*

2305. *The Mews at Charing Cross*, we make no doubt, were built as a general receptacle of the hawks of the kings of England, not only when moulting, but also as a general conservatory for these birds. Richard II. in 1377, appropriated it to this purpose; and it continued so until 1537, when, in the twenty-seventh year of Henry VIII. it was converted into stables for the horses of that monarch; from which originated the application of the term *mews* to the long ranges of stables, which run behind the streets of London inhabited by the noble and wealthy. An honoured and talented friend of ours, who in an eminent degree unites deep research with much wit and humour, observes on these mews, "Falconry is indeed so obsolete as a practical sport, that almost the only thing which in these days reminds us of its ever having existed, is the word "Mews" one sees written up in the back streets of London: even the "King's Mews," which gave some idea of grandeur and gallant bearing, are pulled down, and swept away from the face of the earth, and no longer designate the present abode of the noble steeds of the royal palace! And as to the ordinary lines of coachhouses, ginshops, dunghills, dirty fowls, bristling *cheveux-de-frises*, with empty quart-pots hung on the pegs, swaggering helpers, shrieking children, and scolding women, how little does this chaos bear the stamp of the *mews* of olden time, where the stately falcons were kept up during moulting season, when they were *changing* (*muto*, hence *mews*) their plumage, and all were carefully tended, and reclaimed, and trained for their baronial service!"

2306. *Hawks*, in their general state, should be kept in an apartment to which the air has free access, but completely sheltered from cutting winds and frosts. When numbers are to be kept, a quadrangular shed might be erected, where the benefit of the lee-side might always be obtained. They may rest, according to their kinds, on the flat, or be placed on perches or blocks; but during the warmer months many falconers allow them grass sods to rest on. It will at once be evident that hawks reared from the nest cannot bear the inclemencies of the weather in the same degree with the haggards. With this caution, it may be observed, that, except during intense frost, it is not judicious to shut them up in a closed apartment, even in winter. The open air is their natural habitation; and it is therefore that which is most likely to keep them in health and strength. On the subject of feeding, we forbear to dilate here, as it is fully noticed in other parts of our detail.

2307. *Bathing is strongly recommended by most practical hawkers*, and it is undoubtedly essential to the health and comfort of these birds. M. Huber is so warm an advocate for it, that he directs that such hawks as do not bathe voluntarily, be forcibly dipped once or twice a-week. Sir John Sebright recommends their being bathed "every five or six days in a clear stream, or pool of water, that is shallow at the edge." In very hot weather we should think bathing two or three times a-week would not be too much. It is necessary, however, to observe that hawks are not taken to the bath unfed, and which caution seems generally observed, but the meal should be a moderate one. When a running stream, or pool, is not within the boundaries of the mews, wide bowls, with water, may be placed before them. But to offer this luxury truly after a state of nature, it is only to take them to any stream or pool, each being hooded and furnished with a leash, to which a creance should be tied, to give more liberty. Being then fastened to the ground at a proper remove from one another, the keeper, or trainer, unhoods them, and retires to some distance; when, having bathed and plumed themselves, they should be hooded, and taken up as soon as they begin to show any signs of uneasiness, otherwise, as well observed by the ingenious baronet, "*baiting in the creance* with a full crop might prove very prejudicial."

2308. *Weathering of hawks* is also important towards the preservation of their health. They should be weathered, *i. e.* placed without doors, and unhooded at every convenient opportunity. The haggards especially require this exposure, as being more natural to them; but they sometimes do not bear unhooding so well, particularly if they are at all inclined to be rammish or wild. With such a hawk it is better either to put her out hooded, or otherwise to let her weathering be in the evening, when even the wildest inclines to quietude. In some cases feeding moderately will prevent their baiting and striving equally as well as the hooding of them. Latham however says, "he would wish all hawks to be weathered in their hoods." It is recommended to place passage-hawks and haggards on small mounds turfed over; eyasses may be confined on their blocks. Some falconers, however, prefer pegging them down on the bare grass, if the ground be soft.

Subsect. 2. *The Mewing, or Moulting, of Hawks.*

2309. *The deciduous falling of the feathers of birds*, as an annual change common to all of them as far as we know, has been already noted. The reproduction of a new set of feathers requires more than ordinary exercise of the powers of the constitution, and hawks therefore when mewing, as horses when moulting, are less lively, and suffer much more from atmospheric changes than at other times.

2310. *Preparations for mewing of hawks* were made by the old falconers after the winter flights had terminated; and the strict observers of times and seasons commenced the process at Lady-day. It is not bad practice to take the first step by *coping* (paring) the beak and talons of the hawk, which will avert any mischief if she *baits off*, or rebels. It would not be amiss, either to put on new jesses and bewits, if the old ones are at all at fault; which will prevent her suffering any disturbance in new dressing her, when her mewing is completed. It will also be prudent to examine, whether she is troubled with vermin of any kind; and if such be the case, treat for the same as hereafter directed.

2311. *The mewing apartment must be screened from cold and damp*, but neither must it be over-heated, nor deprived of a free circulation of air. The mewing-hawk is usually unhooded; but we would observe that much must depend on the disposition of the individual. Blome recommends the use of a *cop-hood*, by which we presume he means the rufter. A close hood in all possible cases should be avoided, on account of the feathers; and where hawks are well reclaimed, the hood of every kind should be altogether dispensed with. Bathing should be allowed while mewing proceeds, as it softens the skin, and facilitates the parting of the quills. In very cold weather take the chill from the water, but do no more. Mewing hawks should be fed twice a-day with fresh meat, its blood and juices being retained within it. The keepers of hawks should frequently visit them to make them familiar: this is most imperative; and, to further this end, they should be practised in coming to the fist as frequently, which will keep up due obedience, and, at the same time that it will exercise them, will aid the moult, and assist digestion. Keep mewing hawks clean, and by all means avoid the filthy custom of suffering their dung to accumulate around them, as is practised in aviaries, under an impression that the warmth engendered by the dung will hasten the fall of the old, and the growth of the new, feathers. Birds may be kept sufficiently warm by other means than that of forcing them to breathe an atmosphere impregnated with acrid salts. In a state of nature they are not seen thus to bury themselves in filth, and if it were advantageous so to do, nature would have given them such an inclination.

2312. *The old falconers* did not usually fly their hawks until six weeks had elapsed from the completion of their moult. Indeed, even then, although they may be full plumed, it is doubtful whether the quill feathers of their beams and train are sufficiently consolidated to fly with safety and effectively at the larger quarry, as herons, kites, wild ducks, &c. We shall conclude with an important hint on the subject of mewing, given by Sir John Sebright:— "As it is difficult to procure Icelanders and gerfalcons, these valuable birds are well worth mewing; but as slight falcons and goshawks are easily obtained, much trouble and expense will be saved by getting young birds every year; and as these do not cast their flight and tail feathers the first year, they will be in order to fly in the autumn, when the older birds will be in moult." (*Observations on Hawking*, p. 63.) Our reply to this is, that with the zealot in the sport, all these manipulations lighten the troubles of the falconer, instead of increasing them. How much more every one enjoys the work of his own hands, than that he obtains from others! It was implanted in our natures so to do, to prevent the evils resulting from idleness; but unless the reader be indeed a zealot, let him follow the baronet's plan.

Subsect. 3. *Imping the Feathers of Hawks.*

2313. *Imping is a somewhat curious process*, by which any feathers that may be accidentally broken in either the wings or tail of a hawk may be completely repaired. From what has been stated with regard to the powers of the wings and tail, both in the *sailing* and *rowing* tribes, it will be apparent that any damage done to either of these important parts, obliges the hawk to enter the lists with his antagonist with odds against him. To repair a broken feather is therefore essentially necessary; and, for the purpose, the falconer should be provided with pinions right and left, and with tail feathers also of each variety of hawk, all carefully marked in the order of their growth, by which any broken feather may be made good from a similar feather stored in the keeping of the hawk master.

2314. *The repairing process is as follows :*—The web of the broken feather is to be dexterously parted by means of a penknife at its thickest part, when the knife is to cut the shaft of the quill obliquely forward, carefully avoiding to do any injury to the web on the opposite side or edge of the same feather. Such is the practice of all professed falconers, and such are the directions of Sir John Sebright, our modern master in this art. The operator "next cuts the substitute feather, as exactly as possible, at the corresponding joint, and with the same degree of slope." This portion of the process must be conducted with great nicety, as, upon the critical adjustment of the two portions of quill to each other, the perfection of the operation must mainly depend. To retain the applied portions to each other, a needle, sharpened triangularly at both ends, being first wetted with vinegar, or with salt and water, is to be passed into the centre of the pith, first of the native feather, and next into that of the additamentary one, dividing the needle equally between the two feathers, and doing this so exactly in the natural direction of the quill, that when the original feather and its additional piece are brought together, it shall be difficult to detect the artificial union. Keep the hawk very quiet; and the rust which arises on the needle by the means of the brine, will keep the whole in place.

2315. *Blome's directions for imping are substantially the same*, but that he recommends, instead of a needle, that the quill part of a fine feather be used, and that the yolk of an egg, or some other "semond," be the bond of union. We have used the diamond cement in uniting similar matters with such success, that we do not hesitate to recommend its use for the purpose. To mend a train feather Blome proposes that a small peg of juniper wood be dipped into melted glue (we say, use the diamond cement), and that half of it being thrust within the stump of the broken quill, the substituted feather may be forced on the other half of the stick, the glue or cement retaining the portions firmly together.

2316. *A hawking cadge, cage*, or *stage*, is used for the removal of hawks from place to place. One depicted by Reedinger in *fig. 355.* is seen as an oblong frame; occasionally we have seen it circular. It should be made of light wood, and of such a shape and substance that the hawks can perch upon the bars with ease and safety to themselves. The wood of which it is formed should therefore be a little wadded, that the pressure in *holding on* may not hurt the feet: slight rods of hazel should be fixed across each end, to prevent the hawks from falling on the inside when they bait. The falconer, as the figure shows, places himself in the middle of the stage, and supports the weight by means of two straps across his shoulders: the hawks are hooded when thus moved, and are furthermore fastened to the cage each by its leash. Where the distance is considerable, and the mode of conveyance is railway or carriage, Messrs. Salvin and Brodrick recommend a "spring box cadge," which is simply an oblong box without a lid, sufficiently large for the purpose, having broad padded edges for the hawks to sit upon, and supporting springs attached to the bottom for the purpose of lessening the jar; holes being made in the sides immediately below the padded rim for passing the leashes through. As these articles are inexpensive, a professed hawker would do well to be provided with both.

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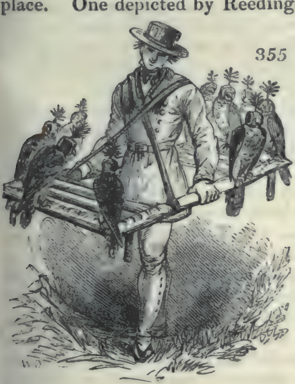

HAWKING-CAGE.

Sect. IX. *Operations required in the Training of Falcons and Hawks.*

2317. *When the wildness and ferocity of these birds are considered*, we are surprised at the power of that discipline which can reclaim them to so much obedience as is necessary for the purposes of falconry. These impatient subjects must be taught to bear all the restraints of close confinement, together with the incumbrances of jesses, bells, leash, and hood, and all without active resistance. A well trained hawk must further yield a ready obedience to every command, and even when soaring in the air, must instantly return either to the hand or lure when *whistled to* or *lured.* Having made prey of its game, it must likewise be equally ready to give up the quarry to the hand of its master, without showing any disposition to *bear it away.* To effect all this, it is evident that great patience and perseverance are necessary on the part of the trainer; and his task is the more difficult, inasmuch as only a momentary loss of temper may retard the process of reclaiming for weeks, and in some subjects it may frustrate it altogether.

2318. *To teach subjection to any wild animal*, it is essentially necessary, first, to make such animal aware that all attempts at escape are vain; secondly, that the gratification of the wants of nature are for the future to be looked for within its prison walls, and also from the hands of its jailor.

2319. *Of the numerous authorities on this subject*, Sir John Sebright is amongst the most recent. His *Observations on Hawking* are so just that they leave us in regret that they are so concise: we gratefully own our obligations to them. M. Huber's observations on hawking also, ably translated and methodised by Mr. Griffith in his *Animal Kingdom of Cuvier*, we would recommend to the notice of the reader. The Abbe La Pluche likewise has written a summary of the practice of hawking, which he calls one of the "noblest and most profitable of pleasures." We can fully agree in his opinion of the high rank of this sport; but we are constrained to demur to his *dictum* with regard to its profitable character; that is, if he made use of the term profitable after its usual acceptation. On the contrary, this recreation is well known to be a most expensive one, although, unquestionably, a most fascinating and noble one. Turberville and Latham are old authors of repute; the latter, although he is redundant, is yet well worthy of the falconer's attention. Blome also treats largely and quaintly withal on hawking; and though a compiler only, is well deserving of notice. Many other old treatises on hawking, of various degrees of merit, are known to exist. Among these that of Markham stands conspicuous; but, without doubt, that of Sir John Sebright is the most valuable, and should be referred to by every one attached to hawking.

2320. *Hawk training* may be divided into that for eyasses, branchers, and haggards, or mature hawks. It will be well to bear in mind, that however other parts of the training may equally apply to short winged as to the long winged hawks, still it must never be lost sight of, that all long winged hawks are *brought to the lure*. Short winged hawks, on the contrary, are *brought to the fist:* but while we mention this as an arbitrary distinction, its precise meaning must not be mistaken; for it is not meant that the long winged hawks are not taken at all on the hand, either in training or when carried abroad. It is only intended to observe,that they are to return to the *lure* when preying; whereas the hawks of low flight return at once to the *fist*.

Subsect. 1. *Training of Eyasses, particularly those of the Slight Falcon.*

2321. *When eyasses are taken from the nest in an unfledged state*, it is requisite to keep them warm; but both at this time, and when further advanced in growth, still more particularly they should be handled as little as possible. In taking of eyasses, as yet but partially plumed or feathered, great care is required that none of their new formed feathers be injured, particularly those of the wings and train; and be it observed, that the more the birds approach to a fledged state, the more care is required that neither those feathers nor their talons receive injury. This caution extends to the whole period of their training also. Sir John Sebright recommends, that as soon as eyasses of either falcons or hawks are taken, they be at once put within a large hamper, which must be firmly fixed on its side about breast high, on the branches of a tree, in a retired situation. The lid of the hamper, when properly supported, will serve as a platform for the birds to come out upon to be fed. M. Huber recommends that, "for a bird of *high flight*, i. e. one of the noble tribes," a cask staved at one end, and resting on the side, be lined with straw, and placed on a low wall, or a hillock of earth, within the reach of the master, with the opening turned towards the east. For a bird of low flight, they use a kind of hut of twisted straw, set upon a tree of no great height, within reach of the hand. Certain planks are placed near the openings of these, on which the birds perform their first exercises, and receive their food. The food consists of beef or mutton, from which the fat and membranous parts have been withdrawn, and the edible part is cut into slender and oblong pieces. This aliment is given daily at seven in the morning and five in the evening, and the bird is excited to partake of it by one uniform cry, which he soon learns to recognise. On those planks, which serve as a table, the feeders always place the food for the high flying birds; but for the others the food is more commonly set on the ground, as soon as they are strong enough to descend and re-ascend. Both kinds are seen to increase their strength gradually; thus they first reach the places which are near them by jumps, and then by a heavy sort of flying, which the French call *monter à l'essor*. (*Animal Kingdom*, vol. vi. p. 139.) Thus circumstanced and protected, the young birds should be regularly and plentifully fed once or twice a day, in the manner already directed.

2322. *The cry or whistle hinted at as preparatory to feeding*, must not be omitted, as the young bird soon recognises it, and it serves to form such a connection between his own wants and his trainer's presence, as insures both his confidence and obedience. When eyasses are somewhat advanced in their growth, in addition to a liberal supply of the usual food, some variety is also proper. For this purpose pigeons, rooks, or other birds, may be given occasionally, which will not only whet the appetite, but also give a relish for food of that description; this change is indeed essential to their health.

2323. *The appearance of what are known as hunger traces*, will follow any considerable alteration of the accustomed quantity or quality of their food; and these marks should be watched for with much care, and must be immediately combated; bearing in mind, however, that prevention is better than cure. Sir John Sebright has well described the *hunger trace* as being a distinct line crossing every feather of the body, but most apparent on those of the wings and tail; where also it is evident that the defect is of most importance. "It may be seen," he further observes, "as a line of imperfection across the web of every feather neatly marked as if a razor had been lightly passed across the wing." The consequence of this failure in the vital supplies is such, in some cases, that the feathers break away at the hunger trace. The trainers say, that omitting to feed one day will be followed by some appearance of the hunger trace, consequently we want no further proof that a plentiful supply of the best food is necessary to force the growth of the feathers, on the full development of which the powers of the bird so mainly depend. To increase the nutritious properties of their food, raw eggs are also sometimes added to it; and if raw eggs do really prove beneficial in these cases, it can only be because the eaters are themselves carnivorous.

2324. *Eyasses living at hack* increase in size and strength beyond those kept in more close confinement. Some eyasses are confined either in a room with open windows, or in open sheds, or on platforms, being restrained from moving further than their leash allows. Those, on the contrary, which are allowed full liberty, are said to *live at hack*; and when the benefits of free air and exercise are considered, it must be evident that the tackler, or hack-hawk, is by far the most likely to prove strong and good. At hack the eyasses are seen to increase in strength and vigour every day; their first flights carry them into the branches of the surrounding trees, they next perch themselves on the tops of the neighbouring buildings, and gradually they extend their flights to greater distances. The tacklers should have bells, and if they are rather weighty it will keep them more within bounds: and it is now that care should be taken to make any neighbours who may live near aware, that if such birds fall in their way, they cannot mistake them for others, both from the circumstance of their wearing bells, and from the confidence of their manner. Particular care also is now required that they be fed at stated periods, and always at the same place, which will insure their ready attendance on the feeder. When, however, they have learned to hawk for themselves, they will occasionally fail to return at feeding time. Should their absences extend to two or three days continuously, no time should be lost in *taking them up*, or they will infallibly absent themselves altogether. Sir John Sebright directs, that, to recover them, small pieces of meat should be fastened to the ground, having springes dexterously set around the meat so as to entangle their legs. A watcher, however, should be at hand to prevent them from injuring themselves by baiting. A bow-net may also be set so as to inclose them; for, be it observed, taken up they must be, if it be wished to secure them from total alienation.

2325. *Training for hawking purposes now succeeds;* it will, however, be well to remark, that much of what follows will apply generally to the education, not only of these but also of mature or passage-hawks, although it is more particularly intended for eyasses and hack-hawks. Any important variation required in the treatment of either from that of the other, will be noted as we proceed. We must however, in this place, take occasion to offer a few preliminary observations on *condition*, as it regards hawks in general.

Subsect. 2. *Conditioning of Hawks, a necessary prelude to Training.*

2326. *Conditioning*, in its sporting signification, is as necessary to the hawk as to the racer and hunter. In a state of nature the pursuer and the pursued are usually tolerably well matched; and, were it otherwise, many races of animals must become extinct. Conscious of this approximation to equality between the agent he employs in hunting and the game he hunts, the provident sportsman endeavours to lessen the chances of escape of the one, by artificially increasing the powers of the other, which is done by a process called *conditioning*, by which the animals so treated attain to greater speed and durability than is common to them in a state of nature. Having already endeavoured to illustrate the effects on horses of what is technically called *putting them into condition*, we shall now describe the practical part of putting hawks into condition. The strength of these birds, like that of other animals, is increased by liberal feeding, and by suitable exercisings, which in them likewise hardens the muscles, and adds greatly to the respiratory powers. All superfluous fluids, which increase the weight of the body and diminish its strength, are to be abstracted by *castings* as a natural, and *purgatives* as a more artificial process.

2327. *Castings are the indigestible matters thrown up from the stomachs of carnivorous birds;* and as it is well known that all the hawk tribes swallow the entire of the lesser birds and beasts on which they prey, it follows that their membranous stomachs being equal to the solution of the soft parts only, what remains, as the hair, feathers, bones, fur, &c. are returned by the mouth in a compact mass. This vomition being a natural act, and one that occurs after every meal made on whole animal carcasses, it is evident that the act itself must have a direct tendency to cleanse out the stomach, and remove matters that might otherwise remain some time undigested to the injury of the health. When hawks are fed, as is usual, with beef or mutton, neither skin nor bone is given, the whole is therefore retained, and no casting takes place. Under this view there is every reason to believe that, nutritious as such food is, the stomach feels the want of this natural stimulus; and that the small indigestible remains which are too minute to be disgorged, as portions of tendon, mucous, and oleaginous matter, become irritants, the evils of which are to be obviated as follows: —

2328. *Artificial castings are given to hawks* for the purpose of cleansing the stomach, and that by so cleansing they may restore that full tone to it, which a continued system of full feeding on solid flesh tends to injure. It is under this idea, therefore, that with their raw, or their soaked beef or mutton, we purposely intervene the entire carcasses of small birds or beasts, as mice for instance, which are easily procured, and make an excellent casting when fresh; for stale matters of every description, be it observed, offend the stomachs of hawks. The feet of fowls, or the feet of rabbits, hares, &c. with the fur on, answer the purpose of producing casting well; and when these are not at hand, pellets of tow, flannel, fur, or feathers, rolled up within the hawk's meat may be given. In answer to an inquiry, how this is to be done, we reply, that, by habitually rewarding them with some fresh morsels of flesh immediately after they have swallowed the casting, they will soon readily bend to it of their own accord, in hopes of what is to follow, particularly if sharp set. As hawks will not fly until they have disgorged, it is recommended to give them castings at night only, by which means they having returned them by the morning, become empty and are then ready for their game. Artificial castings, however, require much discretion in the giving, and very close observation of the state of the hawk; otherwise, when the castings are too strong and too often repeated, like an excess of physic to the hunter and racer, more mischief than good may be done. Latham, the great advocate for castings, says, that he does not fail to give plumage every night to a hawk in full condition (" well in-seamed") when daily flying at game; but when she takes no flights, he gives her no evening meal.

2329. *Small stones were much used by the old falconers* as preparatory to more active castings. Thus Blome observes, " If you should give her *castings* before her *stomach* is well prepared by the stones, it would signifie nothing; for they are, as it were, the key of the work, that the *grease* and *glut* may be stirred and dissolved, so as to be fitted to pass away in her *mewts* downwards, or in her *castings* upwards. The best time of giving stones is doubtless at night, until she be thoroughly clean, and then in the morning, but not until she hath put away her *supper* from above; half a dozen at a time are sufficient, and to do well they should be given above the *hand;* but for that every one hath not a ready skill, you may cast her, and give them so without danger, if it be carefully done. This course must be continued until you give her *plumage* in her *luring* and *training;* and then must you add the bending of the *wing*, being the short *feathers* of the *pinion*, with as much washed flannel as will make a reasonable *casting;* and remember in using *stones* and *casting* to observe this old rhime —

> 'Washt meat and stones will cause a hawk to fly,
> Long fasting and great casting will cause a hawk to die.'

Stones used as castings should be gathered up when cast and washed. They may be also suffered to remain within reach of the hawk, who will often take them voluntarily when they are wanted. Celandine and numerous other herbs were given by the older falconers when an active emetic was wanted.

2330. *Purgatives are much less frequently administered to hawks than castings.* A few grains of rhubarb, jalap, or aloes, as three, four, or five, may be given, encircled by a slice o beef. Should it be refused when thus offered, it must be forced down, which, however must be done with great nicety, or the hawk may be injured, and at least some of the wing or train feathers may suffer. Markham directs a piece of aloes as large as a bean (a horse bean we presume) as a proper purgative for a hawk; but we should recommend a smaller dose to be first tried. We would again remark, strong purgatives, as aloes, gamboge, jalap &c. are only admissible when the bowels are much constipated. When, on the contrary hawks are relaxed in their bowels, and their evacuations present an appearance of mucus, o yellow glair, and particularly if they be mixed with undigested food, give rhubarb. If the mewtings are black, then in preference give a grain of calomel, three grains of gum myrrh, and two grains of aloes. From what we have stated, the matter of which is equally derived from the best authorities, as from our own knowledge of the diseases of birds, it i imperative that a careful and frequent inspection of the castings and mewtings be made, to determine on the healthy or diseased state of every hawk that is kept. When in full health, the castings will exhibit nothing more than the refuse matters we have noticed, dry and pressed compactly together. If on the contrary, as before observed, they be seen moistened with glair or mucus, or streaked with morsels of undigested food, the assimilating powers of th hawk are impaired. When, also, the mewtings (stools) are seen to be of an undue consistence, as either thin and watery, or very hard and dry, there is equal reason to suspect tha something is wrong within. If either castings or mewtings, or both, are black, the liver i probably affected; but if undigested food only is seen, the stomach is at fault. Hepati remedies are proper for the first, and stomachic aperients for the last.

2331. *Vermin sometimes torment hawks, and prevent their thriving.* In these cases fumigations of tobacco or sulphur must be resorted to, or sulphur finely levigated, and mixed with a fifth part of stavesacre, equally finely powdered, may be forced into the feathers o the hawk, in moderate quantities, by means of a powder puff, observing to have the haw hooded. General cleanliness, as regards every part of the *mewing* or lodging of falcon and hawks, will greatly tend to prevent the encroachment of vermin; and, above all, wi keep the atmosphere around them pure. Expose not your young hawks to wind or rain; but, at the same time, let them have plenty of air: be careful, we again repeat, to remove filth daily, and almost hourly, if you wish to promote vigour and high condition; likewise let the perches and resting blocks be attended to, that the feet may not clog and canker; and for the tender-footed hawk, cover them with matting.

2332. *Hawks are also apt to be affected with wheezings*, commonly denoting congestions in the lungs, which the old falconers call asthma and pantas. For this complaint we would recommend a mitigated diet, with a daily dose of a grain ot antimonial powder, to be given in a tea-spoonful of honey of roses, which remedy we have ourselves tried on birds with great success. The old falconers employed coltsfoot in these cases; and, as they affirm, with much benefit. Worms in the intestines, also, sometimes rob hawks of their condition. As a vermifuge we would recommend that finely levigated glass be given with salt and sulphur daily, in proportions as follows,—of the glass five grains, of salt two, and of sulphur three. It was only with a view to simplify somewhat the medical treatment of the hawk, from the crude mass of numberless diseases, and remedies as crude as they were numberless, that we have entered on the topic; which, having brought to a conclusion, we shall resume our subject of hawk training. We train horses, dogs, and men, to increase their strength and hardihood; we also do the same with hawks, and with the same results.

2333. *The training of young hawks commences with putting on the hood, bells, jesses, &c.* If the pupil prove very wild and *rammish*, the rufter hood may be first made use of; for although it is principally employed in the early training of the mature and passage-hawks, yet occasions may occur, in which its use will be found convenient for some tender and timid eyasses also. Be it, however, observed, that whichever hood is put on, the utmost care is required in so doing it, as to avoid injuring any of the wing feathers; and which is best effected by *brailing the wing*, as already directed, p. 698. With eyasses or hack-hawks these restraints do not often excite much resistance; nevertheless, with all hawks, young and old, temper and patience are requisite. When any considerable refractoriness is shown, wash the food, and let water be dripped over the bird, which, with deprivation of sleep for a night or two, will subdue the stoutest spirit.

2334. *Having advanced thus far*, and our eyass being furnished with hoods, bells, jesses, and leash, she is to be fastened to her block or standing (*fig.* 356.), which is either an elevated perch, as seen in our cut, or otherwise is a solid wooden truncated cone, a foot high, and about nine inches broad on its upper surface, the under surface being sufficiently enlarged to prevent its overturning. To a staple in the block, the leash being made fast, so as to allow a sufficient length for the bird to move up and down, the arrangement is so far complete. The block is now to be placed in a shed, or in the open air during the day, but protected from the wind. A few hours will reconcile the hawk to this confinement; and the next lesson will be to *fist her*, the hand of the keeper being, of course, glove-guarded. It usually, however, takes some time to habituate a hawk to the fist; and therefore, to prevent her from *baiting off* (struggling offensively), she should be hooded during the initiatory lesson. Should she actually bait off her block, gently replace her; and when well settled, carry her about several hours in succession, during which she may be frequently stroked down the back with a feather, and at the same time be encouragingly spoken to. M. Huber directs, that when a falcon or hawk agitates herself very much, proving extremely refractory, and actually attempts to use her bill, in such case, besides lowering her food, let cold water be thrown over her head, or a stream may be allowed to drop from a wisp of hay or straw held over her, by which means she may be eventually rendered completely tame. As the hawk becomes quiet and accustomed to her restraints, the brail may be removed from the wing, but the carrying on the fist must not be relaxed in; on the contrary, it should be persisted in almost through the whole of the day. A quiescent state being at length established, the hood may be occasionally taken off; when, as Sir John Sebright has it, she "may be allowed for a short time to pull upon a stump or pinion, from which she can get but little meat," observing, however, by way of encouragement, to give her a few mouthfuls directly the hood is again put on: indeed, it is of the first consequence in this training, that every action which the falconer requires from a hawk, should only be a prelude to a reward. Thus, when on her block, she should be enticed to show a readiness to come to the fist the moment she is invited to do so; which must be first taught her by showing her food on the fist, and so continued, until it becomes a ready act of obedience in the hawk, with or without a bribe. It is, however, to be remembered, that these initiatory lessons must always be practised with a creance, or long string, which must be tied to the leash; and, if possible, these initiatory processes should be conducted under a gloomy light, and without any objects around likely to disturb the hawks under training.

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DRESSED HAWK.

2335. *To train the hawk to the lure* is also a very important part of the process, and with the eyass, in particular, it is not usually a very difficult one. Neither is it often very much more so with the brancher; but with the entrapped mature, or passage-hawk, it sometimes proves a work of much time and labour. The first step is to feed the hawk on the lure, being, as Sir John Sebright directs, "first made to come to it when held very near, then when held a little farther off, and next it is to be thrown on the ground to a small distance;

and thus she is to be brought by degrees to fly to it, and to seize it eagerly, however far it may be thrown" (*fig.* 357.). An assistant is now to swing the lure some distance from the falconer, who casts off the hawk; the lure, be it understood, is to be thrown into the air, when the hawk is flying towards it, but so that she cannot attain it until it falls to the ground, which caution is to be observed, lest she should be hurt by striking it in her flight. When this lesson has been repeated until the hawk has become eager to take the lure, the assistant is to swing it as before, but is to take it into his hand when the hawk is coming; he is then to swing it again as soon as the hawk has passed; and finally to throw it upon the ground when the hawk is returning towards him. M. Huber's directions imply, that when she has had so much training that she will pounce upon the *lure* from the whole length of her tether, they accustom her to know and examine the game which she is destined to hunt. This is done by attaching the game to the lure, and allowing it to run or fly near the bird; being first attached by a packthread, but eventually doing it at liberty, until it is thought safe to trust to her free of all restraint. (See *An. King.* vol. vi. p. 202.) When properly trained, the hawk will learn to fly round the falconer, and bend its flight inwards, when in sight of the *lure;* nor should she be less obedient to the well known call, halloo, or whistle, but should follow and *wait on* the trainer in all his steps.

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LURING THE HAWK.

2336. *In the luring lessons*, the hawk having descended to the lure, and being busily employed, the trainer should walk leisurely around her, all the time encouraging with his voice, and occasionally giving her a favourite morsel from the hand. He should also occasionally, at such times, reward her by giving a full meal of some favourite food when she is taken up. It may be further observed, that the lure is not only used in training hawks, but it can likewise be employed in the exercising of them when out of work, and when they cannot be flown at game. Sir John Sebright, however, cautions the falconer "against keeping his hawks too long on the wing, that they may not thereby acquire a habit of *flying low;* it being a perfection in the slight falcon to soar as high as possible." During all these lessons it is essential that the hawk be accustomed to every variety of objects, particularly of horses, dogs, and men; indeed, noise and bustle of every kind should not alarm her. At first, however, no stranger should approach from behind, but it must be done leisurely in front of her; for without she become thus fearless of every object, her education cannot be completed, and consequently her hawking practices will be valueless.

2337. *Entering of the falcon to her game,* may be commenced as soon as she comes readily to the lure. When thus advanced, we will suppose her soaring aloft with her head inclined inwards, and ready to come to the lure; at which time the practice is to fly a partridge, confined however by a creance. This the falcon brings to the ground, where she is to be allowed to eat it, the trainer walking round her, and encouraging her during the time. The same process is to be repeated a few times, when she may be flown at game unrestrained; but to prevent her becoming cowed by any failure in her early attempts, it is recommended that a live partridge in a bag be kept in reserve, ready to throw up to her should she have failed in her first flight on other game. Sir John Sebright however observes, that "though this is the method of breaking eyasses to the lure practised by falconers generally (and, as we should suppose, such as he has employed himself), yet," he thinks, "it might be better done, and with infinitely less trouble, by using the young hawk, when *flying at* hack, to feed always on the lure." In this we heartily coincide, and from all the consideration we have given to the subject, we feel confident of its success.

Sect. X. *Training of both Haggard and mature Hawks.*

2338. *Training of passage and mature falcons* is somewhat more operose than the training of eyasses. With them it will be proper to commence the process by weakening their powers of making their resistance hurtful to the trainer. To effect this, let the beak and talons be *coped,* i. e. somewhat blunted by a knife or file; in good hands the latter is the most efficient instrument; this done, *brail the wing,* and proceed to put on jesses, bells, and leash. As, however, there is a probability, that the striving against the rufter hood even may be considerable, it will be prudent not to attempt putting it on until the wildness is in a great measure gone, by the subduing means already pointed out, as night watchings, with water drippings, and very slender diet by day. The meat also that is given to such should be washed in water, to render its exhilarating powers weaker, by depriving it of its blood and nutritive juices; and they should likewise be fed in the evening only, that being sharp set in the day, they may take their initiatory lessons more readily; neither must this treatment be relaxed, until all rammishness has ceased, and until the subjects of it will suffer their feathers to be stroked down with a quill, and other marks of familiarity allowed, without resistance or *baiting off.* They should likewise seldom be left alone, indeed, it might be said, night or day; for if the trainer has them not altogether by his side, he should at least visit them, for the first two or three weeks, several times in the night. Hard as this may seem, yet, to reclaim either the Icelander, or haggard slight falcon, it is actually necessary, and we know that it has been done. One trainer was pointed out to us, whose wife objecting to this hourly disturbance, removed the birds into his bedroom, and from his bed, by the glimmer of his rushlight, he aroused his slumberers, and thus inured his presence to them by night as well as by day, until at last these wild subjects began to show pleasure in the company of their trainer, and to *rejoice*, according to the old hawking phraseology, in his notice, and indeed to appear unhappy in his absence.

2339. *Obedience having been unconditionally and fully exacted, indulgence should follow.* The rufter hood should now be occasionally removed, and the subject under training be allowed to look about her a little, at first in an obscure light only, gradually however increasing it, until the noontide glare is borne without disturbance. The putting on the full hood is next to be attempted, and in general it is not in this state a very difficult matter to effect. Occasionally, however, the operation does occasion so much resistance, that there is great danger of injuring the hawk, either in the body or plumes; in which case, What is to be done?

2340. *To make a refractory hawk to the hood*, Blome's directions are, "You must be provided with a hood of some light colour, as green, red, or yellow, which hang on your little finger of the same hand whereon you carry your hawk, and let it hang so that it may be always in her sight, especially at such times as you feed her. This do for about a week, or until you find her acquainted with it so well as to search through the hood for the meat. If you interpose it when she doth this boldly, you may essay to bear a little hard with the hood against her head, by which means she will in about a month come to *hood* and *unhood* herself, as often as you please. And whereas before you used to restrain her from eating, let her now eat moderately when she is *hooded*, and never but then; nor should you take off her hood until feeding time." Being now effectually restrained, your falcon must be accustomed to take to the hand when presented; she must also be familiarised to noise and bustle, as well as to the sight of men and animals in motion; and the hood now rendered familiar to her, should be frequently put off and on; nor must these ceremonials be relaxed until she is thoroughly *reclaimed.* It is in the vigorous prosecution of these parts of discipline, over and above those practised towards eyasses, that the difference between their trainings principally consists.

2341. *To make the passage-hawks to the lure*, it is enough if they will fly to it when swung round at a distance, as it would not only be difficult, but it would be also unnecessary for the purposes to which they are applied, to teach them to *wait on.* What we said on the luring of eyasses will mainly apply here also: but, as before observed, more close training is certainly requisite for the haggard; and the more northward the habitat of the falcon is, the more strict must every part of the discipline be, and for the gerfalcon most of all. We have said little about practising the passage-hawk to the hand, but, as already observed, though technically they are not hawks of the *fist*, but hawks of the *lure*, they are to be familiarised to the hand almost as much as the others, and therefore must be taught to leap from the stand, or the ground, on the hand as soon as presented, where they must receive the same attentions and the same rewards as hawks of the fist.

2342. *Training the passage-hawks and northern falcons to flying at their game*, follows the exercisings we have described. Initiatory lessons at flying at living quarry now follow. A pigeon is usually the first game they fly at, one or more of these birds having already been given to be raked from the hand. Proceed therefore to throw one up to her in a creance, and if she shows herself ready at this, shorten the flight of another, either by taking out two quill feathers of each wing, or by clipping off a portion of the whole, and having so done throw it off before her, she being now wholly at large. The game that the falcon in training is intended to fly at should be made particularly familiar to her, which is best done by using a representation of it before her during her initiatory practisings. Thus, by the French trainers, a black hen is attached to a stake to teach the hunting of crows, a red hen is used to imitate the kite, and a grey turkey-hen represents the heron At length a crow, a kite, or a heron are thus treated by them; the bills and talons of the former are blunted, and the beak of the latter being cased or much shortened by the saw (a much less cruel practice is that of inserting the point of the bill firmly within the branch of a piece of elder, as suggested by Sir John Sebright): one or the other, as the case may be, is attached to the stake, and of course soon sacrificed; after which the hawk is practised at either of these at liberty, but at minor elevations at first. Many of these hawks, however, require some trouble before they can bring even their rapacious courage up to the sticking point to attack a heron. Sir John Sebright tells us, nevertheless, that "they may generally be brought to it by flying them at a barn-door cock of a light colour; and still more effectually by tying meat upon a heron's back, and practising them daily in feeding on it there, observing to guard the heron's beak by the humane method just noticed. In the early flying practices, should the falcon fly unsuccessfully at its game, it is recommended not to take the falcon down by the common lure, but by a live pigeon held in a creance, as a disappointment of this kind, without a kill at the end of it, might be more fatal to the hunting propensities of the falcon than twenty blank days to the foxhound.

2343. *The treatment of working hawks requires some notice also.* The old falconers, as we have already observed, thought little of flying their hawks every day; the moderns think three times a week enough, and it certainly is so. Even with this work, they must have liberal feeding to keep them up to the mark. On the day before flying, hawks should have a moderate meal only; when full fed they are apt to be heavy, but when sharp set, as we have already observed, they set about their work in earnest. It is, however, well remarked by the master in the art we have so often quoted, that "the condition and habits of each bird must be considered, and that the feeding be proportioned accordingly; it is only the very strong and high conditioned hawk that should be allowed to fly two successive days." When this is done, a more plentiful allowance of food should be apportioned to each day's meal than at other times. We must not be understood as hinting that the hawk, which flies twice or thrice a week only, is not to be well fed; on the contrary, she should have a plentiful meal on the days she has flown, and it should be given immediately she has done it. When she is *gorged*, it is proper that she remain at rest two whole days, as it would be unnatural and hurtful to fly her in less time. In this respite we only imitate the natural habits of these birds, which incline them to solitude and almost total inactivity after they have preyed abundantly.

2344. *The gorge* (so called) is a very full meal, given once in four or five days, it being supposed that in the intervening days a moderate but a sufficient quantity is also given. It is as essentially necessary to keep up the working hawk in full bodily condition, as it is that it should not become too full and gross. To judge of the condition of a hawk in full flight, weigh her and feel the sides of her breast: if she be light, and her breast-bone prominent, feed her more liberally. If, on the contrary, on turning up her train feathers, her vent is seen to be unusually red and prominent, her eyes bloodshot, and her breast laden with flesh, lower her diet, and let her have full castings; and if these are not sufficient, give once a week a gentle purge of two, three, or four grains of rhubarb or aloes, according to her kind, size, and strength. The actual quantity of meat to be given, cannot with propriety be stated, as the wants of the birds will differ from each other, and that from day to day also, as they work or rest. About a third of a pound of beef a day is a fair quantity for a slight falcon, so in proportion for other hawks in full work. It is, however, to be observed, that their food also should be varied, for reasons already hinted at.

Subsect. 1. *Training of the Merlin and Hobby.*

2345. *The training of the merlin*, from a natural docility in her nature, is not attended with much difficulty. All the usual training processes are employed, which in a very few days succeed so completely, that the merlin will fly to the hand held out even twenty or thirty yards distant. When thus advanced, she must be *made to the lure* by the following method: a lark, secured by a string, is thrown off at fifteen or twenty yards' distance, which being seized by the merlin, she attempts to fly off with it, which it is the object of the trainer to prevent. He therefore jerks the string which is fastened to the lark, and if fortunately the body is thereby pulled away, the head only being left with the merlin, the lesson is accomplished. The body of the lark is now partially buried at the feet of the trainer, and the hawk returning thence to possess herself of it, which not being able to do, but, on the contrary, finding herself rewarded with meat instead of the bird, soon learns that attempts to *carry her game* are fruitless, but that to return with it to her master is the certain means of obtaining a reward. The old falconers were used to fly merlins at partridges with effect, but a cast was usually employed, and a cast is also used for snipe hawking, which affords very excellent sport, and often a very diversified chase.

2346. *The training of the hobby* is essentially the same with that of the merlin, but it usually requires more time to accomplish. As a sporting hawk it is used for the same game as the merlin, but with rather less effect, not being so good at the mount as the merlin, although somewhat larger. It has been used to fly at partridges, but it is better matched with quails, landrails, snipes, larks, blackbirds, thrushes, &c. Sir John Sebright informs his readers, that both the merlin and the hobby may be brought to *wait on;* but although the hobby is the more tractable of the two, yet, if we are rightly informed, it is more difficult to bring the hobby to this than the merlin. Colonel Montague asserts, that the hobby has been principally employed in a sport, called *daring*, by which partridges, quails, snipes, and other birds which will lie, are taken. The hobby being cast off so frightens the birds, that they will suffer a net to be drawn over them in preference to rising. The colonel also considers the hobby to be a passage-hawk, and in some instances it may be so; but Sir John Sebright, who does not usually take any thing on trust, asserts that both the hobby and merlin breed in England; and we are equally certain of it also, having many times seen their nests and taken the young.

Sect. XI. *The Training of short winged Hawks.*

2347. *Essential variations* are requisite in the management of the sailers from that employed in the education of the rowers, that is, between the hawks of low and high flight; the necessity of which will appear, if reference be made to what we have already stated with regard to the sailers and rowers, or the ignoble and noble raptorial tribes.

Subsect. 1. *Training of the Goshawk.*

2348. *The goshawk stands at the head of the short winged hawks,* and, like the long winged, may be taken from the nest, or be procured by netting or by trapping when full grown, these latter being generally preferred. Our present subject is a hawk of the fist, and is consequently not to be hooded except when travelling, or during its early initiation, to keep her quiet. About the fifth or sixth day the hood may be finally removed, as many of these birds soon become reconciled to confinement, and will readily take food from the first. Goshawks and others of the short winged kind rest on a perch formed from a pole, about an inch and a half in diameter, which Sir John Sebright recommends to be placed horizontally, at four feet from the ground, under a tree in fine weather, and to be removed under shelter when it is foul. A piece of woollen cloth, or matting, should be nailed to its surface, and should hang to the ground, so that the hawk may raise herself up by it when she has left the perch or *baited off.* She is to be fixed to this perch by a short leash of six or eight inches in measure, the swivel of which is to be tied close to the top of the perch. The shortness of the leash, and the presence of the matting by which she can creep up, prevents her injuring herself by passing under it, and by so doing to twist her leash around it. As these hawks are carried unhooded, and are not brought down to the lure but to the fist, it is evident that a singular degree of obedience must be taught them, which fortunately their nature in general cases inclines them to in a greater degree than that of the long winged hawks. The same means, however, are employed to make them gentle by feeding them very frequently by hand, giving them very small quantities at a time, and by constantly carrying them about on the fist, with the precaution of having the jesses wound round the fingers. The absolute necessity of keeping the wild hawk without sleep and always in hand, is constantly insisted on in the old hawking instructions. Bert's approved *Treatise on Hawking,* published in 1619, has the following:—"I have heard of some who watched, and kept their hawks awake seven nights and as many days, and yet would they be wild, rammish, and disorderly." This "gentleman" is altogether a curiosity; he reared hawks himself, and with such success, that he proudly boasts he had sold a simple goshawk and tercel of his training for one 100 merks. From his own account, the greatest part of his time—almost the whole of it, except when he slept—must have been occupied by his birds. "There cannot," he says, "be too much familiarity between a man and his hawk." Markham also advocates familiarising the hawk to her master by his looking her full in the face, using her to all sorts of company and loud noises, all which is true to the letter.

2349. *Nothing familiarises a hawk more than tempting her from the perch to the hand* by offering her some favourite food, as the stump or pinion of a fowl; and we again repeat that, during the probationary stage, she should be left as little alone as possible, except at the necessary hours of rest. By persevering in this treatment, the wildest goshawk may be taught to come readily to the fist when held out to her, and from almost any reasonable distance, as forty or even fifty yards, whether she be on the ground, on the perch, or lodged on a bough. This method of training M. Huber varies, by tying a living pigeon to a stake, which the hawk is allowed to seize by the head at the length of her leash, when the attendant pulls away the body, leaving the pigeon's head with the hawk, who, having devoured it, will follow and come to the hand from almost any distance to eat the remainder. If her intended quarry is to be the partridge, these lessons must be practised with them after the same manner, or whatever game she is principally to *fly at,* that game should be employed as a lure in the initiatory exercises. Sir John Sebright, however, appears to entertain a very mean opinion of goshawks for the purposes of falconry. He allows that they may be employed against pheasants and landrails, but for partridges he considers that they are too slack mettled to fly willingly at any, and that all but very young birds will distance them; he however acknowledges that the very worst will take rabbits. We must nevertheless remark, that many falconers of repute, particularly those of the Continent, prize the goshawk much, and use them extensively.

2350. *The training of the sparrow-hawk* does not differ from that of the goshawk, which it resembles in every respect but in size. It flies very rapidly for a short distance: indeed, no one who has observed her when hawking for small birds, but must have been struck with the velocity of her stretches at these times. She may be entered at partridges with effect; and particularly in the early part of the season she proves very efficient; and indeed, according to Sir John Sebright, she is the best of all the hawks for landrails. The sparrow-hawk may likewise be employed against other of the smaller winged tribes. It is said that a gentleman in Ireland flies them at quails also very successfully. Sir John Sebright once took a wild partridge with a sparrow-hawk of his own breaking, ten days only after the bird had itself been taken wild from a wood. As implicit reliance may be placed on the assertions of this most respectable and talented sportsman, the fact is at once a proof of the occasional tractability of this hawk, and of the excellent management of the baronet. On the subject of training and hawking with the short winged hawks generally, the same gentleman offers the following important remarks: — "That to be effective, they must be kept in high condition; that they cannot fly when any wind is stirring; and also, that, upon the whole, they are altogether more difficult to manage than stronger birds."

2351. *Of the training of buzzards*, we omit any particular description; in the first place, because it does not differ from that employed on other of the short winged hawks; and in the next, because, when trained, these hawks are of little worth. Each variety of buzzard is usually cowardly in its nature, and sluggish in its habits; and its talons also are too weak to be effective against any such quarry as, considering the size of the flyer, might appear a proper object to be flown at. The vision of the buzzard, likewise, is such as to render it rather adapted to crepusculous than to noontide hunting. Conscious of its deficiencies, it will wait for hours in apparent tranquil indifference, while watching an unfortunate bird, who, transfixed with fear, is afraid to move. We have somewhere met with an account of a pheasant, which was observed to be attempting to conceal itself in some long grass from the observation of a buzzard, which was perched in a tree, evidently watching its motions. The observer having waited two hours to watch the result, became tired, and left them both in the same situation. Another relates that a pheasant seen to secrete itself thus from the attack of a buzzard in the evening, was actually found the next morning in the same situation as it was seen the previous evening, being still watched by the vigilant buzzard. The former we can readily believe, from what we have ourselves seen in our evening walks; the latter, though by no means impossible, yet creates some doubts.

Sect. XII. *The Game flown at by British Falcons.*

2352. *The quarry at which hawking amateurs fly their birds*, are either of the *plume*, or of the *fur*, i. e. either birds or beasts. Some hawks are taught to fly both at the fur and plume; but either for want of sufficient patience, or sufficient dexterity in training, it does not often succeed, and therefore is not often attempted. It is true, that whatever bird or beast the hawk has been first broken to, she or he is apt to *fly* best to that; but nevertheless, it is by no means very difficult to break hawks from flying at any accustomed quarry, and to make them equally eager in the pursuit of another. And the same versatility of talent, both in the trainer and the pupil, will eventually bring a hawk to fly at either fur or plume; but the bird must be a tractable one, and the trainer both a patient and a clever one. Almost all hawks under training are taught to fly at pigeons, because these birds are readily procured. It is therefore necessary to break them from these, before they are entered at their intended game, which is thus managed: — Have ready a living bird or beast of the kind the hawk is intended principally to fly at in future; if it be of the plume, shorten its flight by the method before directed; or, otherwise, retain it loose in a creance. Now let a pigeon fly so distant from the hawk, that she will not be able to overtake it. On the return of the disappointed hawk, throw up another in the same way; and, by repeating this a few times, she will be completely broken from flying at that bird. It is now that the game intended for her future pursuit is to be let fly, which she will readily *bind*, and will thus become fixed to that quarry in future. If she is to be varied in her objects of pursuit, she must be allured by each of them in the same way; and if she has been properly reclaimed, but particularly if she have a perfect confidence in her master, and a personal attachment to him, she will the more readily learn to vary her flight to each quarry. Nothing effective is to be done with hawks without engaging their confidence and regard. Harshness makes them haggard and stubborn. How much it is to be desired, that a conviction of the power over animals by means of kindness, in preference to the exercise of cruelty and violence, would become universal!

Subsect. 1. *Heron Hawking.*

2353. *The heron* (*Ardea major* Linn.) is too well known to need a very particular description. Long and large as it appears, when stripped of its feathers it seldom reaches beyond four or five pounds in weight, although its wings extend from tip to tip more than five feet. Its six inch bill is very strong and very pointed, and its edges are slightly serrated, to give it a firmer hold on the fish it takes. The middle claw of each foot is also notched, without doubt, for the same purpose. The plumage of the heron is of an ashen gray, but pleasingly variegated; and that of the back of the head, more particularly of the male, is elongated into a flowing crest. The plumes of the heron were, in olden times, used as ornaments for the caps and helmets of the nobility, and they still appear as part of the costume of the garter. At the present day the pendent feathers of the neck, gained from the white male common fowl, are dyed for the adornment of the military hats and caps. Wilson tells us the feathers of the heron are, to the present day, an highly esteemed ornament in North America, and are to be seen in the market of New Orleans for sale. Chardin informs us that they were equally in request in Persia; and that, to obtain these feathers, the bird is entrapped, and being robbed of its plumage, is again let loose. In the breeding season herons congregate, and are ranked under the term of platform builders, "for though they construct a shallow depression in the centre of the nest, which is, by all the species, if we mistake not, lined with some sort of soft material, such as dry grass, rushes, feathers, or wool, the body of the nest is quite flat, and formed much in the manner of an eagle's aerie, of sticks crossing one another, and supported upon the branches, or between the forks of high trees. All the species also are social, nestling in large communities, after the manner of rooks, though instances are not uncommon of individual pairs breeding solitarily." (*Arch. of Birds, Lib. E. K.* p. 184.) Belon tells us, the meat of the heron was royal food in France; and also, that it was, in early times, little less prized in England.

2354. *Established heronries* were originally very numerous, and were kept up with great attention, and every encouragement was held out to these birds to attach them to the locality. The heronries at present existing in this country, we are informed in the work just quoted, are "in Windsor Great Park, on the borders of Bagshot Heath; at Penshurst Place, Kent; at Hutton, the seat of Lord Caernarvon; in Gobay Park, on the road to Penrith, near a rocky pass called Yew Crag; on the north side of the romantic lake of Ulswater; at Cressi Hall, six miles from Spalding in Lincolnshire; at Downington-in-Holland, in the same county; at Brockley Woods, near Bristol; at Brownsea Island, near Poole in Dorsetshire." Colonel Montague notices a heronry of Scotland in a small island, in a lake, where, there being only a scrubby oak, much too scanty to contain all the nests, many were placed on the ground. "Besides these," he says, "we are acquainted with a small one in the parish of Craigie, near Kilmarnock in Ayrshire." Didlington, near Brandon in Norfolk, Messrs. Salvin and Brodrick inform us, has long boasted its heronry, which they are happy to say is still carefully preserved. It was near this that Colonel Wilson kept his heron hawks for many years. Formerly heronries were very strictly protected by government, and legal enactments were made for that express purpose; but those times are gone by. Taking young herons from the nest was then fineable to the amount of 10*s*., which was a great sum in those days; and to kill a heron subjected the offender to a fine of 20*s*. A temptation to the destruction of this bird beyond the protection of the fisheries, existed in the value set on its flesh, which at that time of day was in as high estimation as that of the peacock; although, in the language of trade, both are now "at a discount." We have ourselves eaten the heron; the flesh is dark, but not of a bad taste, and much less fishy in flavour than the flesh of most piscivorous birds.

2355. *The daily visitations of the heron* to its feeding places are watched by the falconers, who station themselves to the leeward or down wind of the heronry, so that the heron on its return must fly against the breeze, which gives a great advantage to its enemy. As soon as one is discovered on the return, a cast of falcons is let loose, who, catching sight of the quarry, rise in pursuit (*fig.* 358.). The heron, instinctively aware that its life is at stake, prepares for the fray by disgorging the contents of its stomach to lighten the weight of the body. The coursing falcons ascend the airy vault in spiral gyrations, by which the atmospheric resistance to their flight is lessened. These circlings, it has been observed, have frequently the curious effect of presenting the three birds as flying in different directions; whereas the real intentions of the two hawks are steadily directed to one point, which is that of contact with the heron, whose entire efforts are as steadily engaged in avoiding it. To effect this, the affrighted heron strenuously endeavours to rise above the hawks, who however, by superior power of wing, commonly succeed in getting the upper station, from which one presently makes its stoop; and happy it is for the poor heron if he can evade the blow,

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which he occasionally does, either by shifting his station, or by receiving the falcon on his sharp bill, which instantly transfixes it. This danger is however denied on authority, but we feel assured that it does occur. The second hawk, if the first fails, stoops in his turn; but the meditated blow of this also is frequently evaded like the former. The trio then still rising higher and higher, the sight becomes interesting in the extreme, and the spectators are scarcely less agitated than the feathered warriors above. At length another stoop takes place, and the fatal seizure is made by one hawk, while the other *binds* to his fellow, and all three quickly descend together, but not with a dangerous rapidity, as their powers of inflation and the action of their wings break the fall. It is now that the mounted horsemen make the best of their way to the assistance of their falcons, and their first efforts must be directed to secure the head of the heron, that the sharp beak may not take effect on one or both of them. This danger is best avoided by any one putting his foot on the neck; and indeed is the only safe way, such is the savage fierceness and great power of the wounded heron.

2356. *The heron of olden times*, if we believe all that is told us, had some singular means of defending itself not recognised by us moderns, although there are not wanting some veritable proofs of annoyance offered by the pursued towards the pursuer, particularly by the *beasts of stinking flight*. In the *Booke of St. Alban's* is found the following note:— "The heron, or hernsew, is a fowl that liveth about waters, and yet she doth so abhorre raine and tempests, that she seeketh to avoid them by flying on high. She hath her nest in very loftie trees, and sheweth as it were a natural hatred against the gossehawk, and other kind of hawks, and so likewise doth the hawk seek her destruction continually. When they fight above in the aire, they labour both especially for this one thing, that the one might ascend and be above the other. Now, if the hawk getteth the upper place, he overthroweth and vanquisheth the heron with a marvellous earnest flight; but if the heron get above the hawk, then with his dung he defileth the hawk, and so destroyeth him, for his dung is a poison to the hawk, rotting and putrifying his feathers."

2357. *Herons are taken for hawking purposes*, by placing around their nest strong nooses, so arranged, that when they come to visit their eggs, their legs may become entangled therewith. About sunset a man placing himself to leeward of the nest in close concealment, having the line or lines to which the noose or nooses are attached, by drawing them tight, can usually succeed in taking one. It is necessary, however, to preserve the life of the heron, not only that food be forced down its throat, but also that it be prevented from disgorging it when there, by placing a bandage around the neck, sufficiently tight to prevent vomition, but not so much so as to interfere with respiration. Without this precaution, such is the sulkiness of this animal, that it will infallibly starve itself. Nevertheless, such also is the power which skill and perseverance have in taming the most intractable animals, that even the heron has been brought to assume all the fondness of a pet; in proof of which Sir John Sebright offers the following interesting fact, which occurred within his own knowledge:—"A full grown heron was taken in a decoy, and brought to J. D. Downes, Esq. at Old Gunton Hall. At first, he was obliged to treat it in the way that I have described, by cramming and *tying down* the food; but at length it became so tame, as to follow him on the wing to the distance of some miles, to come into the house when called, and to take food from the hand." (*Observations on Hawking*, p. 39.) In the reign of Henry VIII. herons were imported for the amusement of hawking with them, and we may form some idea of the value then put on these birds by the importation duty, which was 13*s.* 8*d.* on each heron; no inconsiderable sum in those times.

Subsect. 2. *Kite Hawking.*

2358. *The fork-tailed kites* have long been flown at by falconers. In our own days Lord Orford, Colonel Thornton, and others have practised it. Lord Orford particularly pursued it in the neighbourhood of Alconbury Hill; which being in a campaign country, afforded kites in plenty. To the leg of the great owl, when it could be procured, or in default of that, to the leg of the common white owl, was appended the brush of a fox: though, we have little doubt but that, barring its less sporting-like appearance, the leg or wing of a large fowl would have done as well, and certainly would equally shorten the flight of the owl. Thus dressed, the owl was thrown up within sight of the kite, who, so *lured*, descended to its ruin; for it was itself immediately attacked by the falcon in waiting, and quickly raked. For this sport the gerfalcon was preferred, her size and strength making her the fittest antagonist for such a quarry. Blome thus describes kite-hawking: —"The day being warm and clear, you will soon discover a kyte cooling herself in the air; then let your owl fly, and the kyte will not fail to make near her to gaze upon her; and when the kyte is descended pretty near her, then let fly your hawk; and the kyte, perceiving the surprise, doth endeavour to preserve herself, by mounting up and winding the most she can. And here the combat begins, but ofttimes none can see where it ends, both mounting out of sight; but in the end the hawk becomes victor, and by main strength and courage beats down the kyte, yet not without many turns and wrenches in the air, to the great pleasure of the spectators." (P. 29.)

Subsect. 3. *Pheasant Hawking.*

2359. *A goshawk is usually employed for the purpose,* but she must be extremely well reclaimed or broke to this particular sport, which differs much from partridge hawking, or any other hawking in the open air. In cover there will be much bustle; and men, dogs, hawk, and pheasant, will probably be mixed up in one confused mass; it will require, therefore, a very well manned hawk for the purpose. The leaves also should have fallen to further the business; indeed, it can be attempted with only a dubious chance of success until then: a pheasant being sprung by the dogs, call them in and cast off the hawk; if she succeed in raking her prey, approach her carefully, the dogs being strictly kept in check. Do not attempt, however, to take the pheasant from her, but walking around her, encourage her with such tones of voice as you are accustomed to use when she behaves well. When you observe her quietly pluming her prey stoop down, and severing the head of the pheasant from the body, allow her to retain that, but draw the body away. When you wish to *fist* her, have a small piece of meat in readiness to offer her as a lure; when, having hooded her, reward her with such portion of food as you are accustomed to give on these occasions.

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PHEASANT HAWKING.

2360. *To take a pheasant from the perch,* Blome directs the following initiatory process: — " Provide a dead pheasant, or in preference a living one as better, which take along with you into the wood, and when you are disposed to call your hawk for her supper, and as she is drawing and attending after you for the same (having a convenient pole ready for that purpose), call your spaniels about you to make them *bay,* and suddenly breaking the neck of the pheasant, lift it upon a bough, that the hawk may have a sight thereof, and with your voice calling and encouraging her to come in to seize it; and if she pulls it down, be sure that you so rebuke the dogs, and keep them at command, that at her descending they give her way, and that she may plume and take her pleasure thereon; which, in a short time, will so embolden her, that when she seeth a pheasant take *perch,* she will immediately seize it and pull it down: nor will she be fearful of the dogs; for when they are once *managed,* and brought into good subjection, they will know their duty, and be fearful of transgressing, so that you may venture them if you were absent; but be sure you have no strange dogs, for one may spoil your sport, drawing the rest into errors, and cause them to hunt after any thing. Nor is it convenient to hunt with many spaniels, for two or three couple are enough to range and beat about a large wood, and to perch a pheasant." (P. 35.)

Subsect. 4. *Partridge Hawking.*

2361. *Hawking of partridges* is more common than hawking of pheasants, for the latter being mostly found in woodland scenery, the sport offered is thereby rendered neither so convenient nor so effective. Partridge hawking is followed with both long winged and short winged hawks. The scene of practice is commonly on large fields, or open tracts of country, where the horsemen and company generally can beat in line, and the attendant falconer or master, being well mounted, can ride forward, and be ready to receive the quarry. Either pointers or spaniels are necessary, or both. Sir John Sebright says, that high ranging pointers are the best dogs for the sport, for the birds will often lie to a dog, when they will not suffer horsemen to approach them. Neither, provided the hawk used be well broke, is it necessary that it should be very near the dogs when they point, or near the birds when they rise. He also observes that, if the hawk be within two or three hundred yards it will be near enough, if her *soar be high* and she directs her view inwards. In case she should not do this, she must be lured by the voice, or constrained into noticing by the lure itself. It is however observed, that it is better that a flight be lost by the hawk ranging too far, than that she should be lowered or confined in her pitch by too much luring. Sufficient time should by all means be allowed to the hawk to mount well before the game is sprung; for being sufficiently elevated, her range of vision will be equal to take in the whole expanse around her, and incline her to watch the moving scene more attentively than if she were nearer.

2362. *The partridge being flushed*, the hawk will stoop with astonishing rapidity, and seize on it: at which time neither horses, dogs, nor company, should press forward; on the contrary, they should permit the falconer only to advance, who, approaching the hawk with caution, must walk quietly round her, when, gently kneeling down with his arm extended, as though in the act of feeding the hawk, he should lay hold of the partridge, when, by the hawk's grasp on the bird he should place her on the fist. This done, put on the hood, and reward the hawk with the head of the quarry, and if she be not intended to fly again, let her be fed immediately. Should the hawk, however, have missed her quarry, and if, on the contrary, it has been *put in*, that is, driven to a bush or hedge, and so cannot be quickly retrieved and reflown, then in such case the hawk must not be disappointed, particularly if it is its first bird, otherwise, on the next occasion, should she rake her bird, she will, in all probability, *carry it* also, *i. e.* fly away with it from the fear of having it taken from her. But when having, as we have said, missed her quarry, if a live partridge (of which there should be always one or more in readiness when new made hawks are flown) be thrown up, then, having raked it, she must be allowed to eat it also; and having so done, on her next flight she will in future use her best endeavours to avoid a similar disappointment.

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PARTRIDGE HAWKING.

2363. *A somewhat different method of partridge hawking* is practised in the latter part of the season, when the country is very bare, and when the partridges are often very wild, and lie indifferently even to the dog. In such cases it is recommended that the company "draw up in line at fifty or sixty yards' distance from each other, and gallop across the plain with a hawk upon wing," the falconer being in the centre of the line, that he may regulate the pace by the situation of the hawk. Sir John Sebright informs us, that this method of partridge hawking has afforded him more sport than any other; and that, when the face of the country was so bare and the birds so wild, as to make it impossible to approach them in the usual way.

2364. *Flying Hawks* repeatedly over the same country does not appear, Messrs. Salvin and Brodrick inform us (p. 62.), to have the effect of banishing the game from the ground, as is often supposed; the same covey of partridges may be found day after day, all through the season, almost in the same spot, and if not subjected to the persecution of "vile saltpetre," will afford many an exciting moment to man, beast, and bird. The goshawk was the bird chiefly used for the purpose of partridge hawking, though sportsmen differ as to its merits, Sir John Sebright thinking very lightly of its powers against them, while Messrs. Brodrick and Salvin think it is best confined to fur hawking, in which it appears to advantage.

Subsect. 5. *Rook and Magpie Hawking.*

2365. *Rook hawking* is with many a very favourite diversion. It is practised with passage falcons, and occasionally with eyasses. With falcons which have long flown at hack, and have been accustomed to prey for themselves, Sir John Sebright informs us he has likewise experienced excellent sport. The rook, strong in flight, is no less bold than wary; and his stratagems to elude his pursuers, which are usually two, are great, as the resistance he offers is worthy of his size. But notwithstanding this, the *swoop* being once made, he is usually brought to the ground.

2366. *Magpie hawking* is also practised with either passage falcons, hack-hawks, or well trained eyasses. On any open ground which presents a scattering of low trees and brushwood, excellent sport is often afforded by them. But as this bird is most dexterous at shifts and turns, it requires not only that two hawks be taken out, attended by numerous helpers, but likewise that all the other means employed against him should be of the most effective kind. It is the habit of the magpie immediately it sees a hawk to retreat to a bush, from whence it is difficult to drive him, for as the hawk *waits on* in the air, and cannot make her stoop until the magpie moves, so cunning mag sticks to the bush until actually beaten out of it. When however he is driven out, the hawk will *stoop* at him as he makes for another bush. Should the pitch of one hawk be too high, and cause her to miss her quarry, the other hawk being just cast off will probably arrest his progress. Even with these advantages, and the addition of several assistants, the shifts of the magpie will frequently be so dexterously made, that both hawks will fail to strike him. Shy as he is at other times, the pie will now seek to shelter himself among the men and horses, or he will sneak into any nook or corner. Having escaped the first attack, poor mag endeavours to wend his way to some strong cover, if any such be at hand, which must be prevented by the activity of the mounted attendants. If he take to a hedge, the utmost effort is required by all the attendants, particularly of the horsemen, to force him from it, by cracking their whips and riding before and behind him, when, if he once faces the open, he is *raked.* Sir John Sebright enters into an animated detail of this sport, which he considers as superior to every other kind of hawking.

Subsect. 6. *Waterfowl Hawking.*

2367. *Brook hawking*, as it is often termed, was much in vogue formerly. The practice was not, however, confined to brooks, but extended to rivers, sea-shores, moors, and ponds. It engaged, according to Blome, " the jer-falcon, the haggard falcon, the jerkin, and the tassel gentle." Waterfowl of every description were made prey of, but some particular objects, according with the training of the falcons, were particularly sought for. Dogs were employed to rouse the fowl, being led on by men who traversed the water's edge; while horsemen, with the hawks on their fists, were at hand to *cast off* one or more, according to the nature of the game. A heron or mallard would require two, while a widgeon or a teal would probably engage only one.

2368. *Blome's description of brook hawking* commences with the following hints on the training of falcons to this sport: — " In many places there are ponds inclosed with woods, bushes, and the like obscurities, so that they are concealed from passengers, and such places ducks do much resort unto: now, for the training up your *hawk* to take them, observe these directions: Your hawk being in all points ready to fly, be provided with two or three live *train ducks,* and let there be a man who must lie concealed in some bush by the pond with them, so that, coming to the place, having your hawk prepared for the sudden flight, beat the bush with your pole, where the man lieth concealed with the ducks, who must cast forth one of them, to the end the hawk may think it was put up by you; and if with a courage she takes it, *reward* her well; and this is the way to train up a goshawk to catch a *fowl* at *sowce.* Having trained your hawk to this, you may boldly go with her to the ponds where the fowl lies, and creeping close to the place, raise them up by beating about with your pole, and when any rise, let go your hawk from your fist, and if she seize it, let her take pleasure thereon, and reward her well. It is very necessary to have a spaniel with you; for if the hawk is well acquainted with the sport, she will be so nimble at the catch, that they will fall into the water together, and by that means the fowl may go to plunge, so that then the spaniel will be ready to do good service, and not displease the hawk. It is when your hawk will fly, jump, and come in at your lure, it is then that she is fit to go to the river in earnest; and to further manage your flight, observe these directions: When you have found where the fowl lies, then go about a quarter of a mile up in the wind to the river side, and whistle off your hawks, loosing their hoods, and let them fly with their heads in the wind, for there must be a cast of hawks for this flight; then let the falconers, or others that are at the sport, strike their poles in the water to cause the hawks to come in

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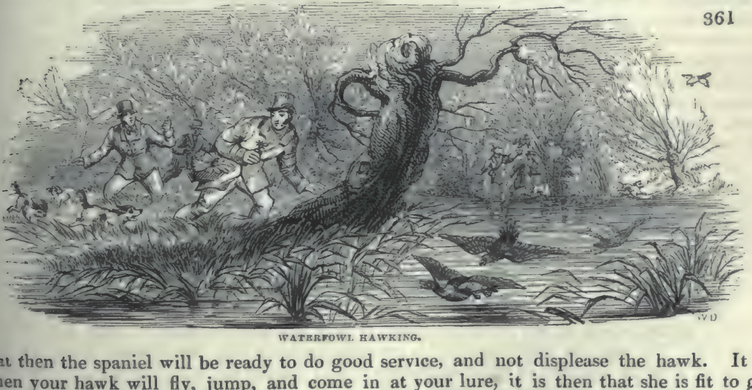

WATERFOWL HAWKING.

unto you, and own the river; and when they are got up into their places, then let one of the falconers go below the fowl, that is, down the river; and the other that is above, let him come down, and show the fowl again, and by that means the fowl will be crost over land, that the hawks may make a fair stooping, and knocking the fowl on the land, will occasion the killing it, which will quarry your hawks. But if they should miss their stooping, so as the fowl may get to the river again, then your hawks must go to their wings to make good their flight; but if the fowl should go to plunge, then take down your hawks, lest you should fly them too long, and the falconers, with their spears or poles, may endeavour to spear or kill the fowl, which take to quarry the hawks with. If they kill not the fowl at first stooping, give them respite to recover their place; and when they are at their place again, and their heads in, lay out the fowl as before directed, and reward them well if they kill. You should do well to have a live duck in your hawking-bag, that if they kill not the fowl which is stooped (as ofttimes it happens), then your hawks being at their pitch and their heads in, you may throw to your hawks and reward them; and by this means you shall always keep your hawks in good life and blood, and to be inwards."

PART VII.

SHOOTING, AS A FIELD SPORT.

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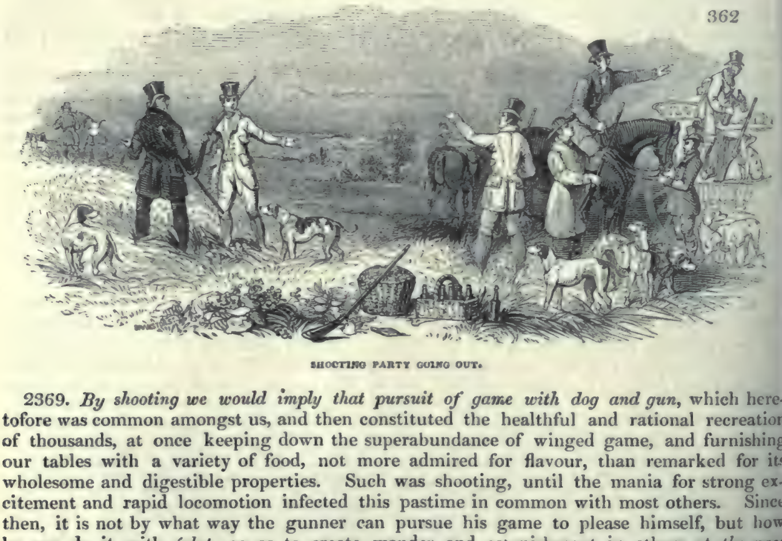

SHOOTING PARTY GOING OUT.

2369. *By shooting we would imply that pursuit of game with dog and gun*, which heretofore was common amongst us, and then constituted the healthful and rational recreation of thousands, at once keeping down the superabundance of winged game, and furnishing our tables with a variety of food, not more admired for flavour, than remarked for its wholesome and digestible properties. Such was shooting, until the mania for strong excitement and rapid locomotion infected this pastime in common with most others. Since then, it is not by what way the gunner can pursue his game to please himself, but how he can do it with *éclat*, so as to create wonder and astonishment in others at *the pace he can go*, that the pleasure of this sport is estimated. See the youthful heir to manorial rights, instead of quietly going out as in days of yore, accompanied by one or two friends, followed by his keeper and a marker or two, in these times attended by a party of choice spirits, like himself, sallying out with relays of horses, as though the poor birds, if found refractory, were to be ridden down. It is a chance also if a caravan be not in attendance, crammed with all the materials of slaughter, as fresh dogs to replace those which tire, or are wounded by the reckless blades; fresh guns to supply such as are not enabled to keep their *pace* by reason of fouling; with vast supplies of stimulating fluids and solids to keep up the spirits of the principals, and stupify the subordinates by their quality and quantity. We are not now depicting a grousing party, where the distance to travel, and other calls on the energies of those concerned might require all this; but we are describing a scene that may be too often witnessed on the 1st of September against the partridge, that *sporting trump* of English counties. Our party returns, slaughter has done its work, probably forty or fifty brace are sacrificed to gild the laurels of our hero and his friends, and all to mark the *pace they go*, in conformity with the fashionable speed of modern days and modern youths. A week thus spent clears the manor, and were it not partially restocked from neighbouring lands more fairly shot over by those who really enjoy the sport, not in a frantic but in a rational manner, another such battue could not be perpetrated by the owner for years. Be it however understood, we do not seek to waste our daily energies, or trim our midnight lamp, to collate for the *dead slow.* No; we write for those who, like ourselves, are zealots in the legitimate pursuit of game, but eschew the unfair and wanton destruction of it; to such we respectfully offer what follows on the subject!

2370. *It is only since the discovery of gunpowder*, and the subsequent invention of the fowling-piece, that we are able to wage any thing like an equal warfare with winged game. It is true that, for a considerable time after the invention of fire-arms, many contended that the bow was fully equal to the arrest of the speediest animal, and that as it discharged its fatal messenger without noise, it neither gave timely notice to its victim, nor cautioned others of the presence of danger; and that it was therefore to be preferred to the lightning of the fire, or the thunder of the explosion which accompanied the discharge of the gun. Nevertheless, we must not confine either our views, or our inquiries, within limits too narrow for the importance of our subject; for had the pursuit of beasts and birds alone engaged the attention of man even in early times, it may be doubted whether the destructive arts now known would not have remained buried in oblivion. On the contrary, it was the hostility of human foes, without doubt, that stimulated his energies to discover more effective means of offence than those then known in the chase after beasts and birds.

CHAP. I.

EXPLOSIVE SUBSTANCES.

2371. *The various phenomena connected with fire* must have proved extremely interesting and wonderful to man in his pristine state. It must particularly have excited his surprise to find, that the friction of two cold substances together, as two pieces of wood, should produce heat; or, that the collision of flint and iron should elicit fire. But how much more must the early races have been astonished at the instances of spontaneous combustion which must occasionally have fallen under their notice, from the readiness with which many of the common products of nature ignite, either spontaneously, or when they come in contact with other matters. It was, without doubt, such phenomena that first created superstition in the mind of man; and it was probably the plot of the crafty in early times, to employ these as agents in working on the credulity of the simple to their own advantage. How different a use do we now make of them, when, instead of for ever shutting up the incalculable riches and abundant advantages of a coal mine, because of the sudden and tremendous explosions that occur when its inflammable air comes into contact with flame, by which so many lives have been lost (in one instance only, one hundred and one persons met instant death in one of the coal mines at Newcastle); instead, we repeat, of being deterred by superstitious fears from prosecuting their search for an endless supply of fuel, the active minds of the present day employ themselves in devising means, not of flying from the danger, but for conquering it; and it was reserved for the genius and research of a Davy in a great measure to effect this, by the discovery of the *safety-lamp.* Man therefore, as he progressed, became more and more experienced in the various phenomena which presented themselves around him; and his growing intelligence assisted him to make them subservient to his purposes. Thus, however explosive combustibles might at first have excited wonder and fear for a time, they eventually were turned to account, either in guarding his own habitation, or in annoying his enemies in theirs. The great inflammability of naphtha as soon as it reaches the air, the rapid and powerful combustion of sulphur, &c. &c. would be soon worked on with advantage to himself, both as an offensive and defensive agent; and when, from an accidental mixture of naptha and sulphur with bitumen, it was found that an *unextinguishable fire* was created, then it was that the dogs of war were indeed unloosed.

SECT. I. *The Greek Fire.*

2372. *This terrible explosive* is called by Procopius, in his *History of the Goths*, "Medea's oil," as being supposed to be the invention of that sorceress. However, as its properties became known, and its uses widely extended, it received different names, according to its locality. In China it was known by the significant appellation of the "oil of the cruel fire," and in Greece as the "Greek fire," by which name it has been handed down to us. Jacques de Vitry notices a fountain in the east, after the following manner: — "*Ex cujus aquis ignis Græcus efficitur, quibusdam aliis admixtis.*"—"From the waters of which, with some other ingredients, the Greek fire was formed." This was probably a spring of naphtha, by no means uncommon in Asia, and as such would be found not to yield, like ordinary fire, to the extinguishing effects of water. William of Newbury says, "*Muris enim admotæ (machinæ) incendebantur ab hostibus quodam ignis genere quam Græcum dicunt. Denique hoc genus arte confectum miræ esse potentiæ dicitur, nec contrario cedere elemento.*"—"For the machines which were moved against the walls were burnt by the enemy with what was called the Greek fire. This kind of artificial combustible is said to possess an astonishing power, and not to yield to its contrary element." So also Albert d'Aix remarks, "*Hujus ignis genus aquâ erat inextinguibile.*"—"This fire is not extinguishable by water." Invention was therefore busied in searching for means for this purpose, as well as to obtain an antidote to its effects; and what these were, we learn from Jacques de Vitry, who says, "*Postquam vehementer fuerit accensus, vix aut nunquam potest extingui, nisi aceto, aut hominum urina et sabulo.*"—"After the flame had acquired a degree of vehemence, it could scarce ever be extinguished, unless by a mixture of vinegar or human urine with sand." He further informs us that, to prevent its dreadful effects, ships were covered with cloths dipt in vinegar. Machines for attack were, for the same purpose, covered with boiled horse and bullock skins."

2373. *The machinery of fire-arms* was first generated in the attempts to make the destructive properties of this combustible more fatal and extensive. Joinville, who is said to have been an eye-witness, says, "that this fire was thrown from the bottom of a machine called a petrary, and that it came forward as large as a barrel of verjuice, with a tail of fire issuing from it as big as a great sword, making a noise in its passage like thunder, and seeming like a dragon flying through the air; and, from the great quantity of fire thrown out, giving such a light, that one might see in the camp as if it had been day." It is added, that this fire was ejected thrice in the night from the petrary, and four times from a large cross-bow.

Sect. II. *Of Gunpowders.*

2374. *Gunpowder may be said to be of two kinds,* essentially differing in composition, and equally so in their methods of ignition. One we have long known by the common name of *gunpowder,* with which we charge the barrel of the gun. The other, of modern invention, is called *percussion* or *detonating powder,* from a blow smartly given to it occasioning immediate ignition. With this we charge the lock of the gun; or, in other words, we more immediately connect the gun with the lock by its means. As both are momentous articles in a sporting point of view, and as we know that scientific research is pursued by many of our most ardent sportsmen, we hope to be excused if we treat of them somewhat in detail.

Subsect. 1. *Of Gunpowder popularly so called.*

2375. *The discovery of gunpowder* opened a new and wide field for the artisans who worked in projectiles. It is however singular, that the exact date of so important a change in the mechanics of war should not have been accurately noted. Some authorities lead to the conclusion, that gunpowder had been known and used in China and Hindostan long before the fourteenth century, which is by many others held to be the true date of its discovery. Grose however appears to favour the greater antiquity of the invention, and quotes the following ancient testimony to this point in *Grey's Gunnery,* printed A. D. 1731: — "In the life of Apollonius Tyanæus, written by Philostratus, about 1500 years ago, there is the following passage concerning a people of India, called Oxydracæ, — 'These truly wise men dwelt between the rivers Hyphasis and Ganges; their country Alexander the Great never entered, deterred, not by fear of the inhabitants, but, as I suppose, by religious considerations; for, had he passed the Hyphasis, he might doubtless have made himself master of the country all round them; but their cities he could never have taken, though he had led a thousand as brave as Achilles, or three thousand such as Ajax, to the assault; for they come not out into the field to fight those who attack them, but these holy men, beloved by the Gods, overthrow their enemies with tempests and thunderbolts shot from their walls. It is said that the Egyptian Hercules and Bacchus, when they overran India, invaded this people also; and having prepared warlike engines, attempted to conquer them: they made no show of resistance, but upon the enemies' near approach to their cities, they were repulsed with storms of lightning and thunderbolts, hurled upon them from above.' Mr. Grose also quotes, in proof of the same opinion, the testimony of Robert Norton, who, in a book entitled *The Gunner,* printed in London 1664, states, that Uffano reporteth "that the invention and use, as well of ordenance as of gunpowder, was in the eighty-fifth yeare of our Lord made known and practised in the great and ingenious kingdom of China; and that in the maretyme provinces thereof, there yet remain certaine peaces of ordnance, both of iron and brasse, with the memory of their yeares of founding engraved upon them, and the armes of King Vitney, who, he saith, was the inventor." In the works of Friar Bacon, which are known to have been written at Oxford about the year 1270, which was at least half a century before the date attributed to the discovery by Schwartz, the ingredients which enter into the composition of gunpowder are expressly named. It is also there stated, that the effects of this powder when inflamed, are productive of a noise like thunder and a vivid flash like lightning. It is supposed that the Friar gained this information from the writings of Marcus Græcus, a still more ancient authority. Bishop Watson also favours the opinion, that the knowledge of gunpowder is of very ancient date.

2376. *The more modern discovery of gunpowder* has, nevertheless, many powerful advocates, most of whom consider that the merit of it should be given to Barthold Schwartz, a German monk. Father Kircher expressly states this to be the fact; and he strengthens his assertion by citing the great reputation which Schwartz had gained by his profound knowledge in alchymy. If such was the case, without detracting from the general merits of Schwartz, he appears to have been somewhat indebted to chance for the discovery. For it is reported, that, having mixed together nitre, sulphur, and charcoal, for some medical purpose, a spark accidentally falling on the mixture exploded it. Frightened as he was, he profited by the discovery; and the first use he made of it, it is said, was also to frighten some bandits from their haunts in a neighbouring wood. Our limits prevent us from pursuing the controversy of the origin of gunpowder further; but should the reader feel an interest in the subject beyond what this supplies, we would refer him to the works of Bacon, Polydore Virgil, Baptista Porta, and Spondanus, among the olden authorities; and to Bishop Watson, together with the encyclopædias of note, among the modern authorities.

2377. *Gunpowder*, it is well known, is made by mixing together saltpetre, sulphur, and charcoal; but the relative proportions of these ingredients used in the process, both by the early and later makers of this article, vary considerably. Bishop Watson informs us that Baptista Porta, whose opinion seems to have had great weight with the public in the time in which he lived, which was the early part of the sixteenth century, gives different proportions of nitre, sulphur, and charcoal, according to the several degrees of strength required in the powder. It is, however, greatly to be regretted, that the aptitude in the nitre, which enters into its composition, to absorb moisture, is such as to render it difficult to make it retain its original strength without extreme care. This tendency in gunpowder to absorb moisture, is also greatly increased when the nitre is adulterated with common salt, as is too frequently the case. In proof of the injurious effect which moisture has on gunpowder, the following experiment made before the Royal Society is offered: — "A quantity of gunpowder was taken out of a barrel, and dried with a heat equal to that in which water boils; a piece of ordnance was charged with a certain weight of this dried powder, and the distance to which it threw a ball was marked. The same piece was charged with an equal weight of the same kind of powder, taken out of the same barrel, but not dried, and it threw an equal ball only to one-half the distance. This effect of moisture is so sensible, that some officers have affirmed that they have seen masses of gunpowder which were good in the morning, but which became (as supposed, by attracting the humidity of the air) good for nothing in the evening." (*Gallery of Nature and Art*, p. 180.) We hope after this, that we need not enforce the necessity there is for every sportsman to dry his gunpowder on all occasions when it has been exposed to the air, and most so when the atmosphere is known to be superabundantly charged with moisture.

2378. *The chemical composition of gunpowder*, and the mechanical operations entered into in the making of it, are thus ably set out by Dr. Ure in his *Chemical Dictionary*: — "This explosive substance consists of an intimate mixture, in determinate proportions, of saltpetre, charcoal, and sulphur; and is better in proportion (every thing else being equal) to the quality of these ingredients. The nitre in particular ought to be perfectly refined by successive crystallisations, and finally freed from adhering water, by proper drying, or by fusion in iron pots at a regulated heat. Nothing can surpass in these respects the nitre prepared in the government powder-works at Waltham Abbey. It is tested by adding to its solution in distilled water nitrate of silver, with which it occasions no perceptible opalescence. The sulphur ought also to be of the finest quality, and purified by skimming, or even sublimation, if at all necessary. The charcoal should be newly made, it should burn without having any sensible residuum, be dry, sonorous, light, and easily pulverised. The charcoal for gunpowder is made either of alder, willow, or dogwood, the latter being preferred, which is cut into lengths, and ignited in iron cylinders, the wood before charring being carefully stripped of its bark. The three ingredients being thus prepared, are ready for manufacturing into gunpowder. They are, 1st, separately ground to a fine powder, which is passed through proper sieves or bolting machines. 2dly, They are mixed together in certain proper proportions, but which do not seem to be definitely determined, for they differ in different establishments of great respectability, as is shown in the following table: —

	Nitre.	Charcoal.	Sulphur.
Royal Mills at Waltham Abbey - -	75	15	10
French for war - - - - -	75	12·5	12·5
Ditto for sportsmen - - -	78	12	10
Ditto for mining - - -	65	15	20
Chaptal's proportions - - -	77	14	9
Chinese ditto - - - -	75·7	14·4	9·9
Mr. Napier's - - - -	80	15	5

3dly, The composition is then sent to the gunpowder-mill, which consists of two edgestones of a calcareous nature, turning by means of a shaft on a bedstone of the same nature, which gives no sparks, as sandstones would be apt to do. On this bedstone the composition is spread, and moistened with as small a quantity of water as will, in conjunction with the weight of the revolving stones bring it into a proper body of *cake*, but not of *paste*. The line of contact of the edgestone is constantly preceded by a scraper, which goes round with the wheel, continually scraping up the cake, and turning it into the track of the stone. From fifty to sixty pounds are usually worked at once in each mill-wheel. When the cake has been thoroughly incorporated, it is sent to the corning-house, where a separate mill is employed to form the cake into grains of corn. 4th, Here it is first pressed into a hard firm mass, then broken into small lumps, after which this graining is executed by placing these lumps in sieves, on each of which is laid a disc of *lignum vitæ*. The sieves are made of parchment skins perforated with numerous round holes. Several such sieves are fixed in a frame, which, by proper machinery, has such a motion given to it, as to make the *lignum vitæ* runner in each sieve move round with considerable velocity, so as to break the lumps of the cake, and force the substance through the sieves, forming grains of several sizes. The granular particles are afterwards separated from the finer dust by proper sieves and reels. 5th, The corned powder is next hardened, and the rougher edges taken off by being revolved in a close reel or cask, turning rapidly on its axis. This vessel somewhat resembles a barrel churn; it should be only half full at each operation, and has frequently square bars inside, parallel to its axis, to aid the polish by the attrition. 6th, The gunpowder is now dried, which is done generally by a steam heat, or by transmitting a body of air, slightly heated in another chamber over canvass shelves, covered with the damp gunpowder." (*Dr. Ure's Chemical Dictionary*, art. GUNPOWDER, p. 514.) For some interesting additional matter on the rationale of the action of gunpowder in detonation and combustion, we would refer to the work itself.

2379. *The introduction of other substances* to increase either the strength or the quantity of gunpowder cannot be wondered at, when we consider the importance of the article. It has been often varied, not only in the relative portions of its principal ingredients, but also by an experimental admixture of other articles with it, with a view to increase its strength, to lessen its cost, or simplify its manufacture. Mr. Winsor some years ago took out a patent for introducing sugar as an ingredient in the manufacture. He says that, "When properly reduced to a powder by trituration, it may be mixed with common gunpowder, in the proportion of one-fourth sugar to three-fourths powder, without diminishing its exploding force." Query, Does this substitute *augment* it?

2380. *The size of the grains of gunpowder, should they be small or large?* Many contend that gunpowder should be minute in its grains; other authorities, of equal weight, assert that the coarse grained powder is the strongest. We believe the truth to be, that each possesses advantages over the other, according to the size and weight of the fire-arms the powder is used for. Greener, however, says, "I have no hesitation in asserting, that if you obtain powder of fine grain, and powder composed of the same quality of ingredient, coarser grained, the latter will be found to be stronger than the former. This I have tried in various ways, both by the rifle and the musket, and the same quantity of the coarser invariably gives the longer range. It is owing, in my opinion, to each grain containing within itself greater force. When one is ignited, its effect is greater than that of several smaller ones. Four times the quantity of smaller grained has to be ignited to generate the same force, as is required of the larger grained. Again, the smaller grain is generally coated with a sort of varnish, which must be injurious to its quickness. Another advantage the larger grain possesses is, that, from its size, it is less liable to be completely compressed into a solid state; and, from the largeness of the interstices around them, more atmospheric air is contained in a body, which must greatly benefit it in igniting, as without question (though it is possible to fire powder *in vacuo*), it will burn better with the assistance of atmospheric air." (*Loc. cit.* p. 170.) This universal approval, however, is doubted by other authorities; and we are ourselves of opinion, that were large grained powder only used, our medium guns would misfire much oftener than they now do. It is, we conceive advisable, that the grains of the powder employed should be proportionate to the bore of the gun and the weight of its metal. We have ourselves made a few experiments, to assure ourselves of the truth in this respect; and our opinion, formed on the result of these, corresponds with those of Colonel Hawker, who says, "The best powder for copper-cap guns is the 'fine cylinder' of Curtis and Harvey, the large-grained powder being liable to misfire. But with copper primers we may venture on that of larger grain; and particularly in damp weather or on salt water. But by experiments in 1829, I find that the size in grain of the powde should be as duly proportioned to that of the gun, and the long distances for which it i required, as the wadding must be to the size of the caliber." He further remarks, " have invariably observed that small grained powder fails to answer in large guns; particularly on salt water, and in damp weather. It always shoots weak, beyond fifty or sixt yards, and is very liable to hang fire. If a punt-gun is loaded with fine powder, an brought in at night, the chances are that it would hang fire in the morning. But, wit coarse cannon-powder, I have known a gun that has been loaded a fortnight go off as we as possible, by merely being probed and fresh primed." (*Instructions to Young Sportsmen*, 7t ed. p. 100.) There is here both argument and fact.

2381. *The glazing of gunpowder, is it beneficial, or the reverse?* As far as our own experience goes, there is little difference between the glazed and the unglazed. We, however, rather prefer the glazed, but we are by no means certain that we do it on any better ground than that it is the most sightly. Colonel Hawker appears to prefer the unglazed, but he gives us no reason for this preference. If he does so from a supposition that the glazing coat is a species of varnish, then we fully concur with him that it would be better unglazed, as it may be supposed the coat given to each grain must somewhat delay its ignition; but if this glazing be nothing more than black lead, in which the powder is rolled like glazing of shot, then it cannot hurt it.

2382. *On the force with which gunpowder acts on resisting bodies*, Mr. Babbage offers the following thoughts in his *Economy of Machinery;* and as it bears very much on our subject, we shall give it in his own words: — " If a gun be loaded with ball, it will not kick so much as when loaded with small shot; and amongst different kinds of shot, that which is the smallest causes the greatest recoil against the shoulder. A gun loaded with a quantity of sand, equal in weight to a charge of snipe-shot, kicks still more. If, in loading, a space is left between the wadding and the charge, the gun either recoils violently, or bursts. If the muzzle of a gun has accidentally been stuck into the ground, so as to be stopped up with clay, or even with snow, or if it be fired with its muzzle plunged into water, the almost certain result is that it bursts. The ultimate cause of these apparently inconsistent effects is, that every force requires *time* to produce its effect; and if the *time* requisite for the elastic vapour within to force out the sides of the barrel, is less than that in which the condensation of the air near the wadding is conveyed in sufficient force to drive the impediment from the muzzle, then the barrel must burst. It sometimes happens that these two forces are so nearly balanced that the barrel only swells, the obstacle giving way before the gun is actually burst. The correctness of this explanation will appear, by tracing step by step the circumstances which arise on discharging a gun loaded with powder confined by a cylindrical piece of wadding, and having its muzzle filled with clay, or some other substance, offering a moderate degree of resistance. In this case the first effect of the explosion is to produce an enormous pressure on every thing confining it, and to advance the wadding through a very small space. Here let us consider it as at rest for a moment, and examine its condition. The portion of air in immediate contact with the wadding is condensed; and if the wadding were to remain at rest, the air throughout the tube would soon acquire a uniform density. But this would require a small interval of time; for the condensation next the wadding would travel with the velocity of sound to the other end, from whence, being reflected back, a series of waves would be generated, which, aided by the friction of the tube, would ultimately destroy the motion. But until the first wave reaches the impediment at the muzzle, the air can exert no pressure against it. Now, if the velocity communicated to the wadding is very much greater than that of sound, the condensation of the air immediately in advance of it may be very great before the resistance transmitted to the muzzle is at all considerable; in which case the mutual repulsion of the particles of air so compressed, will offer an absolute barrier to the advance of the wadding. If this explanation be correct, the additional recoil, when a gun is loaded with small shot or sand, may arise in some measure from the condensation of the air contained between their particles; but chiefly from the velocity communicated by the explosion to those particles of the substances in immediate contact with the powder being greater than that with which a wave can be transmitted through them. It likewise affords a reason for the success of a method of blasting rocks by filling the upper part of the hole above the powder with sand, instead of clay rammed hard. That the destruction of the gun-barrel does not arise from the property possessed by fluids, and in some measure also by sand and small shot, of pressing equally in all directions, and thus exerting a force against a large portion of the interior surface, seems to be proved by a circumstance mentioned by Le Vaillant and other travellers, that, for the purpose of taking birds without injuring their plumage, they filled the barrel of their fowling-pieces with water, instead of loading them with a charge of shot. The same reasoning explains a curious phenomenon which occurs in firing a still more powerfully explosive substance. If we put a small quantity of fulminating silver upon the face of an anvil, and strike it slightly with a hammer, it explodes; but instead of breaking either the hammer or the anvil, it is found that that part of the face of each in contact with the fulminating silver is damaged. In this case the velocity communicated by the elastic matter disengaged may be greater than the velocity of a wave traversing steel; so that the particles at the surface are driven by the explosion so near to those next adjacent, that when the compelling force is removed, the repulsion of the particles within the mass drives back those nearer to the surface with such force, that they pass beyond the limits of attraction, and are separated in the shape of powder. The success of the experiment of firing a tallow candle through a deal board would be explained in the same manner, by supposing the velocity of a wave propagated through deal to be greater than that of a wave passing through tallow."

2383. *Experiments to determine the strength of gunpowder* are frequently resorted to, and such experiments have been much varied. The chemical analysis for the purpose of ascertaining the relative quantity and quality of saltpetre as an essential component, as conducted by Bishop Watson, leads to the conclusion that it is the great disposition in nitre to absorb moisture from the air that is so injurious to all gunpowder, when not wholly excluded from atmospheric influence. The more pure, however, the nitre, that is, the less it is mixed with common salt, as is too frequently the case, the less will be its tendency to become damp. Good gunpowder, as we know, is instantly ignited, and its expansive force is in proportion to the instantaneous communication of the fire throughout the mass, The ignition of good powder when sufficiently rapid may tinge the pan with a golden hue, but it will leave little or no dross; and thus, when gunpowder is not originally good, or has been acted on by the air, then the pan of the lock is furred with feculæ, and such appearance should be marked by the wary sportsman, and it will serve him as an *epreuvette.*

2384. *The government proof of gunpowder,* as made by the Board of Ordnance, is said to be as follows:—"The triers first take out of the several barrels of gunpowder a measure full, of about the size of a thimble, which is spread upon a sheet of fine writing paper, and then fired: if the inflammation be very rapid, the smoke rises perpendicular; and if the paper be neither burnt nor spotted, it is then judged to be good powder. Then two drachms of the same powder are exactly weighed, and put into an epreuvette; which, if it raises a weight of twenty-four pounds to the height of three inches and a half, is received into the king's magazine as proof." Count Rumford's plan for the purpose, as detailed in the *Philosophical Transactions,* vol. lxxi. may also be referred to by the inquisitive reader; but he should still take this caution with him in his researches on this subject, that accidental circumstances are likely to vary the testing of it, however uniformly the experiments may be conducted, particularly that of the present state of the atmosphere.

2385. *The common instrument called the epreuvette, or trier* (*fig.* 363.), seen in every gunsmith's shop, is unquestionably of some service in ascertaining the strength of moderate quantities of gunpowder; but it cannot be depended upon when much nicety is required, or any large weight is to be tried. There are but few epreuvettes which are made on such principles as will test the quality of powder satisfactorily. Colonel Hawker observes, "In the best the wheel on which the gradations are marked is large, and the spring strong; consequently, the resistance to the force of the powder is considerable. The stronger the trier is, the better; for without the resistance is strong, a correct proof cannot be obtained; because, if not sufficiently strong to detain the powder in the chamber long enough for all the particles to ignite, many of them (especially in powder of good firm grain) will fly off unburnt, and, of course, a part only of the charge would be proved. The part attached to the wheel of the epreuvette, which shuts the mouth of the chamber, should be so nicely adjusted, that, on looking closely at the parts when in contact, no light can be seen between them; for, if any light is to be seen, there is of course so much vacancy, and consequently so much windage; and, in proportion to the windage, the proof will be lower, and therefore incorrect. Three fires at least should always be made in proving, and the average taken is the mean amount; for variations frequently happen in fires immediately following each other, although made with considerable attention. Care should be taken, after every fire, to clean the chamber thoroughly; or otherwise the foulness left by the preceding discharge would lessen the space by which the succeeding charge would become proportionably less." (*Ibid.* p. 100.)

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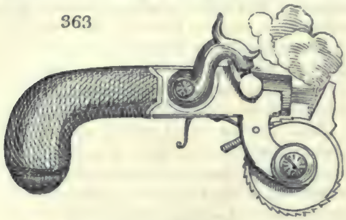

POWDER TRIER.

2386. *The Oakleigh Shooting Code is smart, and very justly so,* on the retailers of gunpowder, and on those sportsmen also who furnish themselves from such questionable sources. Their powder may be good originally, but their care of it after it has come into their possession is another matter. "Thus, the Dartford gunpowder," says the *Code,* "bought from one retailer will fire smart and strong, while a similar article obtained from another will be comparatively weak, and slow of ignition. This difference in the quality of powder is occasioned by exposure to different atmospheres. Gunpowder is generally purchased by the shooter at a provincial town at some distance from the manufacturers. One shop or warehouse is dry; another is damp One package of powder may have lain only twenty-four hours in the front boot of the London mail, in July, to the imminent dange of the cigar-whiffer on the coach-box; another may have been sweating three weeks in canal-boat, in March: hence, the various degrees of liability to imbibe moisture before th powder comes into the retailer's possession, and while in his keeping. Damp not onl affects the nitre, of which gunpowder is chiefly composed, and thereby occasions loss o strength, but it also operates prejudicially on the ingredients which contribute to the instantaneous ignition." (*Ibid.* p. 72.)

2387. *Gunpowder should be bought in canisters only*, and as fresh as possible: when also it can be got direct from the makers, there is the greater chance of its being not injured by moisture. In the keeping of the sportsman, we again repeat, that it should be carefully excluded from the air. The common tin case, however closely papered, is not sufficient for the purpose, unless it be made waterproof, and closed either by a soft velvet cork, or a fine threaded screw; the former is preferable. Our own powder we divided and packed into distinct smaller bottles, each containing about four ounces; which being corked and sealed, prevented our exposing more than was wanting for each day's consumption. We knew a crack shot who, when the atmosphere was damp, would not trust his powder to his flask, but preferred a two-ounce phial, secured with a strong leathern coating, and corked. He said that he experienced by this plan such a superiority in the strength of his powder, on particular occasions, as in damp weather, to amply repay him for his trouble.

2388. *The more eminent manufacturers of gunpowder* are well known, and it is hardly necessary for us to observe, that the sportsman should be careful to buy none but that which is made by such. We have ourselves shot with the powder of each; and we, as well as others, have had our partialities; but, like others, when things went wrong, we more often found that the fault was rather in ourselves, than in either the gun, gunpowder, or shot. The powder manufactured by Pigou and Andrews is excellent, and is preferred by many to all others. Messrs. Lawrence and Son also still maintain the high reputation of the Battle powder, as Messrs. Curtis and Harvey shine in the well known cylinder powder; nor must we omit to notice, that at a late series of experiments at the Hounslow Mills, the results fully confirmed Colonel Hawker's favourable opinion of this powder. He also lauds Mr. Burton's powder, sold at 69. Old Broad-street.

Subsect. 2. *Percussion Gunpowders.*

2389. *The application of these powders in priming of guns* has nearly revolutionised the sportsman's system of gunnery. The nature and properties of detonating substances were comparatively but little known until of late years, when chemistry had more widely opened her stores to the zealots who pursued her. We will therefore commence the subject of fulminating, percussion, or detonating substances, as used for inflaming of gunpowder, by reminding the reader, that the first fulminating powder was composed of oxymuriate of potash, fine charcoal and sulphur in various proportions; but a common one was as follows, — To any given quantity of the first article, add one-eighth of the second, and one-sixteenth of the third.

2390. *The chlorates are thus remarked on by Dr. Turner*, as having been employed for the purpose of priming guns: — "The salts of chloric acid are very analogous to the nitrates;" and he continues, — "as the chlorates of the alkalies, alkaline earths, and most of the common metals, are composed of one equivalent of a protoxide, M X C C, it follows that the oxygen of the latter to that of the former is in the ratio of one to five. The chlorates are decomposed by a red heat, nearly all of them being converted into metallic chlorides, with evolution of pure oxygen gas. They deflagrate with inflammable substances with greater violence than nitrates, yielding oxygen with such facility that an explosion is produced by slight causes. Thus a mixture of sulphur with three times its weight of chlorate of potassa explodes when struck between two hard surfaces: with charcoal and the sulphurets of arsenic and antimony, this salt forms similar explosive mixtures: and with phosphorus it detonates violently by *percussion*. One of the mixtures employed in the percussion-locks for guns consists of sulphur and chlorate of potassa, with which a little charcoal or gunpowder is mixed; but as the use of these materials is found corrosive to the lock, fulminating mercury is now generally preferred." (*Turner's Elements of Chemistry*, 5th ed. p. 713.)

2391. *Fulminating mercury*, which forms the percussion powder at present in use, is principally indebted for its discovery to Mr. Howard, the particulars of which may be met with at large in the *Philosophical Transactions*, *Pantalogia*, &c. &c. An excellent condensed account of the chemical properties and method of manufacturing this powder in Dr. Ure's *Chemical Dictionary* is as follows: — "A hundred grains of mercury are to be dissolved by heat in an ounce and a half by measure of nitric acid. This solution being poured cold into two ounces by measure of alcohol in a glass vessel, heat is to be applied till effervescence is excited. A white vapour undulates on the surface, and a powder is gradually precipitated, which is to be immediately collected on a filter, well washed, and cautiously dried with a very moderate heat. This powder detonates loudly by gentle heat, or slight friction. Should any attempt be made to make this powder in any considerable quantity, the process must be conducted accordingly." The fulminating mercury (we gather from the same authority) should be moistened with thirty per cent. of water, then triturated in a mortar, and hereafter mixed with the sixth part of its weight of gunpowder. Matches, caps, &c. thus made resist damp, and do not corrode the instrument which contains the powder. They will even take fire after several hours' immersion in water, whereas the priming powder, made with chlorate of potash, sulphur, and charcoal, attracts moisture speedily, and corrodes every metal it comes in contact with, consequently is injurious to the gun it is used with. The Parisian percussion caps are all of them thus made, and are sold at the rate of six francs the thousand. The *Bulletin des Sciences Militaires* states, that the cap-match is made thus: — "Having triturated ten parts of fulminating mercury on a marble slab with water by means of a wooden muller, add six parts of gunpowder, and grind the two together." Of these military cap-matches, each, it is said, contains one grain and a quarter of fulminating mercury with six-tenths of that weight of cannon powder. Dr. Ure however remarks, that some of the best match-powders made in France are much lighter, and do not weigh altogether above two-thirds of a grain.

2392. *Fulminating products may also be gained from both gold and silver*, when under the influence of muriatic and nitric acids. These as detonating substances, however, being not equally manageable, and much more expensive than what are obtained from mercury, we shall pass over without further notice. The curious reader may however find them detailed in the works of the authors we have quoted. Having thus far discussed the history, properties, and method of manufacturing these gunpowders, we will now proceed to the examination of the gun itself.

CHAP. II.

FIRE-ARMS GENERALLY.

2393. *The antiquarian would carry the use of artillery back to the time of Moses*, and would impress on us the circumstance of the finding of old cannon in India by Alexander the Great, the date of which had however been long lost. Norton, as observed before, p. 720., quotes Uffano to prove that the use of fire-arms both large and small, was common throughout the Chinese empire as early as the fifty-eighth year of our Lord; stating also that the remains of ordnance, both large and small, bearing the impress of King Vitney, may yet be met with. We will however not stop further to examine into the antiquity of fire-arms, but content ourselves with recording a simple fact, in corroboration of the immense importance of the discovery to man as a belligerent, at whatever period it took place. It is well ascertained that the effects of the mighty battering ram of the ancients, which weighed 42,000 lbs. and was worked by 1000 men, did no more execution in a bombardment than a point-blank shot with a ball of 36 lbs.

2394. *Cannon*, whatever may be their real antiquity, were however little known among us until the early part of the fourteenth century. One notice of them states that they were used, under the name of bombards, by Edward III. against the Scots. At this time they appear to have been rudely shaped, and wide at the mouth like a mortar, but contracted behind; and it is further stated, that the shot used for them were of stone. Hand cannon were next seen of a size which admitted of their being carried between two men; but it would seem that all the artillery then in use must have been of foreign manufacture; for it is confidently stated that cannon were not cast in England until the reign of Henry VIII., when two aliens were employed for the purpose, "before which time such were imported from other countries." In the reign of this prince, and that of his successor Elizabeth, it seems that much care was taken to improve the artillery of the country; for not only were the best foreign workmen employed, but the parliaments of those days regulated the sizes of the pieces, and also the quality of the metal they were made of, which was, as we believe, a mixture of copper and tin. To hand cannon succeeded the *hand gonne*, which, although often confounded with hand cannon, yet being so light and portable as to be carried in the hand, and fired by one man only, was evidently an entirely different instrument. It is not to our present purpose, however, to trace the origin of the larger pieces of artillery, but to confine ourselves to the smaller varieties of fire-arms, which, though originally intended for human warfare, yet being at length diverted to sporting practices, are entitled to our particular attention. Ere we terminate this subject, we will notice the ingenious invention of Mr. Perkins, an American, who has proposed to employ the elastic force of water converted into steam for the purpose of propelling bullets; and the power of the apparatus must of necessity depend on the intensity of the heat which is employed. A small cannon was constructed, which, when connected with the generator or boiler, has been found to discharge ordinary musket bullets at the rate of 240 in the minute, and with such tremendous force, that, after passing through an inch deal, the ball, in striking against an iron target, became flattened on one side and squeezed out. The original size of the bullets was 0·65 of an inch; but, after striking the target, they were plane-convex, and their diameter 1·070 inches, and 0·29 of an inch thick.

2395. *The hand gun, or gonne*, as then written (*fig.* 364.), was of this kind, and is said to have been invented by Billius, a Milan nobleman. It is described as an iron tube (*a*), affixed to a club or rude stick (*b*). A hollowed part near the breech or base (*c*), receives the priming powder; but this hollow having no cover, leaves the weapon extremely inefficient; to obviate which defect, in the reign of Henry VI., a small priming pan was attached. As may however be supposed, it yet remained, even with this addition, by no means very effective either for attack or defence; to remedy which a small battle-axe (*d*), was added, which each soldier carried in a pouch at his side (*e*), and which being removed from thence and inserted within the muzzle of the hand gun, afforded him additional means, both offensive and defensive. When we consider how wonderfully the means of destructive warfare among contending armies are now increased, we look with surprise that the work of annihilation is not now so extensive as formerly. It must be thus accounted for, because the means of attack and defence are now more nearly equalised, which some appear to lament on philosophical principles, arguing that destructive warfare is actually a blessing, as it protracts the horrid period when man must eat man, or otherwise starve.

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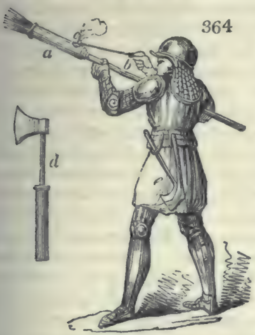
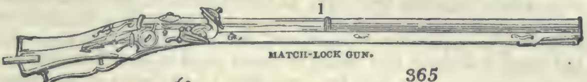


HAND GUN.

2396. *The stocked gun formed the next important improvement.* Here the barrel was seen much lengthened and embedded in a wooden stock, which was at first straight; but further consideration having suggested the advantages of better aim and lessened recoil by curving the line, a bent stock was employed. It being, however, quite evident that to inflame the powder with which the gun was loaded and primed, some ignitible matter should be applied to the touch-hole, which human ingenuity was to devise the means of readily inflaming, and which was soon supplied by the addition of a lock to the barrel.

2397. *The match-lock and wheel-lock guns* (*fig.* 365.) were next seen. The match-lock (1), was first used, by which a lighted match placed within its jaws was brought into contact with the priming by means of a spring-trigger. The wheel-lock gun (2) formed the next step in the march of gunnery; that represented in our cut having been, as it is said, made in the reign of Elizabeth; and although we must allow that, by comparison, it was thus rendered both more convenient and effective in war, it nevertheless progressed little towards becoming a sporting article. This carabine was fired by means of friction, gained by a notched wheel passing rapidly over the edge of a flint. It was necessarily made massive to overcome the resistance offered by two such substances opposed to each other as flint and steel; consequently the wheel required to be wound up for action by what was called a spanner. We shall close our slight sketch of the manufacture of fire-arms, by dividing them into five steps: 1st, The ignition of the gunpowder by a match held in the hand; 2dly, By the aid of a match-lock; 3dly, By means of a wheel-lock; 4thly, By the flint-lock; 5thly, By the percussion-lock.



MATCH-LOCK GUN.

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WHEEL-LOCK GUN.

SECT. I. *The Gun, or Fowling-piece.*

2398. *The word gun is of doubtful etymology*, and the critical origin of the term seems as obscure as its types are numerous. The *Encyclopædia Britannica*, on the word GUN, observes, — "Some derive it from the French word *mangon*, which was a warlike instrument used before the invention of the gun now employed; and employed in discharging arrows and other missiles, before the invention of gunpowder. Others derive it from *gyn*, an engine employed for similar purposes. Selden says, "The word gun was in use in England for an engine to cast a thing from a man, long before there was any gunpowder found out." Fire-arms however, we know, were introduced into this country about the year 1471; and were used at the sieges carried on in Europe in 1521. In the time of Henry VIII. and his successor Elizabeth, as already observed, the size and shape of fire-arms were regulated by parliament; but the mode of firing them was still by a direct application of fire by hand, or by machinery; the firing of guns, therefore, by means of the flint-lock is a modern invention. The balls also at first were not made up into cartridges along with the powder, but were carried in a separate purse or bag, and the powder by itself in a horn or flask. To insure certainty of firing, a finer kind of powder was used for priming than for the ordinary charge of the gun; and this priming powder was carried by itself, in what was called a touch-box. Most of the guns, when first used as warlike instruments, were so heavy, that they could not be held out and fired from the shoulder, as in modern times. The soldier, therefore, was provided with a rest, which he stuck into the ground, and upon which he laid his gun, and took a deliberate and steady aim. The rests were shod with iron, to preserve them from decay, and that they might the more easily penetrate the ground; and were of different lengths, according to the height of the man using them. The addition of the bayonet to the gun was not made earlier than 1671, being first used by the French about that time. It derives its name of bayonet from Bayonne, a town in the south of France, where that instrument was first made. Few practical arts have made more rapid advancement than that of gun-making. The competition amongst the gun-makers has been very great, and they have arrived at a degree of perfection which it would seem to be impossible to surpass. Almost every great town in England, Scotland, and Ireland, as well as on the Continent, has large establishments for carrying on this beautiful and ingenious branch of manufacture. Judging of the perfection of the art by the expense of the article, we might be led to conclude that gun-making had reached the *acmé* of perfection. It has been no uncommon thing to pay 50, 60, or even 70 guineas for a best London-made gun. The Continent has even gone before us in this respect, for we are told that, when Napoleon was in the plenitude of his grandeur, he established a gun manufactory at Versailles; and we are informed that pistols were there made at 10,000 livres, or 400*l.* sterling each, and guns at 50,000 livres, 2000*l.* sterling. Of these the first consul often made presents to foreign princes, to general officers, and other favourites. The Marquis of Rockingham, it is also said, gave to Colonel Thornton a fowling-piece which cost 400*l.*; and that Messrs. Robert and John Wheeler, gun-makers, of Birmingham, presented George IV. with a gun of the most exquisite workmanship, which cost 300 guineas.

2399. " *The principles of gunnery*," Mr. Greener remarks, "are but little known among the generality of sportsmen." "I do not deny," he continues, "their dexterity in shooting, the precision with which they take their aim, kill their bird, or hit their object, but they have little knowledge of the principle on which the gun is or ought to be constructed. The causes of accidents they are especially unacquainted with. Those causes are serious enough, God knows! but there is nothing that would so much tend to diminish their number, and, of consequence, to render accidents less frequent, than a knowledge of all those principles, in reference to which the gun is constructed." (P. 11.) These observations are extremely just, and worthy the attention and remembrance of every one carrying a gun; and if we are found to dilate somewhat on the subject, the reader may be assured we do not do it to swell our pages; on the contrary, we heartily wish we could circumscribe them with justice to the subject. But we repeat, we are forced into so much detail, as will enable him to judge between the good and the bad, the safe and the unsafe. The importance of this must be evident, when it is considered that a bad gun not only mars the sportsman's hopes, but also endangers both life and limb. Neither is it prudent in any person even to trust himself in the company of a shooter who has, without a sufficient trial, furnished himself with a gun from some one of the cheap or equivocal sources from whence guns are sometimes obtained, such as hardware shops, pawnbrokers, &c. When, however, a gun has been thus bought, by all means let it be *proved* at a proof-house before using, if the purchaser has any regard for his safety. Were the substitution of charcoal iron for the real stub-twist iron, the head and front of the offending of the makers and vendors of these guns, it would be well; but many of those sold at these markets, and by inferior gun-makers also, are forged, we believe, from skelp iron; and if Mr. Greener, himself a scientific and eminent gun-maker, is correct, which we have no reason to doubt, some of these, and particularly those met with in hardware shops, are even forged from Wednesbury skelp, a still lower grade of metal. If such be the case, what can be expected but bursting barrels, snapping locks, and broken stocks? Indeed, these assertions of Mr. Greener need no further proof than the fact, that showy guns can be bought in Birmingham, at "first hand," at the rate of 4 guineas the double, and 50*s.* the single barrel. What risks are, therefore, every day run by the unwary, who, deceived by showy appearances, and tempted by what seems a low price, compared with what some give, make purchase of such articles. Nor do we hardly know a more mortifying situation to the unfortunate purchaser of such an article, than that which he experiences when *showing it up* at a *meet* with some one or two well informed sportsmen, "up to the mark" in all that relates to field gunnery: instead of being complimented on his new bought purchase, he is apprised that he is "taken in;" and, furthermore, is requested, for safety to them while beating for game, to let there be at least one hedge between him and them. We, however, would console him, by showing how to avoid both danger and disgrace, which is by having, as before stated, his new purchase proved at a proof-house, he being himself present; when, if the result is fortunate, and his gun, moreover, performs well in the field, the laugh will then be on his own side.

Subsect. 1. *The Gun-barrel.*

2400. *Iron*, as is well known, is the principal component part in the manufacture of fire-arms; but of the thousands who would reply, "Well, does not every one know this?" how few, how very few, have any correct notion of the nature of iron; as to how it is formed, whence it proceeds, whether it be a simple substance, or a compound, &c. &c. When the vast masses of iron which enter into the structure of the iron bridges across the Thames, or support the pressure of the earth in our railways and aqueducts, astonish the spectator, they do nothing more, and the unreflecting mind little suspects that, as a native product, it is extremely rare. It is very seldom collected from below (*i. e.* in a native state), but is occasionally dropped from above; and meteoric iron has for ages been a stumbling-block to the uninformed. Nor is it altogether uninteresting to learn, that meteoric iron is always combined with nickel and cobalt. But to the point we have in view, of directing the attention to this vast agent in all the mechanics of life in which it forms so prominent a part; besides the larger masses we have adverted to, can we look around the humblest dwelling, or the princely palace, without meeting it at every glance? the polished stove, the steel-burnished fender and fire-irons, exhibited in the large, while every article of furniture is clamped, nailed, or bradded with it in the small; and so insidious is it, that it amalgamates with every thing; it forms a part of our ironstone china,—nay, more, it forms an integral portion of ourselves, and is said to roll about in our arteries and veins in little annular masses. So universal is its presence, that it pervades nearly all dead matter, and certainly all living matter, whether animal or vegetable; and yet, with the exception of meteoric iron, it is very rarely met with in a native or uncombined state.

2401. *Iron is procured from certain mineral substances*, which, as they hold it in combination in considerable quantities, are thence called *ores of iron*. These ores being first torrified and reduced to powder, are submitted to the action of coke or charcoal, and lime, at a high temperature. The carbon deprives the ore of its oxygen, and the lime, by fluxing the mass, forms all the impurities into a fusible refuse called slag. From this mass, the iron becoming separated, descends by its weight to the bottom, passes off by appropriate apertures, and is then the cast iron of commerce, from which state it is rendered malleable by a fresh exposure to heat, while a strong current of air is at the same time made to pass over its surface, after which it is exposed to very powerful pressure by rolling and hammering; and this, by approximating its particles, makes it tenacious in the extreme. Cast iron, as every one knows, is brittle; wrought iron, on the contrary, is adhesive, is easily bent, but breaks with difficulty; consequently is admirably adapted to gun-barrel making. And now, brother sportsmen, if you please, we will pursue it until we have forged a safe and effective *fowling-piece!*

2402. *Gun-barrels*, to be equally safe and effective, should be forged from the best Swedish iron, in its highest state of ductility and tenacity. It was these qualities in the metal of which the Spanish barrels were formed, that rendered them so prizable,—twenty, thirty, and even forty pounds having been given for a single barrel of this kind.

2403. *Spanish barrels*, it is well known, were manufactured from what are by iron forgers technically called scraps, but by the public are known as the stubs or stumps of the nails, which have been used in fastening on the shoes of the mules, asses, and horses of the country. Neither were its valuable properties wholly owing to the natural ductility of the iron from whence the shoe-nails were formed; it was also greatly indebted to its after treatment when in mass, which was so singularly laborious, if we can rely on what is related, that a melted mass of stubs has, by violent hammering, been reduced from forty or even fifty pounds to a quantity only sufficient to make a single barrel. Of the goodness of the Spanish barrels there is no doubt, but the general getting up of the gun was far behind our own; principally because one manufacturer supplied barrel, lock, stock, &c. Great however as was the labour bestowed on the Spanish gun-barrels, if we believe the accounts we receive, it was little when compared with that expended on the Damascus sword-blades. On these it is said that weeks, nay, even months, were spent in active hammerings of the metal, of which they were to be formed. Thus likewise to give a *temper* to minor articles, the blacksmith, with lusty arms and weighty hammer, plies the red-hot bar over and over ere he fashions it into a horse-shoe. The Spanish gun-barrel is likewise said to have owed some of its superiority to the following method used in its formation. Instead of framing the iron plate, so that it should overlap slightly at the point of juncture, the Spanish workmen added another complete turn or lap, so as to make the barrel, as it were, double throughout.

2404. *The Damascus barrel*, as well as the other articles of that famed manufactory of former days, and those of the present, are however very much altered in quality. The gun-barrels, scimitars, and sword-blades we used to receive from this noted repository, were wholly made of highly tempered iron and steel with extraordinary labour. The Asiatic sword-blades were even more highly tempered than any other of the Damascean wares: those which exhibited the highly prized oriental damask, it is said, were manufactured from what in India is termed *wooltz*, and in Turkey *taban*, produced, as we believe, from some artificial combinations of cast steel with carbon. To prove the highest state of tenacity and ductility to which the sword metal could be wrought, it was necessary that it should admit of being written upon with a piece of fine gold. When Syria, Persia, Hindostan, and Russia were served with their most beautiful arms from thence, it may be supposed that gun-barrels, scimitars, &c. were obtained from the same source by us also; and few among us but have seen these relics. The industry of our own traders, however, became on the alert to wrest both the secret of the composition of the Damascus metal, and the trade in arms made there, from the original makers. Mr. Adams of Wednesbury, who, we believe, professes to be in possession of the secret of preparing the Damascus iron, now carries on an extensive business on the faith of the public in this profession. It is hinted by Mr. Greener, that if Mr. Adams does really possess a knowledge of the true components, and of the processes of manufacturing them into Damascus iron, it was probably gained through the means of a letter, read before the Society of Arts in the year 1819, from Lieutenant-colonel Bagnold, of the army in India, in which the secret method of manufacturing this iron was detailed to his brother in England. We are however somewhat sceptical on this point; for certain it is that, however beautiful the barrels now called *Damascus* may be, and certainly as a toy they are so, yet in tenacity and the other qualities which marked the Damascus arms of former times, they are very inferior to our own twisted stub barrel of the present day; and it is doubtful if that even is now as good as it was some years ago. The beauty of the Damascus barrel of our manufacture is its bane; for its component parts of iron and steel do not amalgamate sufficiently to give the requisite strength to the mass, although they mottle it beautifully. The monopoly also of gun-barrel-making into two or at most into three hands, as Mr. Greener informs us is the case now, is much to be lamented. However respectable the character of those individuals may be, and as they appear by common report, yet the temptation is too great not to make us fear for the purity of the mixtures from whence even our best guns are forged.

2405. *The varieties of iron used to form gun-barrels* are greater than is generally supposed. We read of wire-twist iron used in the making Damascus barrels, Wiswould's iron, stub-twist iron, charcoal iron, threepenny and twopenny skelp iron, and sham-dam skelp. Of these several varieties, that known as twisted stub iron is the best, and indeed the only one on which implicit reliance can be placed; and then only when we can be assured that real stubs, the relics of the best Swedish iron, rendered tough by long pressure, were employed in its composition. When, however, we descend to a lower material than real stub-twist, we fear that the more common iron mixtures are substituted, which, though of some reputation, are not to be implicitly relied on for either ductility or tenacity. We may be observed to write as having some *doubts* on the probability of procuring the real stub-twist barrel, which arises from our knowledge of the difficulty of meeting with the real stubs of former days. We however must console ourselves with the reflection, that, although stub-scraps are now difficult to procure, it yet appears that our best manufacturers do overcome this difficulty somehow; and that those who will pay a good price, we believe, can command a real stub-twist gun from any one of our reputed makers; although we still should fear its being not quite equal to those of former periods. What we would suggest is, that as the material of which the stub-twist barrel is formed is neither in such plenty nor yet equally good in quality, it requires the purchaser to make assurance double. Mr. Adams, a principal manufacturer of gun-barrels, informed Mr. Greener that the scarcity of real stubs is so great at home, that the foreign market is obliged to be resorted to to obtain them: but even there, we fear, the cloven foot has crept in; for there also stubs are not only dearer, but neither are they so good as formerly. The rage for underselling has deteriorated the article from its outset, the competition being, not who shall furnish the best, but who can, by any means, be able to sell at the cheapest rate. It is too well known, likewise, that our own horse-shoes of the present day, and the nails also which fasten them, are few of them made from the best Swedish iron, but from what is called malleable cast iron. Such therefore is certainly the present state of the manufacture of gun-metal, consequently many of those guns now placed before the public are calculated to deceive all who have not taken the pains to inform themselves of the distinctive marks between the bad, the indifferent, and the good. We seek not to depreciate the British manufacture of guns universally; on the contrary, under all the disadvantages pointed out, we are nevertheless confident that the advancement of science has overcome many difficulties, and rendered harmless many substitutions, particularly when such are founded on a practical knowledge of the nature and properties of iron under its several modifications and intermixtures. These advancements will overcome many difficulties, and will therefore continue to enable the honourable and scientific manufacturers of our country still to furnish us with safe and effective fire-arms.

2406. *A method of discovering spurious gun-metal from the real stub-twist,* Mr. Greener observes, may be resorted to by the following test:—" Require the gun-maker to stain the barrel under examination with the smoke-brown" (a modern invention of staining, the description of which is given in another part of his book), " and he will not be able to accomplish it, if the barrel be not genuine; whereas nothing is easier if it be really made of stubs twisted. The matter may be thus explained: hydrogen gas acts only on iron, steel resists its action; so that, when a barrel is properly finished, the steel remains quite bright, while the iron has become a beautiful jet-black, which will be easily recognised by attention to the appearance;" which appearance is exemplified by a figure at p. 29. of his work. We have also added two cuts, which may assist the judgment of the inquisitive sportsman, with regard to the quality of the metal of the guns which may be placed before him in a gun-repository. *Fig.* 366. 1. represents the close spiral twistings of the grain of the metal of the *stub-twist barrel.* *Fig.* 2. presents to the eye the coarse and disgregated twistings and imperfect mixture of the metals of the inferior barrels, known among gunsmiths as "the twopenny iron, or Wednesbury skelp barrel."

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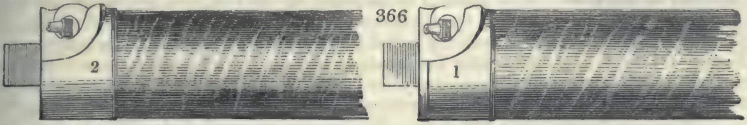

TWOPENNY IRON BARREL. STUB-TWIST BARREL.

2407. *The method of making gun-barrels* is thus stated in the *Encyclopædia Britannica,* under the article Gun-making. A somewhat similar account, less perspicuous, but much more detailed, may be met with also in the essay on *Shooting*:—"Having fixed, in the first place, on the size of the gun, and ascertained, as near as may be, the width of the bore, and the length and thickness of the barrel, the next thing the forger does is to take a portion of the metal of which he is to make the barrel, and to form it into the shape of a thin flexible bar, something like a cooper's hoop; this bar or hoop must not be all of the same thickness, but that part of it which is to be towards, and is to form the muzzle of the piece, must be thinner than that which is intended to form the breech. An instrument called a mandril is then chosen, according to the size of the intended bore of the gun. The flexible bar, or hoop, is then heated, so as to make it ply easily, and is turned round the mandril, much in the same way as a riband of leather is turned round the handle of a whip. The edges of the hoop of iron, however, are made to overlap one another a little; so that, when welded, all their joinings may be compact and solid, and no slackness appear where the lips of the bar or hoop touch one another. When the metal has acquired its proper heat, and the weldings are properly executed, the places where the bars overlapped each other are quite imperceptible; and the barrel appears as though it had been made out of one piece, and finished at one heat." The mode of making the twisted barrel, we believe, does not differ materially from that of the common gun now described. The welding of both is the same; the hammering the same; the horizontal stroke, called the *jumping,* is the same; and they are both wrought on a mandril in the same manner. They differ in this, however, that in the common gun the hoops are broad, overlapping one another considerably, having their edges welded down upon one another; and, when finished, have the appearance of one continuous piece of plain iron. The bars of the stub-twisted barrel, on the other hand, do not in general exceed half an inch in breadth, and their edges do not overlap, but are just laid close together, and, when thus welded, the barrel receives horizontal strokes on the anvil, which make their joints swell up or protuberate, and then are hammered down, and thus made to form a compact and solid union, which the ductility of the component matter of the stub iron allows of. When the bars employed are very fine and small, it is called a *wire-twist,* and presents the appearance observed in No. 1. of *fig.* 366., and, consequently, this ready distinction between the indifferent metal and the good should be fixed in the memory.

2408. *The boring of guns,* according to Dr. Ure, in his excellent *Dictionary of Arts and Manufactures,* is thus performed:—"A barrel properly annealed, and slowly cooled, is now ready for the borer, which is an oblong square *bit* of steel, pressed in its rotation against the barrel by a slip of wood applied to one of its flat sides, and held in its place by a ring of metal. The boring-bench works horizontally, and has a very shaky appearance, in respect at least of the bit. In some cases, however, it has been attempted to work the barrels and bits at an inclination to the horizon of 30°, in order to facilitate the discharge of the borings. The barrel is held in a slot by only one point, to allow it to humour the movements of the borer, which would otherwise be infallibly broken. The bit, as represented by *a, fig.* 367. has merely its square head inserted into a clamp-chuck of the lathe, and plays freely through the rest of its length.

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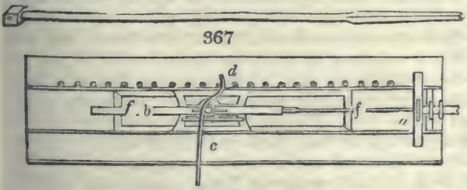

GUN BORER.

2409. "*The square machinery* represents in plan the *boring-bench* for musket-barrels; *ff* is the sledge or carriage frame in which the barrel is supported; *a* is the revolving chuck of the lathe, into which the square end of the bit, is inserted; *b* is the barrel, clamped at its middle to the carriage, and capable of being pressed onwards against the tapering bit of the borer, by the bent lever *c*, worked by the left hand of the operative against the fulcrum knobs at *d*, standing about two inches asunder. Whenever the barrel has been thereby advanced a certain space to the right, the bent end of the lever is shifted against another knob or pin. The borer appears to a stranger to be a very awkward and unsteady machine, but its perpetual vibrations do not affect the accuracy of the bore. The opening broach may be of a square or pentagonal form, and either gradually tapered from its thickest part, or of uniform diameter, till within two inches of the end, whence it is suddenly tapered to a point. A series of bits may be used for boring a barrel, beginning with the smallest and ending with the largest. But this multiplication of tools becomes unnecessary, by laying against the cutting part of the bit slips of wood, called spales, of gradually increasing thickness, so that the edge is pressed by them progressively further from the axis. The bore is next polished. This is done by a bit with a very smooth edge, which is mounted as above with a wedge of wood besmeared with a mixture of oil and emery. The inside is finished by working a cylindrical steel file quickly backwards and forwards within it, while it is revolving slowly. In boring, the bit must be well oiled or greased, and the barrel must be kept cool by water trickling on it; as the bit, revolving at the rate of 120 or 140 times a minute, generates a great deal of heat. If a flaw be detected in the barrel during the boring, that part is hammered in, and then the bit is employed to turn it out. Whatever irregularities appear, must be immediately removed. The outer surface of the barrel is commonly polished upon a dry grindstone, but it is better finished, and less dangerously to the workman, at a turning lathe with a slide rest. If a stone be used, it should be made to revolve at the mouth of a tunnel of some kind, into which there is a good draught to carry off the ferruginous particles. A piece of moist cloth or leather should be suspended before the orifice."

2410. "*The Parisian gun-makers*," Dr. Ure informs us, "are reckoned very expert; they draw out the iron for the barrels at hand forges, in fillets only one-ninth of an inch thick, one inch and a half broad, and four feet long. Twenty-five of these ribands are laid upon each other, between two similar ones of double thickness, and the bundle weighing sixty pounds, bound with wire at two places, serves to make two barrels. The thicker plates are intended to protect the thinner from the violence of the fire in the numerous successive heats necessary to complete the welding, and to form the bundle into a bar two-thirds of an inch broad, by half an inch thick; the direction of the individual plates relatively to the breadth being preserved. This bar, folded flat upon itself, is again wrought at the forge, till it is only half an inch broad, and a quarter of an inch thick, but the plates of the primitive ribands are now set perpendicular to the breadth of the narrow fillet, the length of which must be fifteen or sixteen French feet (sixteen or seventeen English), to form a fowling-piece from twenty-eight to thirty inches long. This fillet, heated to a cherry red in successive portions, is coiled into as close a spiral as possible, upon a mandril about two-fifths of an inch in diameter. The mandril has at one end a stout head for drawing it out, by means of the hammer and the grooves of the anvil, previous to every heating. The welding is performed upon a mandril introduced after each heat; the middle of the barrel being first worked, while the fillets are forced back against each other, along the surface of the mandril, to secure their perfect union. The original plates having in the formation of the ultimate long riband become very thin, appear upon the surface of the barrel like threads of a fine screw, with blackish tints to mark the junctions. In making a double barrelled gun, the two are formed from the same bundle of slips, the coils of the one finished fillet being turned to the right hand, and those of the other to the left. The Damascus barrels forged as above described, from a bundle of steel and iron plates laid alternately together, are twisted at the forge several times, then coiled and welded as usual. Fifteen Parisian workmen concur in one operation: six at the forge; two at the boring mill; seven at filing, turning, and adjusting; yet all together make only six pairs of barrels per week, which are sold at from 100 to 300 francs the pair, ready for putting into the stock." When we were in Paris we visited some of the best gun-manufactories, and by making use of the name of a member of the Institute, as we were by him authorised to do, we were very courteously received by all, and every process was explained—many were exemplified on the spot. They certainly differed somewhat from those of Birmingham, but they were fast treading on their heels in point of inferior mixtures of metals for their barrels. They candidly confessed it was in vain to compete with us in lock finishing, not because *they* were *unable* to do it, but because the *French gentry* were unable to pay a remunerating price for them. For a more detailed account of the different mixtures of metals and the various processes employed in the modern manufacture of gun-barrels, we would refer to Mr. Greener's valuable work. As a prelude to our own farther remarks on them, we beg leave to observe that the *bore*, the *caliber*, and the *gauge* of a gun-barrel are synonymous terms, each being equally used to denote the dimensions of its cavity. Thus, when we notice the length of a gun-barrel, it is usual to describe its capacity of receiving the contents of its loading by one of these terms. It is thus that a barrel of thirty-two inches in length and sixteen in gauge, may be said to be well proportioned. The *gauge* being noted by the number of bullets (one of which exactly fitting the bore) would be required to weigh a pound."

2411. *A polished bore, is it desirable or not?* Many high-priced gun-barrels from Spain are very finely polished, and we have seen some equally so of English manufacture, the makers of which have dwelt on their superior value, as not suffering any lead to be caught from the passing shot. We, however, can aver from our own experience, that unless the metal of the gun be almost steel itself, polishing will not prevent its leading. Monsieur de Marolles, one of the principal authorities on these subjects, denies any benefit to be derived from the lessened resistance offered to the exit of the shot by the highest polish that can be given; averring in proof, that he has seen a barrel rough from the borer throw a charge of shot deeper into a quire of paper than another barrel that was highly polished within, the bore and charge being the same in both. However agreeable it may be to the eye to see the light playing over the whole internal surface of the gun-barrel, some are purposely roughened by being, as it is termed, ring-bored, *i. e.* circularly ribbed within to create friction; and though such barrels lead much, yet they often shoot remarkably close. Indeed it is averred by partisans of this plan, that they put the majority of the grains of shot into a disk, of the size of a man's hat, at forty yards. Guns of this kind are common among the colliers, and are so made to shoot for prizes; but as far as our own experience goes, no method of close prize shooting is equal to that of charging the gun by dropping the shot into the barrel, a few at a time, wrapped up in a little flax or tow, repeating the same until the whole charge is thus disposed of. We have heard of a prize-shooter who oiled his shot for the same purpose, and, as it was said, with much success; while others have wetted theirs. But it must be remembered that this practice is only adopted for *still-mark shooting.* The recoil is greatly increased by these means; and it is even said that the friction retards the velocity of the shot to such a degree, that a bird would escape; but this we are inclined to doubt. The barrel also in some of these prize-shooting guns, besides its ring-boring, is rather conical than cylindrical, with its base at the breech, and its apex at the muzzle. The *black diamond* gentry in the north are very expert at this species of shooting, and at the same time they are careless of the extreme risk they run.

2412. *The barrel is next tapped for breeching,* by which is meant the process of adding the breech-plug to it; the method of doing it being thus stated by Mr. Greener, who, it may be premised, prefers *tapping* to turning the screws by means of lathes, as being by much the strongest method:—" The female breech, after being tapped, is screwed into the barrel to its place, and a tool, called a grinder, is introduced into the tube of the other barrel, and by being turned, either by the lathe, or by a brace, it cuts away that part of the female breech required to allow the male breech, when turned to a corresponding size, to fix in neatly. They are then filed down to the size of the barrels, partially bored in the inside, and a communication hole drilled through the under part. This being done they are ready for the London proof. Some, indeed, solder on the ribs; yet the general way is to send them off in this state lest they should burst, as the loss would then be greater." (P. 74.) We shall take another opportunity to describe the varieties in the breeching of guns, as connected with their influence on the shooting of the piece.

2413. *But few gun-barrels are entirely made in London,* although many are stamped as of London make. By far the greatest number of those met with even at our best gun-makers, are forged in the rough at Birmingham; and vast numbers are, as we have shown, finished there throughout. But fortunately we yet have some gun-makers, who, however they may receive the outer metal carcass, if we may so express ourselves, yet they re-bore it, and that by *engine work,* which, as it cannot err, enables them to finish off the proportions of the piece with mathematical correctness. The Mantons were long famed for so doing, and Lancaster no less so: indeed the latter, at the present time, may be considered as one of the first, if not the very first, gun-borer in the world. It is by means of machinery also that the barrels of the double gun of these makers are secured together, without that destructive use of the file, which we have elsewhere so much deplored. These circumstances, the truth of which we can vouch for, enables us to state our full conviction, that notwithstanding the wretched trash in the way of guns which do arrive from Birmingham, there yet remain even there good and honourable manufacturers, willing and able to insure a supply of well forged gun-barrels to meet the demands of the finishing gun-makers of London, and of our own large provincial towns. Our wish is not to dishearten the purchasers of guns, but only to make them cautious, and to enable them to distinguish between those that enter the *common hardware market,* and those that are met with at our gun-makers of repute. The former guns are finished out of hand—barrel, lock, stock, and all in Birmingham; and usually from inferior metal: the latter enter the shops of the most reputed makers in the rough, direct from the best sources; here they are re-bored, critically examined, and proved a second time. If also the various parts of the lock, &c. are forged in the rough in Birmingham, they are still re-filed, re-tempered, and finished in London, and then are adapted to their several places. Some of our first-rate makers, particularly such as have added important improvements to them, we believe wholly manufacture their own locks. These remarks will also apply to some of our provincial gun-makers; but it is only here and there, where a very zealot in the art, and one who by living in a sporting neighbourhood, where due encouragement is given to talent, industry, and spirit, is able to get up his goods himself, after receiving them in the rough from the foundry. Colonel Hawker notices some of the country stars, and we also can bear testimony to the talent and spirit displayed by some of them. Mr. John Harvey, a gun-maker of Exeter, and a star in that line, presented the Prince Regent with a fowling-piece of such pretensions, that his Royal Highness considered it as a fit present for General Platoff, at that time a most popular character. As we believe what has been premised to be a true account of the progress of the gun, from its forging from the bar to its ultimate destination into the hands of the sportsman, we have only to recommend the purchaser of one to go to a good market; next to use much caution and circumspection in the examination of it; and after having taken the proposed purchase entirely to pieces, and examined each separate part minutely, that there be no flaws in it, and also that the several distinct parts adapt readily each to the corresponding parts, and that with them it works smoothly, and with due, but no more than due, force; that then it be tried as to its range, distribution of shot, and strength of indentation. Every one of these several properties should be separately noted, and where flagrant defects exist, consider well whether it will be better to attempt to remedy them, or to abandon the gun altogether. For instance, should a newly tried gun be found to recoil, under every variety of loading, would you abandon it altogether, or try to alter the powerful reaction? We say, if your fancy leads to the gun, or you have actually purchased it, have it restord; we have known several which have been remedied by so doing. Few other defects also, in the action of a gun, but may be remedied in the hands of a judicious artist; but do nothing that will compromise its safety.

Subsect. 2. *Proving of Gun-barrels.*

2414. *Proving of gun-barrels* is indispensably necessary to insure confidence in their safety. The cupidity of many of the great forgers of these articles, particularly of those who manufacture those nicknamed sham guns, sham-dam, park-paling pieces, &c. we again remark, should make every purchaser on the alert to assure himself that what he buys has been fully proved. To make surety double, wherever a new gun is bought from any other source whatever, except from out of the shop of a maker of reputation and under his warranty, we would most strongly recommend that such gun be proved under the purchaser's own inspection before he uses it. It is not indifferent metal only, or too limited a quantity of even the best metal that is to be tried by the *proof.* It is equally employed to detect any accidental flaw which may, and frequently does, occur in the forging of the barrel. The first attempt at establishing any compulsatory trial of gun-barrels appears to have taken place about the commencement of the twelfth century, and originated with the company of gun-makers themselves; and it was at the proof-house established by them that the muskets of the East India Company were first proved. The enactment, however, which compelled a trial, became at length a dead letter until the year 1813, when the fraudulent conduct of the gun-manufacturers having brought our hand arms of all descriptions into great disrepute, and forced our sportsmen even to supply themselves from France and Spain, it was found necessary to call a meeting of the trade itself, the members of which formed themselves into a company incorporated by act of parliament. By the powers granted to the company it was made penal to manufacture and sell any gun without having it first proved at one of the proof-houses established by the company in London and Birmingham. Nevertheless, these enactments also were evaded, and the door to fraud remained unclosed, by which both the home and the foreign markets being again inundated with unsafe guns, the legislature itself interfered in the year 1815. Adopting the principles of the former act as regarded the methods of proving, "it was enacted that no barrel shall be received by any person to rib, stock, or finish, that has not been duly proved, under a penalty of 20*l.*" It is also enacted, that all barrels shall be sent immediately from the maker to the proof-house, before the same shall be sold or transmitted for sale to any person whatever. A penalty of 20*l.* is attached to the breach of this enactment, and it further visits with the like penalty any one receiving such barrel to make up. It also made the same penalty to attach to the forger of the proof-mark of the London Company (*a*, *fig.* 368.), or that of the Birmingham Company (*b*, same figure).

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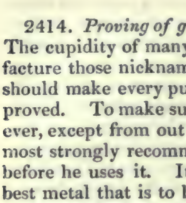


GUN PROOF-MARKS.

2415. *The process of barrel proving is thus conducted:* — A quantity of powder proportioned to the size of the bore is introduced, over which a wadding of paper is put. A leaden ball is then put in and wadded down also with paper. On this process Mr. Greener makes the following remarks: — "These (the contents of the charge) have the property, owing to their construction, of expanding when struck by the copper rod that is used for the purpose of loading, and by fitting the bore completely, are calculated to be of great advantage by increasing the friction, were not that advantage at the same moment partially destroyed by the way in which the paper is struck, tending to compress the powder, and necessarily rendering it less liable to ignite. All powder compressed resembles the composition in a sky-rocket, where, by excluding the air, the length of time required for the explosion of the contents is increased: the truth of this fact may be easily ascertained by tight ramming any gun, and then firing it over a sheet of paper, when a number of grains of powder will be found unburnt. Load the gun again with an equal charge; be careful not to ram it tight, and the whole will be found to have exploded. This proves that hard ramming prevents the full explosion of the charge." (P. 80.) Mr. Greener, however, objects to the method of proving the best barrels, which, as we learn, are allowed in their recoil to bury themselves in a mass of sand; whereas the common barrels are made fast by an iron bar, which checks their recoil. "This," he justly observes, "is a practice calculated to destroy the efficiency of the test to the extent of at least fifty per cent. Gunpowder explodes with equal force in all directions. It necessarily follows, that on firing a loaded barrel, the force of the explosion is equally exerted on the breech, the charge of lead, and the sides of the tube." "Were the best barrels fixed as the common barrels," he continues, "the explosive force, meeting with as firm a resistance from the breech as from the sides of the tube, would be entirely expended in the projection of the charge, and on the sides of the tube." (P. 84.) Our limits prevent our proceeding further with his ingenious arguments in proof of the neglect there displayed, but we would refer the reader to the work itself for full satisfaction on a point which concerns not only proving of barrels, but the projectile phenomena of action and reaction in the gun-barrel generally, thereby embodying some of the most valuable principles of projectiles. Many good judges, however, do not think the present method of gun proving sufficiently trying, but would subject every barrel to water proving, which is certainly more severe. A machine for this purpose is possessed of such powers, that it will detect the smallest flaw, by forcing the water through the disgregated fibres, and sometimes even tears open a weak part. Some of the gun-makers, therefore, who keep proof-houses, have also a machine for water proving; any one of whom will *waterprove* the barrel of any person who wishes it. If however the following story, related of a gunsmith in Dublin, has any foundation in fact, then it becomes imperative that every gentleman who wishes his gun to be proved, should himself, as already recommended, witness the process: — This trader, it seems, sent home a gun to the gentleman who had ordered it, with an assurance of its goodness, and the "certainty of its safety from the *proof stamp* to be seen on the barrel." As the story goes, when in a few days the gentleman proceeded to try his gun, to his astonishment there was no touch-hole. We have only to add, that the satisfaction of feeling secure is certainly worth the trouble of attending the process, and to ourselves the *wrinkle* gained would be worth at least half the cost of the proving.

Subsect. 3. *The Double Barrel Gun.*

2416. *Double barrelled guns* were formerly made with one barrel lying over the other, each barrel having a separate pan, hammer, and hammer-spring; but there was only one cock for both. The barrels were therefore made to turn round at the place where their breeches joined with the stock; so that, as soon as one was fired off, the other could be brought into its place, by pressing a spring with the right hand, and with the left turning the barrels on their common centre. This movement bringing the loaded barrel into its proper situation, a spring next descended into a notch, and kept it firm. From the description, it is evident that all the work giving motion to the cock must be confined to the part behind that at which the barrels turn round. The lock-works were necessarily complex; time was lost in changing the situation of the barrels; and yet even these evils did not deter the gun-makers of those days from adding three, nay, even four barrels to a single stock. There next appeared a somewhat more convenient, and rather less complex double gun than that just described. This improved method, as we are told in the essay on *Shooting*, did not "allow the barrels to turn round upon an axis; but, on the contrary, they were fixed one over the other, and each had a separate lock and trigger, that for the under barrel being consequently placed lower than the other. Still, although pieces of this construction possessed a great advantage over those that turned round, in the quickness of their firing, yet they were subject to one inconvenience, from which the others were exempt, and which arose from the situation of the under barrel; for that being fired under the same line of aim with the upper one, must necessarily shoot low." Our double guns are therefore now seen with each barrel in juxta-position with the other, or side by side.

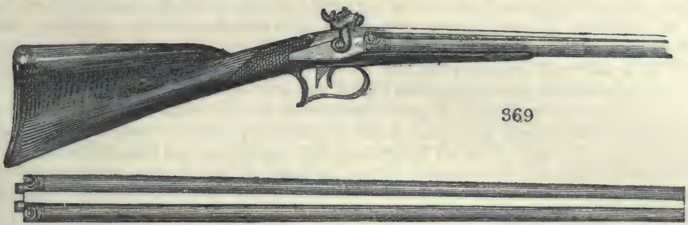
2417. *The present improved method of joining or putting double barrels together*, though progressing, is by no means even yet sufficiently attended to, considering the importance of the matter towards the safe and effective shooting of the piece. Each barrel is too apt to be filed away flat at the breech, and at the muzzle also, for a few inches, to bring the muzzles together; which marks error the *first.* To this the makers allege they are forced, because the country-made barrels are forged rather hollow in the middle, which evidently makes error the *second.*

In this state then the barrels are first bound together, and next are soldered together. But having their muzzles and their breeches thus united, what becomes of their rectilinear direction? It is evidently lost, and the left hand barrel must, of necessity, now point to the right, and the right barrel to the left of the correct line of aim. This is a homely exemplification, but as we wish to bring it within the ready comprehension of every one, we purposely so offer it. Manton's elevated rib, among other valuable properties, did much towards regulating the true direction of the barrels of double guns; but as all double guns have not the elevated rib, and yet are used with very fair effect, it will naturally be asked, How is it that all who use them succeed even so far? We answer that every one who has acquired the practice of shooting with the *single* barrel gun, does not find himself *au fait* with the *double*, until by habit he has learned to rectify the error pointed out. Nor is it readily imagined, how greatly erroneous is this inclination of the barrels; but we will endeavour to exemplify it by a quotation from an acute writer in the *Sporting Magazine* for April, 1824. It is there asked, "What is the best method of making double barrels, so that a correct aim may be taken from the *centre* of the barrels?" To this the following reply is offered, "If the barrels were placed parallel to each other, it would be but a small objection having the sight between them; but as guns are commonly made, the thickness between the bores of each at the breech is three-sixteenths of an inch, and at the muzzle one-sixteenth. Therefore, if the length of a pair of barrels was two feet six inches, which is the ordinary length, and the sight taken from the centre, and a ball was projected from one of them, it would make one-eighth of an inch declination from its true course in every two feet six inches it had to travel, which would make in forty yards a declination of six inches. From this cause, the right hand barrel always shoots to the left, and *vice versâ.* Now, to remedy this, suppose the thickness between the two barrels to be at the breech three-sixteenths of an inch, then let the space at the muzzle be the same; and when the barrels are thus laid together, and the sight placed between them, the ball would only make a declination of half an inch (the bore being five-eighths of an inch), being the distance between the centre of the barrel bore and the exterior of the barrel's surface." (P. 20.) We cannot likewise but see that the methods by which some gun-makers affect to rectify this error in a degree, by filing away so much of the breech surface as shall bring the calibers of the barrels into a more rectilinear direction, is remedying one defect by making a greater, and one by which extreme danger is incurred, although it might be avoided by adjusting them as proposed above. However the junction of gun-barrels is effected, it is essential that it should be so done as to make the centres of the calibers of the muzzles and the centres of the calibers of the breeches, if not exactly equidistant, at least considerably more so than at present; the approximation being in proportion to the length of the barrels. We are somewhat surprised that Colonel Hawker should pass so slightly over this matter, particularly when he states so astounding a fact, that not one gun-maker in fifty knows much about it. Surely it is a subject of some importance, one indeed very much so to him who shoots with a double gun. This divergency cannot be corrected in the common method of "setting" or "putting" barrels together; nor indeed will that pointed out in the above quotation be sufficient, we apprehend, to do it completely: much, however, we repeat, must depend on the length of the barrels, and on the method of taking aim by the shooter. Colonel Hawker seems to consider this convergency of the barrels, as set in the usual manner, to be neutralised by the *swerve* or *kick*, as it is called; and which alone, he hints, would just bring the centre of the shot into the bull's eye. With deference to almost every opinion from this source, we must nevertheless beg leave to differ from this, and we would ask, What becomes of the swerve, or kick, of the single gun, which that also must be liable to have in every case, but a considerable one in some hands? Would any misdirection of that barrel become excused on that score? We answer, No; because the direction is correctly given at first, and the sight of the barrel is true, but in the other it is false! Much as we admire Mr. Greener's usual line of argument, we regret that on this subject we disagree with him, also, when he says, "To make them (the barrels) uniform (*i. e.* lessen that convergence we complain of) it requires that they should be reduced or flattened, to allow the thick or heavy end to join closer. If this be not incurring a risk, we do not know what is; and we do hope that no respectable gun-maker will rectify this convergency in the barrels towards each other by any other means than firmly setting the centres of the muzzles rectilinearly with those of the breeches, by the agency of *an intervening substance,* as hard soldering in the centre, metal ribbing it above and below, and then, and then only, the silver sight will not be a guide to error." It is very much to the credit of Manton that his numerous improvements reached to this subject also. His double barrels were placed together without at all reducing them, and consequently we never heard of the bursting of one of his improved breeched guns. It is not thus with many even respectable gun-makers, of whom Colonel Hawker says that most of them are in error with regard to putting together barrels; but he is not, however, sufficiently explicit in informing us how he would have it remedied. It is not often our excellent Mentor is thus taciturn.

SUBSECT. 4. *Of Elevation and the elevated Rib.*

2418. *The line which a charge of shot takes when fired from a double gun,* even if it be at all rectilinear, can only remain so for a very few yards, which point-blank course is called in gunnery the "line of impulse." However, as even this is uncertain, and if it were otherwise would be of no importance to our present purpose, we will consider the range or the line of flight of the shot as curvilinear. Whether it describe a true parabola, which is disputed, or one less parabolic, is also of little consequence; it is sufficient for us to be apprised, that the shot in its flight from the gun is influenced throughout by the laws of gravitation. From the moment of its ejection, its tendency is to the ground, where finally it must rest; but the distance to which its flight is prolonged, will depend on the goodness of the gun, the materials it was charged with, and the tact displayed in proportioning such materials to the size, &c. of the piece. The curvilinear direction of the shot being inevitable, it follows that to bring them to the mark aimed at requires corrections by artificial means; one of which is by a straight stock, but principally it is effected by an artificial elevation of the muzzle of the piece, and that in the proportion of the length of the barrel, it being required to be more considerable in a long than in a short one. Several methods are practised for elevating the shot mark of the gun, but the elevated rib on Joseph Manton's principle, appears the best.

2419. *The elevated rib.* On this subject Mr. Greener may be referred to with much advantage. Colonel Hawker, also, after his impressive manner, here shows the *master*, and it is not a little remarkable how closely the opinions of both coincide, as a reference to their several works will prove; nor would it be at all to the discredit of even such a *pupil* as Mr. Greener, to benefit by the tuition of such a *master*. "Different lengths of barrel," says Mr. Greener, "require a difference in the height of the rib (*fig.* 369.). A greater height is also required for a person accustomed to use a crooked stock;" and *vice versâ*, of course. Both Colonel Hawker and Mr. Greener agree, that the elevation of rib usually met with is not sufficient, which is a truth we have long advocated. The usual elevation will not often effect the intended delivery of shot to the mark even at forty yards with a moderate charge of powder; and a heavy one of large sized shot must, of course, err more. For it must be allowed that there are few sportsmen sufficiently mindful, or even equal, to such quickness of recollection, as *instanter* to accommodate their aim to the varieties of distance, range of gun, and altered charge; and yet no one can be called a complete shot who is not *au fait* at all these. Mr. Greener informs us that the sum of his trials, which have been, he says, numerous in the extreme, convince him that with "heavy charges of shot the droop is full twelve inches at forty yards," but that with less charges of shot the line of flight will be more direct. The length of barrel, however, must be taken into the account in adapting a rib to it. "A two-feet-ten gun," Colonel Hawker observes, "with the rib no more elevated than a two-feet-eight gun, invariably puts the body of the charge under the mark at all distances beyond thirty-five yards." There is also much pith in the following remark of Mr. Greener, who, we have already shown, admits that length and height of elevation should be consentaneous: we suppose he means in *field guns* in general. "I believe, however," he says, "Colonel Hawker has fallen into an error, when he says that long guns require greater elevation than short ones. But does not a long gun keep the shot more together? Is not more force generated? and is not the initial velocity greater than in a short gun? If these be facts, why is more elevation required to be given if the shot do not droop? I apprehend the colonel means, if the same height be required to be given above the mark, nothing can be plainer than this — that if one pair of barrels be four inches longer than another, and the elevation the same, there cannot be as many lengths in the forty yards of the longer barrels as of the shorter; and hence the difference when multiplied. I think, therefore, he cannot have taken into consideration, the superiority in their shooting; for there cannot be a doubt, that, if a gun keep the shot together longer, it cannot require that allowance for drooping, which a shorter gun does." (*Loc. cit.* p. 107.) For the information of our readers who may feel an interest in the setting of gun-barrels, as every sportsman who carries a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ELEVATED RIB.

double gun ought to do, we advertise him that Godsall, of 86. Oxford-street, has a plan by which the barrels of the double gun cannot fail of having their cylinders set mathematically true. That difficulty, therefore, to a critical setting of the barrels, which occurs from filing away the outer substance of many of those from Birmingham (purposely so served to lighten the piece) is thus obviated. Mr. Lancaster, also, takes care to rectify the bore by a self-acting machine, which forms a correct taper from the breech to the muzzle. These improvements, therefore, deserve all possible encouragement from the public.

2420. *The sight, or sight plate, or rim.* When the elevated rib is not attached to a double gun, there is of necessity a connecting medium between the two barrels, besides the soldering which holds them together. This consists of a metal plate or rim above, and of another underneath. To either the elevated rib, or in its absence to the metal plate, then called the *sight-plate*, the little silver knob, known by the name of the *sight*, is attached. Colonel Hawker ridicules this usual gun-barrel appendage, and without doubt a practised shot can do as well without it. It is, however, seen on all double barrelled, and on many single guns also; and we therefore notice it, and he does the same. It should be larger or smaller, as the gun is longer or shorter; and when the rib is much elevated at the breech, the metal sight ought to be large in proportion. Few practised shooters, however, are guided by the sight. We, on the contrary, believe the hand gains a habit of pointing the gun at the bird, not of course without the eye having been directed to it; but there the eye rests, and the hand there directs the gun by a sympathetic effect, most difficult to describe, and not easy to imagine even; but unquestionably such is the fact. How does the blind man know when he has reached his own door, though it should be in a row with twenty others? He does not measure his steps, yet an instinctive feeling pervades him that he is at home. We have elsewhere noticed a blind guide who accompanies strangers over the mountains in North Wales, through ravines, over narrow passes, and yet has never been known to lose his way. Forgive us, gentle reader, for we have lost ours; but the interest of the subject misled us. We are yet only on the threshhold of a knowledge of sympathies. We have capabilities unknown to us, until necessity calls them forth. Thus the eye only glances at the bird, it is the hand that does the rest with the practised sportsman. Trouble yourself not therefore, youthful sportsman, about your sight or sight-plate; learn to measure distances by the eye, and accommodate your elevation to them. A point-blank direction without an elevated rib will not serve you beyond twenty-five yards; neither must you trust wholly to an elevated rib. For all long shots it is usually set too low, but you must shoot above the gauge in a moderate length, otherwise you will be as much above your mark, as at others you may be below it. We shall, however, recur to this again. It is an indisputable fact, that an erratic but clever fellow offered a heavy bet, that after two days' practice only he would shoot against any one of a certain set of fair shots with whom he was acquainted, by merely pointing his gun from under his knee, and consequently without any eye aim, and he won his bet by killing three out of every four shots.

2421. *The advantages of the double gun in a sporting point of view over the single gun*, few unprejudiced persons we think would deny. As far as sport is concerned, in the quantity of game to be obtained, there is certainly no comparison between them, particularly at the commencement of the season, when double shots may be expected; and further, that, should one barrel fail, the other is at hand to redeem the loss. After thirty years' shooting with double guns principally, and also generally in company with others similarly armed, we have ourselves never witnessed a serious accident from the use of the double gun. The additional weight complained of by some is more ideal than founded on fact; the single gun is not only longer and comparatively heavier, but its additional length employs its leverage unfavourably on the arm and loins of the sportsman. We are not prepared to deny that the double gun in killing hands and craving minds may tend to lessen the stock of game; but it is not, we maintain, one-fourth as much so as the night net-work of the poacher; and yet we have known many who will not allow a double gun to cross their fields, and at the same time are too careless to *bush* them after harvest.

Sect. II. *The Caliber or Bore, the Length and Weight of Barrels, their Range, Force, Regularity of Effect, Recoil, Liability to burst, &c. &c.*

2422. *To forge and bore barrels* in such a manner as to make them carry their shot with rapidity and force, has long been the study both of British and foreign gun-makers; and that they should not yet have come to any common understanding or agreement on the subject, is a sufficient proof of the intricacy of it. Foreign gun-makers having had the start of us, long ago taught and practised many conceits on the matter. Some made superficial scratches within the barrel by a mandril; others completely rifled the barrel, which was thought to assist the projectile force, and also the regular garnish of the shot. A few English artists in this line straight rifled their pieces for this purpose; but the practice never became popular, for it was found only to foul the barrel more quickly. To make it at all effective, the rifling must necessarily have been deep, by which the barrel was either so much weakened as to become unsafe, or otherwise must have had so much metal as to prove burthensome to carry. The difficulty of cleaning such a piece, and of adapting such wadding as should shut out windage, afforded additional reasons for discontinuing the practice of deep rifling fowling-pieces. Mr. Greener considers this failure of the rifled barrel to arise from the necessity that exists, that the shot barrel should be more elastic in property than resistant by dead weight; and it certainly is true, that the best barrels to carry shot are found among those which have had much hammer hardening expended on them. Such, although of very light weight, have carried heavy charges with entire safety, projectile force, and slight scattering; but they were flint-guns.

2423. *The flint gun-barrel*, by the recommendation of Colonel Hawker, should not be bored cylindrically throughout; but, on the contrary, " A little tightness or contraction just where the shot first moves should be preserved." The barrel may then proceed cylindrically to within a few inches of the muzzle, when the remainder in both flint and percussion barrels should be relieved to the exit, by which relief the colonel contends " the gun shoots as close as it can do" compatible with the strength and quickness required. This method of boring is now much practised, and has been long a topic of discussion both abroad and at home. The intention of contracting the breech end of the barrel, the propriety of which we have some doubts, is, that it may constringe the charge; by which means the barrel will not foul so soon, and, what is of more consequence, it is supposed to increase the force of the discharge, by detaining the closely collected shot until the powder is sufficiently inflamed to throw it out with the requisite force. At one time this contraction of the breech end was made more considerable than at present, when, as might be expected, some accidents taught the gun-makers more caution. Both the relief above, and the contraction below are now so slight, particularly the latter, as to be entirely overlooked by many owners of guns; but a close fitting wadding passed down the barrel will detect the one by the ease, and the other by the constriction, with which it moves up and down. It is one of the inconveniences that attends this method of boring, when at all considerable, that the wadding which fits exactly above, will pass with some difficulty below, which will increase as it approaches the breech. Let the purchaser of a gun, therefore, ascertain by a gauge the exact diameter of each portion of the bore of the piece, that he may adapt his wadding thereto. Indeed, the only proper wadding for relieved guns is one with a considerable degree of substance and some elasticity,—Beckwith's for example. A wadding might also be slightly notched, which would adapt itself to the variable diameters of the bore of the flint-gun, or a wadding perfectly elastic might be employed. After we had penned this paragraph, we met with the following in the essay on *Shooting*, which, although it bespeaks a more decided objection to *relieving* the barrel than any we are prepared to offer, yet, as it meets our views on the necessity of being particular as to the wadding employed for them, we will introduce it:—" As hat is seldom employed for wadding, it is scarcely possible but that more or less of the flame will escape past the wadding of tow or paper, and insinuate itself among the grains of shot. This flame will expand itself laterally, as soon as it arrives at the widened part; and, by driving the grains along the sides of the muzzle, will communicate a whirling motion to them, that will increase their divergency very considerably." (P. 106.) It must not, however, be supposed, that every gun-barrel of the present day is thus bored; on the contrary, some experienced makers of guns, as well as the purchasers of them, prefer their being bored cylindrically throughout; and many such barrels shoot excellently well, and are, of all others, the least likely to recoil. Indeed, no method of boring yet devised will insure a specific ratio of action; but the methods of relief now practised have certainly gained ground amongst the best gun-makers, which, although it is noticed as somewhat novel, was a very old practice. By this we do not mean the old "bell-mouth" enlargement, as useless as it was unsightly; although Espinar advocates even that as having the effect of making the gun throw its shot closer, but which we cannot believe. We only therefore allude to that " delicate relief," as Colonel Hawker calls it, which unobservant persons often fail to detect, and many gun-makers fail to point out to their customers

2424. *The percussion barrel* is made heavier and stronger throughout than the barrels of the flint-gun. It is also at present fashionable that it should be bored with a little relief forward, which Colonel Hawker tells us " has the effect of making the gun shoot as close as it can do compatibly with the quickness and strength required." This method, besides the being sanctioned by the colonel, is also advocated by many other judges; and as it really seems to work well, while it does so it will be prudent to pursue it, although we know at this moment many most excellent detonators, which are bored cylindrically throughout, without the slightest relief or contraction, which shoot equally well. The increase of metal in the detonator, we think with Colonel Hawker, to be an essential requisite: first, to resist the quicker, and consequently more forcible expansive force applied by the ignition of the powder through the agency of detonation; and next, to lessen the recoil so much more forcibly felt in most detonators than in the flint-gun. This increased weight of the percussion barrel Mr. Greener however objects to; and, inquires, " Whether some of the best flint-guns met with have not been very light? To this we answer, that it was the principle on which the explosion of the flint-gun was effected, that enabled it to be made lighter, and yet to remain equally safe in using: but we know also, that where it was required to add to the rapidity and force of ignition, it then became necessary to increase the substance of the barrel. Mr. Greener, however, would have us acquire this increase of power of resistance, not by quantity of material, but by increased tenacity and elasticity in the metal the gun is formed of; and we agree that it would be a great improvement if it could be brought about. But what is our prospect of it, "Is it not the general complaint, that gun-metal is not by any means what it was. We have shown that it is not, and therefore we do not think, as Mr. Greener asserts, that any recommendation of increased weight of metal to the percussion barrel beyond that of the flint-gun "is founded on ignorance;" but, on the contrary, that the very reason which Mr. Greener gives to prove it, is that which we think affords evidence of its perfect rationality — *the explosive force created.* We must conclude this subject by observing, that although we do not think the present general method of gun-boring has by any means arrived at so much certainty as to produce any uniform results, yet that certain gun-borers do produce barrels that almost invariably are good, both in their range, and in the regularity and close garnishing of the shot they carry; and with that for the present we must content ourselves.

Sect. III. *The Rifle-gun.*

2425. *The rifle*, as a variety of the gun, is often called into action for sporting purposes; in deer stalking it is indispensable; and in rook shooting it is used by many. The methods of *rifle boring* having lately undergone considerable alteration, it is necessary that we glance at them, referring the reader for further information to Dr. Ure's *Dictionary of Arts and Manufactures*, and for ocular demonstration to Mr. Beckwith, of Skinner-street, one of the appointed makers. We hardly need inform the reader, that the rifle-barrel is much stronger and heavier than that of either the flint or the percussion-gun; and that its bore has long been manufactured with indentations within, which form spiral grooves throughout its extent. It is true that some of the early riflers used straight rifling; which method, by many judges of the present day, is not considered favourable to a point-blank delivery of the ball; for the ball being forced by the spiral grooving into a rotatory motion on its own axis, was supposed to maintain a much longer rectilinear direction than it does when ejected from a barrel only straight rifled. The mechanical means of cutting the rifle grooves, Mr. Greener informs us, are very simple: — "On the end of an iron rod is fixed a cutter, with teeth like the teeth of a saw, which cut the required shape of the groove; and on the opposite side of the rod is a piece of copper to keep it steady in the barrel. The spiral movement is given to this rod by a socket, through which it works similarly to a barrel already rifled; which, together with the barrel, is fixed on a sort of bench from six to nine feet long. Sometimes the rod itself is twisted to the degree of spirality wanted; and this rod, working through two square holes of its own size, is of course turned while passing through. On the end of this rod being introduced into either end of the barrel, its action is regulated by a screw, raising or depressing the cutter so as to indent it more or less; it is then driven with force through the barrel, and repassed a few times, until it passes easy. The cutter is then made to cut again by a turn of the screw, and again forced through, repeating the process until the groove is sufficiently deep. The cutter is of course directed by the rod, and the groove is cut with the same degree of turn as that to which the rod is twisted." (P. 194.) (See Greener on the gun; also Baker on the rifle, where every particular relative to the rifle practice of late years is amply detailed.)

Subsect. 1. *The Modern Rifle.*

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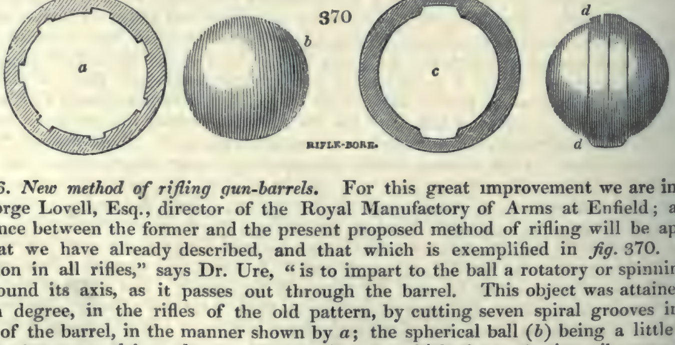

RIFLE-BORE.

2426. *New method of rifling gun-barrels.* For this great improvement we are indebted to George Lovell, Esq., director of the Royal Manufactory of Arms at Enfield; and the difference between the former and the present proposed method of rifling will be apparent by what we have already described, and that which is exemplified in *fig.* 370. "The intention in all rifles," says Dr. Ure, "is to impart to the ball a rotatory or spinning motion round its axis, as it passes out through the barrel. This object was attained, to a certain degree, in the rifles of the old pattern, by cutting seven spiral grooves into the inside of the barrel, in the manner shown by *a*; the spherical ball (*b*) being a little larger than the bore, was driven down with a mallet, by which the projecting ribs were forced into the surface of the ball, so as to keep it in contact with their curvatures during its expulsion. Instead of this laborious and insecure process, the barrel being now cut with only two opposite grooves (*c*), and the ball being framed with a projected belt, or zone (*d*), round its equator, of the same form as the two grooves, it enters so readily into these hollows, that little or no force is required to press it down upon the powder, yet, so much more hold of the barrel is at the same time obtained, that instead of one *quarter* of a turn, which was the utmost that could be safely given in the old way, without danger of stripping the ball, that a *whole* turn round the barrel, in its length, can be given to the two grooved rifles. The result is, that better practice has been performed, at three hundred yards, than with the best old military rifles at one hundred and fifty yards. This mode of rifling, however, is not new, but in fact is one of the oldest upon record, and fell into disuse from faults in the execution. The idea was revived in Brunswick, and in Hanover also; but the judicious improvements it has received in Mr. Lovell's hands have rendered it, when skilfully used, a weapon of unerring aim, even at the prodigious distance of seven hundred yards." (*Dict. of Arts and Manufactures*, p. 478.)

2427. *The locks for the military rifle* are also receiving an important improvement by Mr. Lovell, who has greatly simplified their mechanism by reversing the position of the main-spring, which increases the compactness and strength of the works, yet renders them more effective, durable, and easy of repair. By this alteration the ignition is so certain, that a misfire is rare in the guns of the Royal Manufactory; and these improved rifles have completely superseded the old Brown Bess's of the British army, after of course meeting with the usual resistance consequent upon what are called in disparagement "new fanglements." It is said that the Duke of Wellington advocated the retention of what had been his victorious weapon to the last day of his life. A further improvement is now in progress in rifles by the adaptation of the American Colonel Colt's pistol-revolving principle to them (improved upon by Messrs. Deane and Adams), whereby a succession of balls can be discharged as quickly as the trigger can be pulled; though this is thought to be better adapted to the exigence of warfare than to the skilful science of rifle shooting.

2428. *The length of gun-barrels* has of late undergone a very considerable change; formerly it was thought indispensable that every barrel, to shoot well and kill clean at considerable distances, must of necessity be long; and to this day may be seen, looped up over the mantel-piece of some of the old farm-houses, and even of some of the halls of the old mansions, gun-barrels but little shorter than a garden rake. Our ancestors, it is well known, seldom shot with a gun-barrel of less length than from three and a half to four feet; but what they acquired by length, they gave up in width of bore, contenting themselves with five-eighths of an inch, or seventeen gauge. Query, Were not standing shots more in fashion than at present? But for a gun of such length to be met with now, unless it be a duck-gun, at least ten others may be seen of very curtailed dimensions. Indeed, it may be doubted, whether in the usual course of reaction of public opinion, the barrel is not now in many instances too much shortened. It was held, in these times, that a lengthened range of the shot required an increased length of barrel; for it was then argued, and by some is so still, that when a barrel was short, the charge of shot quitted it before it had received the whole impulse of the powder. It however may, on the other hand, be suggested with reason, that where the barrel is too long, although every grain of the powder may not have become inflamed, yet the propulsive force having arrived at its maximum before the shot has reached the mouth of the piece, of course a hurtful resistance from the sides of the barrel commences. If we remember rightly, it is on these grounds that Mr. Robins, an oft-quoted authority of repute in the science of gunnery, is decidedly in favour of short barrels. His experiments, which are detailed in almost all sporting works, tend, as he states, to assure him, "that the sportsman may please himself as to the length of his barrels, varying from twenty-eight up to forty inches; but that either above or below those dimensions, the range of the shot began to fail with him." Nothing, we think, evinces how little we do actually know of the true theory of projectiles more than the following facts: first, the diversity of the opinions which are held on the subject; and secondly, that the opinions formed thereon, are in so many instances changed to others, in some cases diametrically opposite. We are inclined, therefore, to think that accidental circumstances may have as much influence on our judgments on this matter as direct experiment. Thus, when we resided in Essex, and pursued wildfowl shooting on the adjacent shores, we then inclined to favour long barrels, not only for this, but for every other variety of shooting; length! length! was then all-in-all, as far as barrels were concerned. May not this predilection for wildfowl shooting and duck-guns have had some little to do with Colonel Hawker's conversion to the long barrel creed? We know that the strongest minds and the soundest judgments (and the Colonel unquestionably possessed both in an eminent degree), are capable of becoming warped by being daily mixed up with pursuits somewhat adverse to those on which their original conclusions were formed. We are warranted in this remark, it being notorious that the Colonel was the most ardent and most expert wildfowl shooter in the kingdom. As regards ourselves, a subsequent course of partridge shooting in the midland counties, and of grouse shooting in the north, has revived our predilection in favour of using moderately short guns, from having found them equal to all the general purposes of field shooting: and even were they somewhat less effective, without doubt they must prove particularly convenient to those who, like ourselves, have short arms, and bend under the burthen of increasing years, which make every ounce of weight an object in carriage. We nevertheless have always thought the subject so important, and yet so much in abeyance, that we some years ago added our own efforts to those of others in the experimental field. We then occupied a shooting locality in the north, far from the busy haunts of men; yet even there we managed, by borrowing of some, hiring of others, with the use of our own, to become enabled to command a sufficient number of guns of almost every length. With these we varied our experiments in every possible way, the result of which was to establish a firm conviction in our mind, that *there is a determinate length in every barrel*, with which it will carry its shot in the most effective manner; and that, whether it be moderately short or very long. Repeated trials will give this *length*; but this is not all, for every barrel without an exception, be it long or be it short, will likewise perform best with one determinate charge both of powder and shot, and with that only. We may further add, that the proportions of both powder and shot, not only as regards the gun itself, but also as regards each other, will and do vary under particular circumstances; as extremes of heat or cold, dryness or moisture, &c. &c. These agencies, we contend, will act not only on the powder and the shot, but also on the gun itself; nor are they altogether without their influence on the practice of the gunner, as daily experience convinces us. Impressed with these convictions, and further certified by observation and experiment, we have arrived at the conclusion that, however it may be proper in sporting works to introduce a general scale of proportions between the powder and the shot, and however just such may be in general cases, yet, that of necessity, they must vary in very many others; which attentive observation alone can teach. These remarks may probably by some be called "wire-drawing," but we appeal to the well informed and observant sportsman for the truth of them. Our direct opinion on the matter in hand, the most proper length for a gun-barrel, is this:—let it be one neither absurdly short, nor preposterously long; in a word, its length, its weight, its gauge, &c. should, to a certain degree, be regulated by contingent circumstances connected with the gunner, and with the objects pursued, &c. &c.; and above all, let it be subjected to experimental trials varied in every possible way, all which will not only give confidence to the tryer, but will also improve his practice. Be it observed, however, we consider we are now addressing a tyro.

2429. *A medium length of gun-barrel*, we repeat (for the subject is an important one), is to be preferred in most cases. A very long barrel is liable to have the force of its discharge lessened by the increase of counter pressure in the greater volume of external air in a long than in a short barrel. Its force must also suffer by the loss which the elasticity of the propelling gas experiences in its lengthened transit through an extended range of barrel. In such cases it is probable that the shot, which should leave the mouth of the piece at the instant when the propelling force has gained its maximum in a long barrel, are detained beyond this point, and therefore must lose propelling force at every additional inch beyond that particular limit of capacity we have pointed out as inherent in each barrel; and which properties, and which quantities of charge, nothing but repeated and varied trials can teach the owner of the gun. Thus it is, on the other hand, that a barrel, though not shorter than those of some other good shooting guns, will not deliver its shot with force and precision, because, from some peculiarity in its bore, its metal, or in the method of loading it, on which likewise very much depends, the shot are ejected before the *maximum* of expansive force is obtained from the ignited powder. This will often happen when the powder is tightly rammed, when, in this particular case, the want of length acts thus. The velocity with which the flame of gunpowder expands when uncompressed, being much greater than that with which the shot moves forward, the elastic fluid must continue to propel the charge until it reaches the muzzle of the piece, which in ordinary circumstances is very quickly done; but in this case being delayed, it encounters, by a weakening of its initial forces, so much lateral friction and decreasing forces in the propelling powers as to delay, and also weaken, the discharge, and that in the ratio of its leaving the muzzle, either before or after the whole of the powder is inflamed, or, in other words, before the elastic fluid either is or is not sufficiently expanded. Enough has been stated, we hope, to prove the propriety of avoiding either evil, that of having barrels too long or too short. *In medio tutissimus ibis* here, as in many other cases.

2430. *Length, gauge, and weight, may also be considered correlatively.* The two former, as practically regarded, are proportions of the gun-barrel not necessarily relative, although in descriptions they are usually coupled together. We need hardly inform the tyro that *gauge* is the diameter of the bore or caliber of the barrel measured by a bullet, and that the number which a pound of such bullets weighs, marks the gauge of the barrel; consequently, the higher is the number of bullets, the smaller is the caliber. We shall therefore now proceed to notice these proportions, and shall commence by stating what may be considered as a medium length of gun-barrel. Colonel Hawker confines the extremes to two-feet-eight, and three feet. Mr. Joseph Manton, of gun-making celebrity, on whose opinion the colonel relies much, and with sufficient reason, for he was an experimentalist, and took little on trust, recommends two-feet-eight and twenty-two gauge as a general sporting length and bore of gun-barrel. A barrel of a wide bore and but limited weight, it is evident, should carry but a light charge. We also advocate a small bore; but we think Manton's proportions are in the extreme: we should rather recommend an eighteen or nineteen gauge; such a bore is safe, and it makes the gun both light and strong. We are much mistaken if it does not also in good hands kill cleaner, and proves fully equal in range to one of larger bore. That amusing Olio, the *Oakleigh Shooting Code*, tells us, "The fowling-piece to be recommended for general use is a double barrelled detonator, weighing about eight pounds; the barrels thirty or thirty-two inches in length, sixteen gauge, and made of twisted stubs. It is not sportsmanlike to use double barrels of a greater caliber; nor are longer barrels convenient on account of their weight; although additional length, not carried to an extreme, or a larger caliber, may probably render them more effective, in so far as they will sustain a heavier charge. Single barrels, for general use, may be thirty-four inches long, fourteen gauge." (P. 24.) "The barrels of the grousing gun," the same authority tells us, "should be thirty-two inches long, sixteen gauge; a single barrel for grouse shooting should be thirty-six inches long, and a fourteen or fifteen gauge. If selected for partridge shooting only, the barrels should be thirty inches, sixteen gauge; or a single barrel thirty-four inches, fourteen or fifteen gauge. If selected for cover shooting only, the barrels should be twenty-eight inches, sixteen gauge, or single barrel thirty-two inches, fifteen gauge." Mr. Baker's scale of length of barrel, gauge of caliber, and proportions of powder and shot for the same (being, he informs us, the actual result of a series of experiments) cannot fail to prove interesting and useful to every lover of the trigger, and as such we recommend a reference to it as it stands in his book.

2431. *A larger diameter of bore* than that we have stated is, however, advocated by many respectable authorities; and as it is our object by a juxta-position of conflicting opinions, to reach the truth without reference to any we may have formed ourselves, we offer the following ingenious and scientific remarks on the subject:—"There is a prevalent, yet mistaken notion among sportsmen, that narrow bored guns shoot better and closer than wide ones. The reverse, however, would seem to be the case, if the following calculation be correctly made and the results fairly stated: No. 1. a small bored double barrel, takes one ounce and a half of shot, and averages eighty in a given piece of paper; No. 2. a gun of three-quarters of an inch bore, takes one ounce and three-quarters: now, the charge of No. 1. is to the charge of No. 2. as eighty to an unknown quantity, which the above proportion will give, viz. $1\frac{1}{2}$ (or 6) : $1\frac{3}{4}$ (or 7) : : 80 : $\frac{80\times7}{6} = \frac{560}{6} = 93\frac{2}{6}$ or $93\frac{1}{3}$. Therefore, if No. 2. averaged $93\frac{1}{3}$, it would shoot as well as No. 1.; but it averages 110 nearly. Again, No. 3. nearly of inch bore, takes two ounces. Therefore, in the same way, $1\frac{3}{4}$ (or 7) : 2 (or 8) : : 110 : $\frac{8\times110}{7} = \frac{880}{7} = 125\frac{3}{7}$; but it averages 140. In all these cases, the distance and mark were the same. It therefore, under this view, would appear, that the wide bore shoots the best; it also shoots very much the strongest; I believe for this reason, that as the barrel is enlarged, less of the charge in proportion is liable to the action of friction." (*Sporting Magazine* for June, 1826, p. 86.) This extract, be it observed, constitutes but a small portion of the interesting matter connected with gunnery, to be met with in this article, and we therefore recommend it to the reader's attention as it stands in that respectable periodical.

4232. *The extent of the range*, the forcible and rapid propulsion, with the regular concentration of the shot within a moderate disk, are essential properties to constitute a good gun-barrel. We have already alluded to the *range* in all general cases of field shooting to be greatest, when barrels of a moderate length are employed, without prejudice however to the incontrovertible truth, that a very long and very heavy barrel will carry its shot farther than a short and light one; but we would ask, who, except the wildfowl gunner, would burthen himself with such a ponderous mass? As regards the extent of the range, we think that a very great mistake is made by many sportsmen, who advocate the use of small shot as equally effective with shot of a larger size. It is true that small shot move with equal velocity through the barrel; but the distance they are thrown to, and the force they carry with them, are very different. Once released from the muzzle of the barrel, they meet with resistant forces from the air in proportion to their surfaces in the aggregate; and thus the retarding forces (which may be calculated from a comparison of the resistance with the quantity of matter to be moved) will be exactly in the inverse proportion of the diameter of the different sized shot employed. It is hence explained why a musket ball of an ounce weight, fired with one-sixth of its weight of powder, will range nearly twice as far as a pellet weighing but one-eighth of an ounce fired with the same proportions of powder. We hope we have proved, therefore to the conviction of the sportsman, that the partiality which some profess for small shot is founded in error, particularly when directed against any object beyond twenty or twenty-five yards. Mr. Greener, for whose opinion we have much respect in most cases, is one of those who incline to the use of small shot. Some new rifle balls, of a conical shape, invented by Mr. Westley Richards, are sold by his agent, Mr. Bishop, of Bond-street. These conical balls, it is said, may be sent half as far again as an ordinary rifle ball, under the same charge of powder; but it is necessary that they should be accurately fitted to the rifle intended for their discharge. Some practice with them is also requisite.

2433. *To prevent the scattering of shot,* Espinar recommended widening or relieving the muzzle of the barrel. In some of the old guns this bell-muzzle almost approached to the figure of a post-boy's horn, and was therefore calculated to offer an incipient divergence of the shot ere they had escaped from the barrel. To this day we find a very slight relief recommended by some excellent shots and experimenters, as Colonel Hawker for instance. We have registered our opinion in favour of a cylindrical bore, but we at the same time think, the relieved muzzle a very harmless error (if it be one), provided it does not *sensibly* enlarge the diameter of the piece; but when it does this, we should decidedly object to it, being convinced, that so far from preventing a scattering of the shot, we know no better method of furthering it than by thus encouraging their diverging direction from the very outset. It is thus that the patent cartridges are well adapted to increase the range and prevent the early dispersion of shot. There are also other methods practised, of producing an adherence of the shot in their range, by mixing oil and water with them, and by introducing tow likewise. Heavy charges of both powder and shot (but of powder particularly) are great causes of the *scattering* of the shot; indeed we believe this to be the most general cause of all, and yet the ardent gunner of a certain stamp feeds his gun as he would himself, by a belly-full. A heavy charge of both powder and shot occasions unpleasant recoil: nor ought we to forget the danger incurred thereby. It is our duty to give this hint, though there are too many who will not be persuaded to accept it until too late.

2434. *As a determinate range,* forty yards is more used than any other in the sportsman's vocabulary. Forty yards certainly constitutes a fair average of the capabilities of a gun to bring down its game with moderate certainty. A few will kill considerably farther, and many more are only certain at somewhat less. Mr. Daniel with truth observes, that "There are few things in which persons have more faith than in the excellence of their own gun; the distance it kills, and the closeness of its throwing the shot, are inconceivable; striking a card with ten or twenty grains of shot at sixty yards is nothing uncommon; and the merits of the shooter and his gun bid defiance to rivalship. It is no easy matter to change the opinion of such persons respecting their guns; but when a gun is said to be *sure* at three or fourscore yards, the measure may be safely asserted to be of the proprietor's own making. The circumstance of knocking down a partridge at eighty yards may happen, but very few barrels of those that are generally used for the shooting birds on wing, will throw shot compact enough to be certain of killing at fifty yards: one or two grains of shot are not sufficient so to strike a bird as to bring it to the ground, for, when stript of its feathers, a partridge is a much smaller object than it appears to be, and possesses many parts not vital. Those who expect light barrels of three feet, or three-feet-six, to throw shot close enough to insure a small object at fifty or sixty yards, will be exceedingly mistaken." (*Rural Sports*, vol. iii. p. 476.) On the faith of our own observations we venture to assert, that, from twenty-five to thirty yards is the average range at which birds are killed with certainty. Many are killed at forty also, and some at fifty, and occasionally one is brought down, by a random shot, considerably farther. A hare is not a certain prize beyond thirty yards, though many are killed at much greater distances. We have, we believe, already stated, that we killed one in the middle of a hard road at full eighty yards of our stepping. It is probable that some shot which, having struck the stony surface, by bounding off again reached the hare; in no other way can we account for this extraordinary shot, the intermediate portions between our standing and that which the hare was shot upon having been seen by several of our acquaintance.

2435. *The recoil of a gun* is inseparable from a discharge of its contents, on the broad principle that action begets reaction. It is, therefore, only when the "kick," as it is called, becomes painful, that it is essential to avoid or lessen it. Inequality in the bore of the barrel is a very common source of violent recoil. Contracted breeches also, but more than all, the contraction of the barrel at its centre, occasions recoil, and that of the most dangerous kind. The expanding flame, during its ignition, presses violently to make its way through the contracted to the wider part. Now, action and re-action being equal, it follows that the weight of the piece being the same, the recoil will be in proportion to the quantity of the powder, and the weight of the ball or shot; and that, with the same charge, the recoil will be in proportion to the weight of the piece; or, the lighter the piece, the greater the recoil." (Essay on *Shooting*, p. 64.) Could we entirely obviate all recoil from a gun, we should not only remove an unpleasant shock to our persons, but, there is reason to believe, we should much assist the range and force of the shot likewise, although there is an opinion prevalent that the degree of the recoil is in the proportion of the projectile force.

On this, however, some doubts are entertained, which are somewhat warranted by the following fact: — Mortars, with iron beds, immovably fixed in the earth, throw their shot to greater distances than guns can do which are affixed to carriages, and which, therefore, can recoil. This has been incontestably proved both in large and small artillery. Having suspended a gun-barrel, charged with a determinate quantity of shot, from the ceiling by two cords, so as to allow of its recoil, fire it point-blank at a target, and mark the result accurately. Now, fix the same barrel to a block, and charge it exactly with a similar charge; then, having moved the target fifteen feet farther, fire the barrel, when it is probable that the last shot, though at this increased distance, will exceed the former both in range and force. These, and such-like experiments, are laughed at by the giddy and inconsiderate; but it is by these illustrations that the most important facts are brought to light. Projectile force is, therefore, to be increased by resistance; and the knowledge of this fact offers us a practical hint that, when we stand immovably to our shot, not only by holding the gun tightly to our shoulder, but also by leaning somewhat forward in our shooting attitude, we considerably increase the resistance, and consequently we not only lessen the shock of the recoil to ourselves, but we aid the force of the shot, and extend its range. That such is the case, may be further exemplified by the following: — Throw a ball against any movable body, and it will displace that body; but the ball will drop to the ground perpendicularly, however hard the body against which it is thrown may be. Fix the same body securely, and then the rebound of the ball will be nearly equal to the force with which it had been thrown.

2436. *A straight stock increases recoil;* one more bent carries off much of the shock, by directing its force obliquely. Bad powder increases recoil, by delaying the liberation of the shot. A foul gun recoils by increasing friction, which, being an indisputable fact, it may be asked of the advocates for friction thereby to increase the force and quickness of the discharge, how it happens that the fouler the gun is by so much the worse it shoots? Our own reply would be, that the fouling matter, like bad powder, impairs the ready and perfect ignition of the charge, by a noxious moisture being absorbed by the feculæ on its sides. Thus, old practitioners with much judgment recommend to charge the gun as quickly as possible after firing. Here, also, we take the opportunity of advising the use of such wadding for a gun which fouls much, as will by its substance remove the fouling, and also by its elasticity will shut out the air from penetrating to the charge, particularly to the powder. It is here that we think an objection might be raised to the vent-holes of the percussion-locks, inasmuch as they must permit the access of atmospheric air to the powder; whereas, did we allow the escape of any rarefied air by means of a puncture in the powder wadding, no such injury need be feared; as the shot wadding, being unpunctured, would keep the charge from deterioration by the access of air. We only throw out these hints for experimenters to cogitate and work upon.

2437. *Has the form and placing of the touch-hole any effect on the recoil of a gun?* Some, when the touch-hole is so placed as to be considerably in advance of the bed of the powder (be it within or without the breech plug), so that the powder being ignited, not from the base of the mass, but from the centre, exerts its force backwards rather than forwards at the instant of ignition, hold, that, acting thus, it must tend to increase recoil by expending its force on the breech, more than on the sides of the barrel or the shot bed at the instant of ignition. This effect is, however, denied by others; but, notwithstanding the experiments of Monsieur Le Clerk to prove the contrary, we are inclined to believe it to be a very usual cause of recoil; and the more so as, under our direction, the gun of a friend, which he said kicked like a d—l, was very much amended by putting in a deeper breech plug.

2438. *Bursting of gun-barrels.* How is it that barrels with the full proof-marks upon them occasionally burst, in the absence of all those causes that are commonly considered as liable to produce such accidents? The more common causes of bursting, besides overloading the piece, is allowing its mouth to become accidentally stopped up with either clay or snow; and although it occupy only an inch or two of the muzzle, it will also do the same, should it be attempted to be fired when its muzzle is held in water to the depth of two inches only. The inexperienced and fool-hardy disbelieving these to them inexplicable phenomena, have, however, some of them had proofs of the fatal truth, when they have made the experiment. Even with a very moderate charge of powder, as soon as the expanding forces reach the obstruction, the velocity acquired will occasion an enormous and sudden condensation behind the obstructing medium, which, though it may be by no means great, yet will not be removed by the force of the powder superior as it is; but, on the contrary, by acting suddenly on the sides of the barrel, instead of the obstructing matter, it instantly tears them open. Thus, when a ramrod has been left in a gun after loading, although only the slightest adherence existed between it and the sides of the barrel, and with nothing more than the powder and wadding beyond it, in such a case, should the gun accidentally explode, the sudden expansion of the ignited powder will not stop to eject these seeming trifling obstructions; but, like a man in a passion, will burst through a window, because the door is not big enough for him. Such are the contradictions in the phenomena attending explosive substances; the principles of action of which are only moderately understood even by those most conversant with projectiles; and thus it happens that so many lives are foolishly sacrificed every year by the ignorant and by the presumptuous.

2439. *The proof-mark,* it remains to be noticed, is not always a sufficient warranty of the safety of a gun-barrel under only a fair charge even; for it appears from Mr. Greener, that it is the custom with some gun-makers to prove their barrels in a rough state; in which case, should they burst, the expense of finishing is saved. Such as stand are said to be filed and trimmed down with a loss of nearly a pound in substance; and it may happen that much of that substance is abstracted from the breech (some of it must be), in which case, provided the barrel is intended for the percussion principle, the risk is the greater. This is one of the reasons which has prompted us to recommend another proving under the owner's own eye; and if it were done by *waterproof,* it would be still more satisfactory. (See *Proving,* p. 734.) It is only to the mere tyro, we presume, that we need offer any caution on the danger of bursting from an overcharge; we might add a monstrous one, for even a heavy charge will seldom affect a really good gun; but when, by heedlessness, the whole of an additional charge has been put on another, there is extreme danger, though bursting is not the inevitable consequence even then. We have known this happen more than once, when extreme anxiety to secure his prey has put the caution of the young gunner so to flight, that he has charged one barrel a second time. A young friend of our own had done this twice, and each time measured his length on the ground. Luckily he had been taught to charge very lightly, and his gun was one of the best, or the consequences might have been serious indeed. Some guns will burst with only a very slight windage left between the powder and shot; but this also can only happen by extreme incaution; for the ramrod in the hand of the experienced gunner will give the gauge of his charge to the eighth of an inch; but, as it has happened, it is well to keep in mind the necessity of being aware that the powder, though lightly passed down, and as lightly wadded, is good practice; yet, that it should nevertheless fill the caliber evenly. The shot likewise, provided the elastic felt wadding be used, requires no hard ramming down, not even in charging the reserved barrel of the double gun.

2440. *Imperfect boring,* bad welding, and flaws in the gun-metal, are all causes of bursting, particularly the former; but these imperfections mostly occur in inferior guns, which is an additional reason that the purchaser should be careful from whence he furnishes himself with so important an implement. In such guns, from want of care in the boring and finishing off, some parts of the caliber are very apt to be left of unequal thickness in its sides. "This," says the author of the essay on *Shooting,* "is very common in low priced barrels; and as pieces more frequently burst from it than from the other defects, it ought to be particularly guarded against. The elastic fluid which is set loose by the inflammation of the powder, and which endeavours to expand itself equally in every direction, being repelled by the stronger parts, acts with additional force against the weaker ones, and frequently bursts its way through them; which would not have been the case, had the sides been of the same thickness and strength, and not afforded an unequal repercussion." (P. 59.)

2241. *Inattention to the state of the charge* of the second barrel of the double gun after repeated firing off of the left, or whichever barrel it is that the gunner is most used to discharge, is another cause of bursting; for where birds are scarce, it may happen that an opportunity of firing the second barrel may not offer for hours even. In such case, unless the wadding be of a very elastic nature, the jar of the discharges from the first will have the effect of loosening that in the other barrel. If this has not been attended to, and an examination has not been made into the state of the charge every now and then, it is not improbable that, when fired, this barrel will also burst. To prevent the possibility of this occurring, the prudent sportsman would do well, whenever he charges the fired barrel, to put the ramrod down the charged barrel likewise, and then all danger is obviated. Be careful, however, not to put the ramrod down the charged barrel until the other has been finished loading, to prevent the possibility of some of the shot accidentally going down it and obstructing the return of the ramrod. Should such a circumstance occur, by no means attempt to draw up the ramrod, but reverse the gun, and let the shot run out; but, while so doing, see that the ramrod is kept still, that jamming with the shot may be avoided. We must however remark, that where a thick elastic wadding is used, it is seldom that the charge will loosen, particularly if the gun be squibbed at setting off, or has been once fired off in the field. We cannot help again reverting, not to a general want of substance throughout the sides of barrels, as being the usual cause of bursting; on the contrary, we repeat that some very thin barrels carry their charge, although a heavy one, with equal safety and absence of recoil: but we would allude particularly to the *inequality* of the thickness of the metal of the sides of the barrel as a more frequent cause of its bursting, than even its being originally thin throughout; or even having been filed so, provided such filing was performed by a good workman. In the forging of a barrel, if the sides do not present from the foundry even a uniform caliber, the explosive force acting on the weaker and more expanded portion in the radii of a circle, necessarily exerts itself most injuriously.

SUBSECT. 2. *Of Gun Breechings, &c.*

2442. *The gun breeching,* like every other part of the machine, has undergone vast alteration, and certainly imparted much improvement to the art of shooting. Our marginal cut, (*fig.* 371.), will introduce to the reader's notice the old plug breeching, which many of the old school assert was as good, if not better, than any one of those which followed it. We need not inform our readers, that the olden method of breeching guns was nothing more than screwing a plug into the barrel as far as the touch-hole, and if any part of its construction made it efficient, it was its reaching exactly to the touch-hole. It cannot, however, escape the sagacity of the inspector of this breech, that it presents no hindrance to the violence of the heedless sportsman, who rams the wadding of his powder and shot with equal force, by which much of it becomes crushed, and the rest, if not crushed in its grains, is yet combined into a hard mass that defies speedy ignition; and in such case, if the gun does not miss fire, a heavy drawling inflammation is the consequence, sufficient to allow the bird either to get out of range, or otherwise to escape, by baulking the shooter in his aim. Only let a full charge of powder be thus ramrodded down, and then fired over a sheet of white paper, or of bed linen, or over the snow, and it is ten to one but nearly as many grains of powder will be ejected out of the muzzle unburnt as were ignited.

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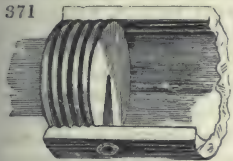

PLUG BREECHING.

2443. *The chamber plug* (*fig.* 372.) formed the first important improvement, by which the evil consequences we have stated were in some measure avoided, and misfires prevented from occurring so frequently. By the use of this plug the powder is but little compressed, or crushed to dust by the force of the ramrod or the hardness of the wadding; for a portion of it would reach no farther than the end of the rim of the chamber. Instantaneous ignition of the powder, however, was still liable to receive a check, and there was something still wanting to secure to the body of the powder a more immediate connection with the priming, as we shall see anon. *Fig.* 372. represents the chambered plug, where a hollow drain or antechamber is seen communicating with the touch-hole by a gutter, which runs at right angles with it. The length of these passages, however, must somewhat tend to delay the inflammation of the powder; and further, they are apt to become injured by wear also. We will not dwell longer on this plug, but when we have placed all the alleged improvements before the gunner, he may then judge for himself.

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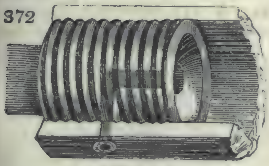

CHAMBER PLUG.

2444. *Nock's solid breeching* (*fig.* 373.), known in common parlance as Nock's original patent breeching, formed the next important addition to the gun; and it will stand as a monument to his judgment and ingenuity as long as guns are prizable articles; for, as Colonel Hawker justly observes, this laid the foundation of most of those important improvements in gun-barrels which have since appeared. Mr. Greener also does Nock justice when he says, that he "must have had in view the quickness of ignition and the generating of a greater strength of explosive power than was usually produced in the common breeched gun, by preventing the compression of the powder by the wadding, for the breech containing the whole charge, and being less in diameter than the barrel when the wadding is rammed down, it could be driven no farther than the end of the breech; so that, when the fire was communicated to the touch-hole, the charge would ignite almost instantaneously; I say almost, because it is not possible to ignite above a certain quantity of powder in a certain space; for, as soon as one-quarter is changed by the explosion into the state of a gaseous fluid, so great is its elasticity, that it instantaneously fills all the space left, and the remaining portion of the unexplored powder is compressed into a body." (P. 109.) The solid breeching certainly did effect this in a considerable degree as at first made, although it still left room for further improvement by its want of a sufficiently expansive cavity of powder chamber, and also by the great length of communication and irregularity of the limits of the line between that and the touch-hole. The section of Nock's breeching (*fig.* 373.) presents the breech screw as adapted to the breech of the barrel; the powder chamber is seen communicating by a contracted portion with the antechamber; the screw opposed to the antechamber points to the touch-hole. It is much in favour of this gun, that so good a judge as Mr. Baker should say of it, that it is an invention that has never been surpassed; and indeed, if we consider the amount of improvement made at that one step, and were to exclude all that has been added since, we also should agree fully with Mr. Baker.

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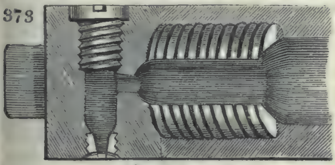

NOCK'S SOLID BREECHING.

2445. *Mr. Joseph Manton's breeching* (*fig.* 374.) followed that of Mr. Nock; and as his advertisement of its merits is admitted to present a faithful picture of the same, we will give it as it stands; except that we shall take, what some might call an Irish liberty with the placard, and give the last first. "Mr. Manton's improvement to double guns (our illustration is on a single gun) consists in placing two sound barrels together, which gives them all the solidity at the breech that is needful, and which entirely removes the danger without widening the locks; nor has there been, it is said, an instance of one of these guns bursting." "The advantages derived from this improved breeching are, that the whole charge of powder is exploded; consequently guns on this principle shoot much stronger, and will fire oftener without cleaning than any other. The locks of a double gun are also brought nearer together, by which the cocking of the left lock is rendered more convenient. In cleaning the barrel, the rod goes down to the bottom of the breech; and in wiping it dry, forces the air through the tube in the centre with such violence, that no damp or oil can be left behind. The common mode of joining double barrels is to file half the substance of each barrel away in the middle, so that the partition between the two barrels is only half the substance of one barrel, and is soldered together with grain tin and lead; it is therefore no wonder so many double guns burst." Fig. 374. presents an outline of this breech, the letters of reference being the same with the last, we shall not repeat them here. Manton's breech, we may remark, is particularly adapted to the flint-gun, by its tendency to prevent the explosive gas from escaping by the touch-hole: in the percussion-gun, this escape is prevented by the peculiar construction of the cock. A very important improvement in Manton's gun was the removal of useless matter towards the breech, by which the lock was brought much nearer to the centre of the breech. That which most detracts from the merit of this breeching, we conceive to be the length and contraction of the antechamber, and its acute flexure to arrive at the touch-hole, both of which must retard that instantaneous ignition of the powder which it was principally intended to assist. Nevertheless, the principle has been adopted by many of our best gun-makers, and is much approved of by scientific and observant sportsmen. Mr. Manton's celebrity has been great, and we know how much it is the fashion to be influenced by the representations of a popular artist, to such a degree as to prevent our own critical examination of the matter in all its bearings. Few can estimate Mr. Joseph Manton's abilities more than ourselves; we knew him personally, and we know that his exertions to improve the machinery of fire-arms were great, and in most instances successful; insomuch that they were, after an unsuccessful opposition, adopted by other excellent gun-makers. Nevertheless, it is neither to be supposed that they were perfect, nor that they left no room for further improvement. The noontide glare of the sun, how glorious it is! and yet we cannot pronounce the face of that great luminary spotless; for the critical observer, by mechanical aids, discovers that it presents dark spots. Mr. Daniel and Colonel Hawker, both practical sportsmen and observant judges, are certainly very warm in their advocacy of Manton's improvements, and with great reason. No one of that day, Nock excepted, ever did so much for the fowling-piece: but we must not be led thereby: nor is it asked of us to suppose, that his additions have left no room for further valuable additions to this favourite article in sporting; we fortunately have abundant proof to the contrary. Nevertheless, both the excellent sporting judges we have alluded to have been somewhat ridiculed for their warmth in advocating the value of Mr. J. Manton's alterations; but allowing that these alterations are not without defects, they have unquestionably proved very important in their effects on the art of shooting flying; and had he never done more than invent his *breech* and his *elevated rib*, his name would have been associated with the fowling-piece as long as a fowl remained to be killed by it. Neither can we but hold in respect the warmth of the eulogy bestowed on this star in gunnery; and therefore, with all our respect for Mr. Greener, as an able commentator on the gun in all its parts and appliances, both practical and theoretical, we cannot but consider him as too much prejudiced against Mr. Manton's breeching; which, if it did not go the full length of all that was wanted, it nevertheless pointed out the road thereto. Bringing the locks nearer together without risking the safety of the barrel, we again repeat, was unquestionably a great improvement of the double gun.

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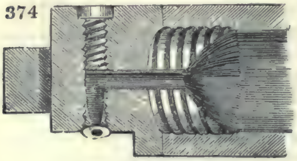

MANTON'S BREECHING.

2446. *Mr. Grierson's patent breech* also deserves notice and approbation. His placard tells us, that "The principle of this new-invented breech and lock for single barreled guns, pistols, and other fire-arms, is, that it has quicker and more perfect communication from the pan to the charge in the centre of the barrel, than any other construction, operates with the greatest velocity, is not so liable to hang fire, and is much easier cleaned. This invention is also of the greatest utility to the stock, by strengthening the weakest part, and besides admits the locks of a double gun nearer together, by which means the left lock is cocked with greater facility. This breech can be put to any well made gun, and the lock be altered to fit." We certainly think this breech may be considered to be an improvement on that of Mr. Manton's, inasmuch as it remedies many of the defects we have noticed in that. Nor could Colonel Hawker's acumen be otherwise than favourable to it, and thus we find that he considers it to come the nearest of any to the meritorious solid breeching of Mr. Grierson's relation, Mr. Nock, senior. We think, however, that it did much more; for it shortened the antechamber by cutting off the acute angle of junction between it and the portion that meets the touch-hole. Colonel Hawker's opinion is, that this breech would have approached still nearer to perfection, had the centre hole or chamber been as narrow as that of Mr. Manton's; which form, the colonel considers, has the effect of a more rapid ignition of the body of the powder charge. Much as we are disposed to coincide with most of the opinions of this truly ingenious writer, we have some doubts of the propriety of this forcible penning up of the first expansive effort of the gas; we would, on the contrary, rather widen its track, and shorten its road to the shot, on which its first expansive efforts should be spent, and not on the breech part of the gun; for this in our opinion rather tends to propel the gun backwards and increase the recoil, than expand forwards and expend its strength in ejecting the shot. We would warmly advocate every attempt at real improvement in gunnery; but it might be well to inquire whether, in carrying on our experiments to an inordinate length, we may not also increase, to an inordinate degree, the noise and painful recoil which we experience on firing the detonator, and thereby defeat the other general purposes to which they were intended to apply? For we may be assured, after all, that to the majority of steady sportsmen ease and safety are essential towards a continuance of their practice. We are not now alluding to the increased force with which the detonator acts; for the principles here laid down were maintained before the percussion-gun became universally employed.

2447. *Mr. Wilkinson's parabolic breeching* (*fig.* 375.), on the principles we advocate, is certainly favourable to a ready and uninterrupted ignition of the powder. It has been wittily called the jack-boot breech by Colonel Hawker; and we cannot but admire the proportions of the swelling calf, which are not injured by a tightened garter below the knee, after the servant-maid fashion. Here we think the colonel shines, by giving an unbiassed, yet critical opinion on it, exactly adapted to its merits, which, though considerable, yet, under the views he is known to take of this subject, he can only allow to be experimental. The retardation of the too sudden ignition of the powder is here much moderated, on which the colonel observes that experience will best show whether this, or opening the barrels behind, is the best mode of gaining strength by retardation.

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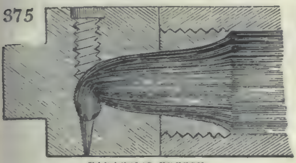

PARABOLIC BREECH.

2448. *Mr. Greener's improved breech* (*fig.* 376.), from what has been said of the last, may be supposed to meet our views in many, if not in all respects. It is simple; it also facilitates ignition, as well as a rapid and forcible ejection of the shot. Mr. Greener professes to offer it merely as a slight improvement of the original patent breech, which he thinks was discarded without any good reason; and, on the contrary, he observes: — "The only faults I can find in the construction of the original patent breeching are, first, that the avenue (as in the parabolic breech), through which the powder has to pass, is smaller than the antechamber in which it lies; secondly, I object to the uniformity of diameter in its chamber from the bottom, which is a half round, to the top, on which the wadding lies. In my opinion it would be an improvement, if it were made gradually to increase in dimension from the point where the powder is first ignited, to that part where the breech joins the barrel inside, somewhat in the manner depicted in the cut," *i. e.* in the figure of his own breech (*fig.* 376.), by which the reader will readily enter into the intentions introduced to our notice by Mr. Greener's figure of his improved breech, as purposely formed to increase the diameter of the avenue through which the powder has to pass to the antechamber, which we greatly approve of.

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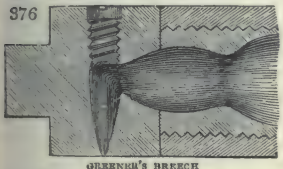

GREENER'S BREECH

2449. *The false breech*, we need not inform even the tyro is that metal rim which is screwed into the stock, presenting a cavity proportioned to the projection or "butt" of the breech of the gun. The false breech should be well fitted into the stock, but, more particularly, its surface should so fit the breech surface of the gun, as to afford it a steady support, by which recoil is lessened, and yet a resistance favourable to the shooting of the gun is increased.

2450. *The touch-hole of a gun* (we now allude to the flint-gun) has occasioned as much difference of opinion as regards its form, situation, and dimensions, as almost any other part of the piece; some having advocated its being made large enough to prime itself, without remembering that the opening which would allow the powder of the barrel to escape into the pan, would also let out a double or treble quantity of explosive gas, and thus greatly injure the shooting force of the gun. The touch-hole we approve of should be rather larger in dimensions towards the pan than towards the barrel, in the proportions of one-sixteenth of an inch to one-eighth. This conical form would allow of a few fine grains of powder to enter the touch-hole, and serve at once to preserve the charge within, and to conduct the ignited gas inwards also. A steel touch-hole rusts, a gold one often becomes loose, and therefore flint-guns are now very frequently fitted up with platina touch-holes, which, in a great measure, obviate all these inconveniences. The touch-holes of our best made guns are counter-sunk, and for the convenience of inserting them, the solid breechings are perforated directly opposite. This perforation, after the touch-hole has been inserted, is filled up by a screw. (See figures of breechings, p. 747—749.)

Sect. IV. *Of Gun-locks generally.*

2451. *The gun-lock*, in importance, is scarcely inferior to the gun-barrel; and however foreigners may boast of the superiority of the Damascus and Spanish barrels, we believe they will not venture to compete with us in the manufacture of gun-locks, which, under our superior artists, have undergone more important modifications than the barrel even. How vast the difference between ignition drawn from a common match, or that ground by rotation of flint and steel, to the smooth workings of the machinery, and magical production of fire by a modern gun-lock.

2452. *The first spring-locks*, it is said, were made in Nuremberg, in the beginning of the sixteenth century; and could the early makers see to what perfection they have been brought, they would regard them with much amazement. A well finished gun-lock of the present day is, indeed, an elegant toy, and a curious piece of mechanism, particularly when compared with its early types. We have amused ourselves for hours even in taking to pieces and putting one together, and we, like Mr. Greener, have almost as much pleasure in the harmony of the action of the various parts of a well filed lock, as some might experience from a well tuned musical instrument. "To me," says Mr. Greener, "there is a superior music in the tack of the scear on the tumbler and the fine elasticity of the main-springs, moving with a sort of fine oily feel, though light, as sharp as the lightening playing in the heavens." Where is the real sportsman that does not enter into the spirit of this quotation? Mr. Greener also says, "There is a great degree of skill displayed in the making of locks, though to the casual observer it does not appear. On the simple hanging of the swivel depends all the sweetness of the play of the main-spring; and on the placing the hole for the scear-pin depends the sweetness of the scear playing on the tumbler. Many who now pass for excellent workmen would find this a difficult undertaking, simple as it may seem, without a pattern by which to work. All locks for percussion should have the greatest strength of main-spring at the moment they strike the nipple, or what is termed when the lock is down. On the pitching the scear depends the cutting of the bents; and on their formation the danger of the lock catching at half-cock, when the trigger is made to pull easy: but these observations will be understood by a lock-maker better than I can explain them. The quality of all locks depends on the price they cost filing; and without you pay the workman a proper remuneration, you may rely on having them somewhere inferior, or in accordance with the price, which it requires a workman to point out; so that, without a doubt, any person, if not a first-rate judge, is completely resting on the honesty of his workmen." (P. 137.)

Subsect. 1. *The Flint-lock.*

2453. *The perfection to which the flint-lock arrived was great;* so great, indeed, that it is not to be wondered at that it should for some time have retained the regards of some of the older sportsmen, who had gradually witnessed the accomplishment of so much perfection of mechanism with so much toy-like elegance of construction. Those who had long been accustomed to shoot with a flint gun could not but look at its fair proportions, and particularly at the internal mechanism of its costly lock or locks, without pleasure, and perhaps complacency, as the force of old habits would for some time at least keep it before their eyes. We remember an excellent old sportsman — one of the best shots in his county — who resolutely adhered to them to the very last, alleging that they were equal to every species of destruction that could be required, and that any improvement was only an advance in the art of unnecessary slaughter. He was one of the good old-fashioned school, who liked to give everything a chance of escape. Even Colonel Hawker, the great instructor and pioneer of improvements in the art of shooting, threw his broad shield over ignition by flint and steel, but his great authority failed to save it from an early doom; and percussion locks, like the once derided railways and the all but incredible electric telegraph, soon asserted their supremacy. Still, with the gratitude due to old and faithful servants, we will not pass by the flint and steel without some record of its merits, and some memorial of its existence, which is very faithfully represented in the annexed engraving (*fig.* 377.). On this lock we will commence with the following pithy quotation from the gallant Colonel, the flint system's best friend: — "If the main-spring be too strong in proportion to that of the hammer, the cock is often broken for want of resistance; and if the hammer or feather-spring be too stiff, or should shut down with too much force, it becomes difficult to throw it even with a strong main-spring. This is not only, for the reason already mentioned, a sad fault, but the hammer by thus coming down escapes, in a certain degree, from the influence of the spring, and consequently loses its pressure on the pan; by which the priming is not so closely covered, and the hammer is apt to react, instead of obeying the main-spring; in a word, let your hammer shut down dull, and fly back smart. The main-spring, to be well regulated, should at first pull up very hard, and then draw progressively easier, because it requires an accession of force after it has recovered the first sudden escape from the scear-spring, otherwise it will go slow with a flint, and be liable either to cause a snap, or allow the cock to be blown back with a detonator." (*Loc. cit.* p. 44.) Very strong main-springs must not, however, be used without reference to the harmony necessary to be observed between force and resistance. One admirer of the strong main-spring finding that most of his black flints fly, and that his hammer face requires frequent repair, recommends the use of what he calls a hard white stone. We presume he means chalcedony, a siliceous substance, which yields fire, and is therefore cut into gun-flint shapes, and may be obtained from any gunsmith. Some natty sportsmen also use agate (little differing from the former), for the same purpose; but both are likely to wear the face of the hammer more than pure flint; and as they also are apt to fly, although tougher than pure flint, the sportsman should furnish himself with duplicates and triplicates also, as he would with flints. One out of a dozen will, however, sometimes last the fag of many days' shooting. The solid cock finds favour in the colonel's eyes, and it certainly has all the advantage he describes; but it is, we think, too clumsy to be used on any lock but that of a duck-gun. As a neutraliser of these inconveniences of breaking cocks and wearing hammers, we would strongly recommend every prudent sportsman to be supplied with an extra cock, hammer, and springs to each of his guns; and that each of such extras be stamped with the number of the gun it belongs to. This precaution is doubly necessary to him who has not a relay of guns, for here the accident of a fractured spring is most serious, particularly in the early part of the season, when the gun-makers are in full employ. As regards a hammer injured by wear, we would hint that the battered face can be repaired without the expense of a new one: it can be refaced by any country gun-maker, although such an one may, to make a seven or ten-shilling job instead of one of half-a-crown, attempt to convince you it cannot be done: it can be done, and easily too. We cannot too strongly enforce attention to the state of the flint-lock in all its parts, but particularly of the cock, the hammer, and the springs, which regulate their action. The temper of the face of the hammer is very important. It must be steeled, and yet apt to receive the impressions of the flint, which in its fall separates some small ferruginous portions, which, if struck with sufficient force, ignite instantaneously with brilliancy, and emit a whizzing sound as they descend to the pan. It is not, therefore, the flint that yields the fire, but its sudden collision with the steel that produces it by occasioning combustion in the small particles of steel which become detached. Thus, if a gun or pistol have its priming burnt over a sheet of white paper, the steel particles which were separated may be then collected, not in their original state, but in one of semi-vitrification, from the intensity of the heat generated by the sudden and violent collision of these media. By this the several phenomena produced by collision between flint and steel are explained. The iron particles separated from the soft hammer are too large to be properly ignited, and those from one that is too hard are too small to remain sufficiently heated to explode the priming. It must be therefore a particular state of tempering of the hammer that best answers for the ready ignition of the priming. Concentration of the fire sparks is a great object; they may fall in a slanting direction, unfavourable to ignition, or by their disgregation prove inert. They should fall directly over the priming.

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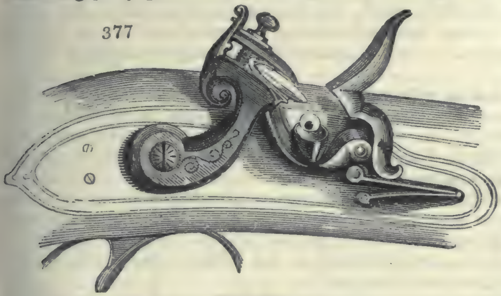

FLINT-LOCK.

2454. *The hammer* of some gun-lock-makers slides over a wheel in the feather-spring, and of others the wheel is placed in the hammer, and runs over a bridge on the spring. We ourselves prefer the latter plan, patronised and recommended by Manton, because it assists in raising the hammer above the danger of interfering with the course of the sparks into the pan, the principal object of which is to prevent misfires. "The part next the touch-hole is hollowed out and perforated with a small hole, so as to let the air pass through, but not th powder. The seat of the hammer is also grooved out from the perforation to the edge, so a to let the air, but not the powder, out of the pan." By this improvement the powder in th barrel, by the air being allowed to pass, is forced into the perforated receiver, so that th touch-hole is always full of powder, by which means the flashing or hanging fire i prevented.

2455. *The pan* also must be looked to with regard to its form, situation, and inclination It should present a cuplike figure, rather elongated, and of such depth as to contain th requisite priming without compressing it. In situation it should be rather below th touch-hole, for if it be on a level with it, the charge does not receive its ignition so quickly from the burnt priming as when it rises to it. The pan should be a dead level, and i close contact with the barrel. An improvement in the pan, originating with the Mantons and now used by most of our best gun-makers, intended to keep the powder dry, and prevent misfires, consists in the passing a current of air through the priming without displacing it. Mr. Egg, we believe, is very favourable to this addition to the pan, and he is said to shine much in his method of manufacturing it.

2456. *The trigger* equally requires attention; particularly it is necessary that the triggers of every gun the sportsman possesses, should act by the same quantum of pressure. If such be not the case, and supposing that a careless person after firing a week with a gun, the trigger of which was very fine, was to go out with one which required a strong pull, it is ten to one but he would, after raising the gun to his shoulder, being impressed with a belief it was on half cock only, take it down again, and thus lose his shot, as we have ourselves several times seen done. On the other hand, when a person used to a hard pulling trigger, attempts to shoot with a soft one, he is liable to fire his piece before he has levelled it with his game. In the best guns the triggers not only are gauged to a certain resistance, but are also kept in their proper situation by small springs, which require to be moved when the lock is in action.

2457. *Gun-flints*, we hardly need observe, are comparatively now little in request. They are procured in many localities where chalk abounds, and are collected in solid lumps, from which they are broken, or rather shivered, into shape from these larger masses. As a matter of trade the supply is principally derived from Wiltshire and Norfolk. Those which are black being most esteemed, as proving the most cohesive. When putting a flint to the gun-lock, place it with the flat side uppermost, between a fold of leather; and if it be wished that the flint should strike the hammer lower, reverse this placing of the flint, but if it be desirable that it should meet a still higher part of the hammer, place a double piece of leather underneath it.

Sect. V. *The Percussion or Detonating System of Gun Firing.*

2458. *Percussion versus flint*, was a cause some time before the public, and had the magazine lock remained attached to the percussion gun the cause might have remained undecided to this day; but time, which trieth triggers as well as truth, has established the superiority of the percussion principle over that of flint and steel. Indeed, a gun with a flint and steel lock has become quite a rarity, seldom seen but in the rafters of farm kitchens, or in the hands of boys frightening crows. No poacher would condescend to use one. Still, percussion locks had strenuous professional opponents in the first instance. Mr. Baker, a gunmaker of repute residing in Whitechapel, who wrote an ingenious treatise on the rifle, of which he was a famous maker, was one of its most ardent opponents. Indeed, a long patent guarding its interests, most of the gunmakers were opposed to it, and every exertion was made to bring the percussion principle into disrepute. Colonel Hawker, as we said before, was early in the field, and never, we believe, became very cordially attached to detonators. Be it understood, however, that we are not prepared to deny but that some of his early objections had much force. We believe, however, that before his death Colonel Hawker had adopted the use of detonators in his own sporting. Mr. Baker also admits the superior force with which the shot is thrown by the percussion-gun, and yet he asserts his conviction, that more execution will be done at an equal distance by the flint-gun. W cannot, by any method of ratiocination, distinguish rapidity of ignition of the powder from force generated by the gaseous expansion, which appears in the percussion principle o ignition to be so intense as to require a stronger barrel than that heretofore necessary This being premised, we ask, Will not the forcible disturbance of the shot, and their hasty ejection from the barrel, be in proportion to the rapidity of ignition? and will not th same force propel them both quicker and farther than from the gun on the flint principle Nevertheless, to this time there are intelligent sportsmen (and among them was Colone Hawker), who believe and assert also their conviction, that flint-guns shoot stronger than thos on the percussion principle. Mr. Greener, in his work on the gun, from experiments mad by him, is able positively to deny that the rapidity of the ignition by the percussion principl tends to drive the powder out of the barrel unburnt, as the opponents of the principle assert The experiments he has made have brought him to the following conclusions, which wil assist a little to harmonise these very variable opinions; and although they leave the flint-gu far in the rear, yet they exonerate the dissentients from the tax of frivolous opposition. "I found," he says, "that with moderate charges the percussion gave the greatest range; but when the charge was increased to extreme, the flint-gun gave eleven yards farther on the average. From these experiments I came to the conclusion, that where the charges were less than either could burn, the percussion was undoubtedly better than the flint; but if the charges were more than either could consume, the flint was better than the percussion. The reason is this: — when the charge is small, a tenth part of the flint-gun's charge escapes through the touch-hole, and, consequently, she cannot have the strength the percussion-gun has, where there is no escape for the explosive matter. There is, however, no question when the charge is larger than either can burn; the flint-gun has the advantage from the greater length of time her charge remains in confinement, and which, consequently, secures the burning of a greater quantity of powder." (P. 126.) Again: "In a flint-gun, when the powder is ignited, it keeps rushing out of the touch-hole, there being no hinderance that way; and the train, as we may term it, has to keep burning, until a much greater degree of force is generated than can escape through that vent, or a sufficient power is created to move the body of the charge. In the percussion-gun, as soon as the fire is communicated, the touch-hole is partially closed, and an obstacle presented to the escape of the powder that way; so that a force equal to move the charge is generated in one half the time. It is this circumstance that constitutes the difference between the flint and the percussion-gun." (*Loc. cit.* p. 127.) Again, alluding to Colonel Hawker's opinion on the percussion system, we are happy to observe that he is gradually rounding the point, and admitting some of the excellences of this system, and some of the valuable properties it possesses over the flint ignition. In the latter editions of his work, after canvassing with candour the pros and cons, he nevertheless, to use his own words, "still maintains that the detonator has not the power of the flint-gun; and yet (he says) I admit, that, by a different mode of boring, the percussion-guns are now wonderfully improved, insomuch as to be almost equal in strength to the flint-guns. Nay, I will say even more: give them an increased weight of metal, which to many is a trouble to carry; retard the charge, and thus increase the recoil; and then I admit, with the very great improvement that has lately been made in barrels, they will, no doubt, even beat those flint-guns which were manufactured a few years ago; but, without all this, they would be found as inferior as ever to flint-guns." (P. 94.) As regards ourselves, the superiority of the percussion principle in almost every point of view is, we believe, unquestionable; and the same feeling appears to us to pervade the minds of the majority of sportsmen. The recoil of the percussion-gun is complained of by some, and its sudden and sharp report by others; but its quickness of ignition amply repays these by its certainty in snap shots. With the flint-gun these shots are often lost, for the cock has first to strike the hammer, and to elicit sparks therefrom. In the next place, these sparks having fallen on the powder, ignite it quicker or slower according to its quality, its dryness or moisture, and whether it is free or impacted together by pressure from the hammer. In appearance the percussion certainly surpasses the flint-gun, particularly in the simplicity of its lock, which is freed from those troublesome appendages, the hammer, hammer-spring, and pan (each of which increases its expense), the complexity of structure, and the liability of the lock to be out of order. It being so nearly waterproof also gives it a great advantage over the flint-lock; neither are the few misfires which occur with this, in proportion to those which happen to the other, trifles in the scale. We will now, while it is present to our memory, warn the unwary against incurring the danger which results from having a flint-gun altered to the percussion system; for unless the gun so altered be one of unusual substance, and perfectly sound also, it is most imprudent to attempt it. The force exerted by the rapid ignition of powder by detonation is too great for the resistance which any but the stoutest barrels used for flint-guns can bear It may be interesting to some sportsmen to be aware, that guns are occasionally made which can be used either as flint or percussion; still, like most things meant to answer two purposes, they are seldom to be relied upon for either.

2459. *Experimental trials*, to determine the comparative advantages of the percussion and flint principles, are not wanting to increase our attachment to the former. Among these Mr. Nock's are the most satisfactory, both as regards the source they are derived from, and their results. "The experiment," he tells us, "was made in December last, with two guns, and on three successive days. The guns were on the percussion principle, and made by myself. I first stopped up the nipple or touch-hole, and into the vent-hole I screwed a small pan with a train of gunpowder, in imitation of a flint-gun, and fired my first shot in that way, igniting the powder in the pan with a match. I then put in the nipple, or touch-hole, and fired the second shot with a copper cap; and so changed from one plan to the other alternately." Our limits will not allow us to enter into the full detail, satisfactory as it is: but the average of the result was garnish-flint, 90—4; percussion, 94—6; strength-flint, 23—3; percussion, 26—1. We would, however, particularly refer the reader to the *Sporting Magazine*, vol. xx. New Series, p. 148. where the whole trial is detailed at length in a letter from Mr. Nock himself. Favourable, however, as we are to the percussion system, our grand object is truth, on which side soever it may be. We have much dependence on the trials of Nock, as we know him personally; and we have no reason to think him otherwise than veracious and unprejudiced. Colonel Hawker's veracity no one can doubt,—nor could he by possibility have any interest in supporting one principle against the other. Consequently, we are puzzled, when we learn the results of his experiments, which were numerous and well conducted, as will appear by a reference to his work on *Shooting*, which we recommend strongly to the reader's notice. As regards these experiments of Colonel Hawker, our limits will only allow us to state that they, most of them, tended to give the superiority of shooting to the flint-gun; but, as we have already observed, the Colonel found it hard to give up an old favourite: and his constancy does him credit; but his evident admissions, of later date, in favour of the detonator, do him much more. In a few years a flint-gun will, we think, be no small curiosity.

Subsect. 1. *The Percussion Gun-lock.*

2460. *The early percussion gun-lock*, and the use of percussion powder, to supersede the necessity of using a flint and steel to ignite the priming of the charge, were the invention of the Rev. Mr. Forsyth of Belhelvie; whose advertisement giving out, as it did, that it was to fire without flint, flash, or smoke, raised the expectation of the sporting public to an extraordinary height. It is pointed at as a curious coincidence, that, as we are said to owe the invention of gunpowder to a monk, so also we are indebted to a member of the church for this important addition to our explosives. The magazine of Forsyth, it must be acknowledged, was a most ingenious contrivance; but, unfortunately, it was not only defective in operation, but also complex, expensive, cumbrous, and unsightly. The principle, however, of igniting the powder by means so much more simple than by flint and steel, proved sufficiently attractive to overcome the powerful opposition which interest had raised against it, and at length to bring it so triumphantly through, that now a flint-gun is comparatively rarely seen. The march of the detonator would not even have lingered as long as it did, but that the Forsyth patent did not expire until April, 1821. Then talent having fair scope, one improvement followed another in rapid succession, until the copper cap appeared to crown the whole; and whether we are indebted to Gill as the discoverer, or as the medium only of handing it to us, it is not too much to say that the percussion-gun owes much of its popularity to that source. When, also, the striking point of the cock of the percussion-lock was hollowed out, and the nipple also surrounded by a protecting metallic ring, the last strong hold of the dissentients was lost to them; and indeed until then it could not be denied, but that the detonating lock was dangerous to the eyes of the shooter from small copper particles of the shattered cap striking them, as has occurred.

2461. *The Forsyth, or magazine lock,* with which the percussion principle of ignition was ushered into notice, differed very considerably from that now in use; and we believe that its staunchest friends must allow, that, however ingenious in principle it might be, it was equally cumbrous and unsightly. It was also complex in structure, and uncertain in action, which defects finally carried it to the "tomb of all the Capulets." *Fig.* 378. presents an outline of the external parts of this lock (*a, b, c, d*): *a* points out its magazine for containing the percussion powder, of which it was to hold about thirty primings; *b*, the roller round which it revolves is screwed into the breech of the gun, and by a small hole permits of a communication between the magazine and the breech chamber of the barrel, for purposes to be explained. This small hole allows of the passage of the percussion priming powder; and, by the means we have pointed out, it also communicates with a channel which leads to the gunpowder chamber in the breech. The pan which receives the percussion priming is directly above the small hole in the roller, (*c*); *d*, the steel punch, which corresponds with the nipple, or pivot of the improved percussion-lock. This being movable within, and its lower end being directly above the pan, it follows that, when forcibly struck by the cock, or striker (*d*), it instantly ignites the priming, which, by its communication with the barrel, explodes the gunpowder also. The explosion being effected, a spiral spring raises up the punch to its former place. When the striker being raised, and the magazine turned round to a certain extent, again drops into the pan a determinate quantity of percussion powder, and the barrel-charge having been renewed, the gun is again ready to do the sportman's bidding.

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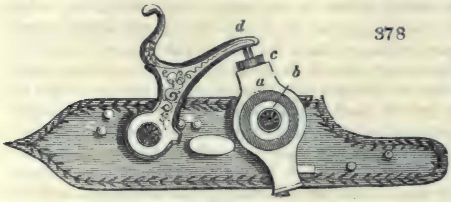
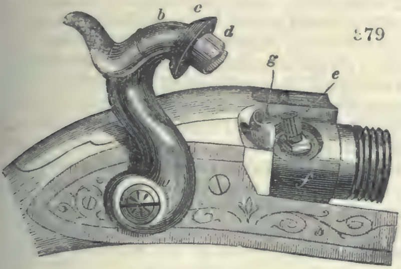


FORSYTH'S LOCK.

2462. *The internal mechanism of the percussion-lock* differs but little from that of the flint-lock, figured at p. 751.: we shall not therefore have to enlarge on that part of it. Externally, on the contrary, it is seen (*fig.* 379.), to differ greatly from the flint-lock; for, instead of a hammer, a hammer-spring, and pan, we see on the lock-plate a cock, or striker only, and as a substitute for the priming-pan we find a nipple, or pivot, which parts we shall proceed to examine separately. The simplicity with which explosion is brought about here is striking, nor is the certainty with which it occurs less remarkable. How very seldom did the best flint-lock make a misfire! With a good percussion-gun and good caps it may not happen once in three months. It is almost water-proof, which could not be said of the flint-lock, for the simple absorption of aqueous moisture from the atmosphere, without the actual contact of water, would very frequently disappoint the gunner's efforts.



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PERCUSSION-LOCK.

2463. *The pivot or nipple* is made either plain, or is encircled with small rings, to prevent the cap from falling off but when the caps are properly made they will, in most instances, prove sufficiently secure, without any ringing or roughing of the nipple. The pivot (*e*) is seen in *fig.* 379. screwed into the patent breech (*f*), and is perforated by a small hole, over which the copper cap is placed. This pivot-hole, though minute above, should increase somewhat in diameter as it extends downward, otherwise it will be apt to become choaked by rust. The square base of the pivot allows of its being unscrewed by means of a small wrench, for the purpose of cleaning and oiling, to prevent corrosion from the oxygen gas emitted by the firing. In the cut the nipple is seen to slope towards the striker (*d*); but in many locks it is perpendicularly set: it matters little, however, which way it is directed, so that it receives the surface of the cavity in the striker correctly.

2464. *Mr. Greener's improved nipple.* On the importance of the construction of this part of the gun-lock there can be but one opinion, and therefore we will take this opportunity of introducing to the notice of our readers one that is stated to be so certain in its effect, that a misfire can hardly occur. Mr. Greener's own words are, that "Only half a dozen trials with it will convince us of its superiority over any one of those in common use: the top of the nipple is made with a conical cup, extending a trifling distance down. At the point, the smallest part of the hole is to be found; from thence it keeps gradually expanding inside to the bottom. Around the top a space or margin is left, on which the percussion takes place; all the powder contained within this rim in the cap is fired and driven down the cone into the chamber. With this nipple I find that I can ignite powder at the bottom of the nipple; while in the old nipple no such ignition will take place." (*Greener on the Gun*, p. 131.)

2465. *Westley Richards's patent touch-hole*, or new steel primer, we will also take this opportunity of noticing, as being very highly spoken of by many crack-shots of our acquaintance. Colonel Hawker likewise tells us he has never known it to fail, and that his son "shot with it for a whole season without one misfire." That the reader may form an adequate idea of this improved touch-hole, we will present the heads of Mr. Richards's specification of it: — "The quantity of priming required being small, little flame and noise accompany the discharge; nor can any exploded matter, as that from the copper cap, reach the eyes. The communication of ignition with the charge is much shortened by this primer; nor can the touch-hole become stopped up by copper from the cap, as occurs in the usual method of priming. The primers are large, and consequently handy to apply in cold weather, and they can be detached in an instant; and further, every percussion-gun can with little trouble and expense be made to receive them." Mr. Richards lays much stress also on the expedition with which the gun may be charged with it, and of the comfort of obviating the difficulty and inconvenience by the mode hitherto practised, of supplying the charge with the fingers. "Nor is this," he observes, "the only advantage to be obtained by the use of this instrument, as by its means a much shorter tube may be applied, which will in a very considerable degree prevent the outward flash and lessen the report occasioned by its explosion, and thus effectually remedy the evil so generally complained of by gentlemen who have been in the habit of using the tube-guns." It is no small advantage that all copper cap-guns of other makers can have these patent touch-holes applied to them without interfering with the copper cap system, which Mr. Richards engages to do with the same care as he employs on his own. We will, however, from this digression on the pivot or nipple of Mr. Greener, and that of Westley Richards's new primer, return to a general description of the percussion-lock in all its parts.

2466. *The cock or striker* (*a,b,c,d, fig.* 379.) here, as well as in the flint-lock, is a very important agent, and is usually made after what is called the dolphin fashion. The extremity of the striker (*d*) is tubular; and thus, when the gun is fired, it falls directly on and over the nipple, the bottom of the cavity striking the copper cap, which is placed on the nipple or pivot (*e*). This extremity being originally made without any cavity, proved dangerous, and indeed destructive, to the eyes of several persons: it was therefore made tubular, and now the striker is further protected by a circular rim (*c*), and a breeching wall elevation also (*g*). Notwithstanding these contrivances, it is yet necessary to examine that the hollow in the striker be so made as that none of the fragments detached from the shattered cap can reach the eye of the sportsman. The centre of this cavity, and the centre of the nipple head, should exactly meet also when the striker falls, to insure the fire. It is very judiciously directed by Colonel Hawker, that, more effectually to avoid danger from the detaching portions of the copper cap, the main-spring should be of sufficient strength to prevent its flying up by recoil. This ingenious sportsman, to make surety double, recommends an upright striker; into this he inserts a tubular portion, with an effective shield of his own invention, both of which are fully described and figured in the last edition of his work on *Shooting*, p. 77.

2467. *The vent-hole.* "A detonator," says Colonel Hawker, "without a vent-hole, though perhaps it may shoot a little stronger, is very liable to corrode, and recoils most cruelly. The best vent-hole, to my fancy, is a fixed one of platina, similar to a touch-hole, as vent-screws, I find, are liable to rust in; and, unless lined with platina, are either soon choked up with rust and dirt, or blown too large by repeated shooting." (P. 74. ed. 8.) "How doctors do differ!" Mr. Greener objects to vent-holes altogether, "although they are now so generally attached to detonators. Instead of preventing misfires," he continues, "it must cause it by allowing the air, when ramming down the wadding to escape through it, and thus keeping open a space that should be perfectly closed. As to allowing the gas to escape that way, it cannot be; for if the nipple be filled with powder, it cannot get to that distance, and cannot therefore escape, except when a misfire occurs; and I imagine the existence of such a vent would not then be considered an advantage. In favour of the vent-hole it is urged, that a gun recoils very much without one. True; but then, Why does it not recoil so much with one? Because so much of the explosive matter is allowed to escape through the vent, and thus the percussion-gun is reduced to a level with the flint." (P. 131.) If, indeed, it can be proved that much of the explosive force does escape by the vent-hole, which we rather doubt, then, indeed, it would be better done without; and as two, and sometimes three, are found in one lock, it would be well that a course of experiments were set about to determine the question. Such sportsmen as have any fears of the vent-hole weakening the explosive force may find a substitute, as we have already hinted, by perforating the wadding, particularly that which covers the powder. What precedes is, we believe, a just representation of the percussion-gun, as received after the abandonment of the magazine-locks. Various alterations and, as they were called, improvements have been since added, the more important of which we shall notice as we proceed; others, not important, would have uselessly encumbered our pages.

Subsect. 2. *Of Safety Gun-locks.*

2468. *Safety gun-locks* have been the aim of many contrivers, but the complexity of some of them, the cost of others, and the carelessness of many persons in their sportings, have prevented a sufficient attention to the ingenious inventions which had been brought out. We will, however, notice a few of the most efficient.

2469. *The safety lock of Dr. Somerville*, which was intended to accompany the percussion principle of Forsyth, was no less ingenious than humane in its object. Dr. Ure says of it that,—"Its essential feature is a slide, stop, or catch, placed under the trigger (*a, fig.* 380.). It is pulled forward into a notch in the trigger by means of a spring (*b*) upon the front of the guard, which is worked by a key (*c*), and pressing upon the spring when the piece is discharged. In another safety plan there is a small movable curved piece of iron, which rises through an opening in the lock-plate, and prevents the cock from reaching the nipple, as represented in the figure, until it is drawn back within the plate of the lock when the piece is fired. To fire this gun, two different points must be pressed at the same time. If by accident the key which works the safety

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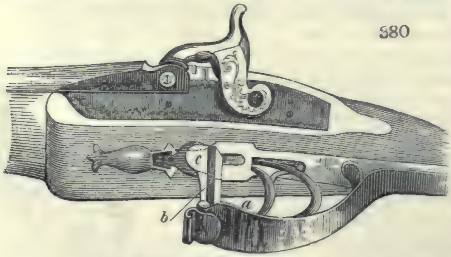

SOMERVILLE'S FIRST SAFETY LOCK

be touched, nothing happens, because the trigger is not drawn; and the trigger touched alone can produce no effect, because it is locked. The pressure must be applied to the trigger and the key at the same instant, otherwise the lock will not work." It is without doubt that this gentleman's intentions were most philanthropic, and equally so that his attempts were ingenious, although somewhat overrated, which always proves injurious to the success of any discovery, and even detracts from that degree of approbation which would otherwise accrue. The eulogists of Dr. Somerville represented the advantages of the discovery to be as numerous as important. The first was the preservation of human life; second, superior dispatch; third, the confidence it gives to the shooter; fourth, by forcing the shooter to place his left hand on the front of the guard; should the gun burst, the hand is still secure; fifth, it prevents the necessity of perpetually cocking and uncocking the lock. To these are added, the safety given by it to the point of the scear, and the impossibility of firing the gun accidentally, &c. &c. And yet, with all these advantages, the Somerville safety, although ingenious, was never extensively used.

2470. *Baron de Berenger's safety lock* is also one among the many inventions which have been patented, and is represented by *fig.* 381., which exhibits the lock and breech of a fowling-piece with a sliding protector on one of the improved plans; *a* is the hammer, *b* the nipple of the touch-hole, *c* a bent lever turning upon a pin fixed into the lock plate at *d*. The upper end of this bent lever stands partly under the nose of the hammer, and *e*, the trigger, which stops it from striking the nipple. A slider (*g*, *f*, *h*), connected with the under part of the gun-stock, is attached to the tail of the bent elver at *i*; and when the piece is brought to the shoulder for firing, the hand of the sportsman, pressing against the bent part of the slider at *g*, forces this back, and thereby moves the end of the lever (*c*) forwards from under the nose of the cock or hammer, as shown by the dotted lines. The trigger being now drawn, the piece will be discharged; and on removing the hand from the end (*g*), of the slider (*f*), the spring at *h* acting against the guard, will force the slider forward, and the lever into the position first described."

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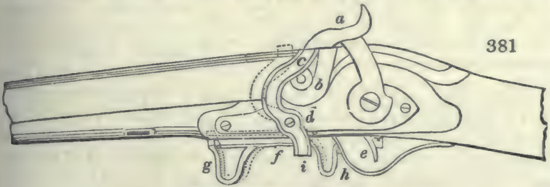

BERENGER S SAFETY LOCK.

2471 *Mr. Redford, gun-maker*, of Birmingham, proposes a modification of the lock for small fire-arms, in which the application of pressure to the scear-spring for discharging the piece is made by means of a plug, depressed by the thumb, instead of the force of the finger exerted against the trigger. *Fig.* 382. represents a fowling-piece partly in section. The scear-spring is shown at *a*. It is not here connected with the trigger, as in other locks; but is attached by a double-jointed piece to a lever (*b*), which turns upon a fulcrum pin in its centre. At the reverse end of this lever an arm extends forwards, like that of an ordinary scear-spring, upon which arm the lower end of the plug (*c*) is intended to bear; and when this plug is depressed by the thumb bearing upon it, that end of the lever (*b*) will be forced downwards, and the reverse end will be raised, so as to draw up the end of the scear-spring, and set off the piece. For the sake of protection, the head of the plug (*c*) is covered by a movable cap (*d*), forming part of a slider (*e*), which moves to and fro in a groove in the stock, behind the breech end of the barrel. This slider (*e*) is acted upon by the trigger through levers, which might be attached to the other side of the lock plate, but are not shown in this figure, to avoid confusion. When the piece is brought to the shoulder for firing, the fore-finger must be applied as usual to the trigger, but merely for the purpose of drawing back the slider (*e*), and uncovering the head of the plug; when this is done, the thumb is to be pressed upon the head of the plug, and will thus discharge the piece. A spring bearing against the lever of the slider will, when the finger is withdrawn from the trigger, send the slider forward, and cover the head of the plug, as shown. On the safety principle no one can look with more approbation than ourselves, but we apprehend the only real safety is in the care and precautions used by the shooter. With these alone the shooting of half a century would be without mishap: without them, no machinery can insure perfect safety. Dr. Ure observes,—"It is with pleasure I again advert to the humane invention of the Rev. John Somerville, of Currie. In April, 1835, he obtained a patent for a further invention to prevent the accidental discharge of fire-arms. It consists in hindering the hammer

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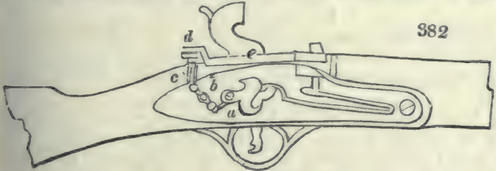

REDFORD'S LOCK.

from reaching the nipple of a percussion-lock, or the flint reaching the steel of an ordinary one, by the interposition of movable safety studs or pins, which protrude from under the false breech before the hammers of the locks, and prevent them from descending to strike. These safety studs or pins are moved out of the way by the pressure of the right hand of the person using the gun only when in the act of firing, that is, when the force of the right hand and arm is exerted to press the butt end of the stock of the gun against the shoulder, while the aim is taken and the trigger pulled. In carrying the gun at rest, the proper parts of the thumb or hand do not come over Mr. Somerville's movable buttons or studs."

2472. *A second safety principle* for percussion-guns, invented by Dr. Somerville, is thus figured and described by Dr. Ure : — " *Fig.* 383. is a side view of part of a double percussion-gun, and *fig.* 384. is a top or plan-view of the same, which will serve to explain these improvements, and show one, out of many, methods of carrying them into effect. A is the stock of the gun ; B the barrels ; C the breech ; D the nipples ; E the false breech, on the under side of which the levers, which work the safety studs or pins, are placed ; F is the shield of the false breech ; G triggers ; H the lock-plate ; and I the hammers ; all of which are constructed as usual : *a a* are the safety studs or pins, which protrude before the shield (F) and work through guide pieces on the under side of the false breech. The button-piece is placed in the position for the thumb of the right hand to act upon it ; but when the pressure of the ball of the right thumb is to produce the movement of the safety studs, it must be placed in or near the position (K); and when the heel of the right hand is to effect the movements of the safety studs, the button-piece must be placed at L, or nearly so. In these last two positions the lever (which is acted upon by the button-piece, to work the safety studs through a slide) would require to be of a different shape and differently mounted. When the hammers are down upon the nipples after discharging the gun, the ends of the safety pins press against the inner sides of the hammers. When this invention is adapted to single-barrelled guns, only one pin (A), one lever and button-piece, will be required."

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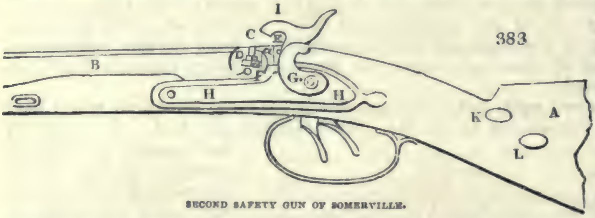

SECOND SAFETY GUN OF SOMERVILLE.

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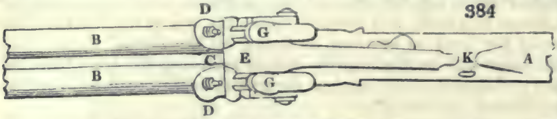

TOP OR PLAN-VIEW OF GUN.

2473. *M. Golding's safety gun*, which some years ago attracted much attention, was a modification only of that of Dr. Somerville. Indeed, if report speaks truly, these gentlemen united their inventions, and worked them under one patent, thus nullifying the old adage, that two of a trade can never agree.

2474. *Mr. Moore's improved gun* bears somewhat of the following character : —The lock, when fixed in its proper position, is entirely distinct from the barrel, thus securing the interior from wet or dirt. The works appear strong, and yet act with effect and ease; and further, it is described as being simple in construction, and that the various portions can be readily applied to any other lock.

2475. *The safety or gravitating stops* of Mr. Joseph Manton were some years ago in great repute. Whether, however, from the capriciousness of the public taste, or the trouble required to keep these little rolling stops sufficiently free from dogging, we are not aware; but certainly we hear but little of them now. The invention was an ingenious one, and in its application to double guns it was a very useful one also; for it entirely removed the danger arising from the very reprehensible custom of loading one barrel with the lock of the other on full cock. It also allowed the sportsman to carry both barrels on full cock, with the simple precaution of holding the muzzles of the gun downwards, so as to allow the *stops* to *gravitate*. In climbing up banks, or making way through hedges, &c. the determined sporter of the full-cocked gun, by merely inclining it a little, might indulge in his otherwise reprehensible habit with impunity. It would be still better to carry it quite upright, as was our own practice on all occasions when it might self explode. We have so much dependence on the safety of a good gun when carried erect, that we would avoid any one on the so named safety principles. The steady and well practised shooter needs no patent guards beyond his own habitual cautions in the carriage of his gun generally, and in the change of position it necessarily makes when it is going to be fired. Perfect coolness under every exciting circumstance is the best safety stop.

2476. *Safety trigger.* Mr. Moore, a well known and excellent gun-maker, has also a safety trigger or stop, which is said to be very certain, and not troublesome to keep in order. Many, nay most, of these safety plans are sufficiently effective; but the gunner begins with the simple gun usually, and his initiatory training being completed on that, he does not relish being hampered afresh with processes he was not broken in to. He should, however, remember "To live and learn," is a good motto.

2477. *Water-proof triggered lock* of Tatham, Charing Cross. This addition to our stock of new inventions consists of a new lock of a triangular form, placed under the trigger plate, in a hollowed part of the stock purposely made to receive it, where it is protected by the trigger plate. The cock occupies its old place, where it works on a silver plate that reaches to the guard. This gun has a handsome appearance, and Mr. Tatham shows many recommendatory notices of it; but it has not yet, we believe, commanded any very extensive sale. We remember to have seen something of a similar gun in France some years ago; but we do not by this mean to insinuate that Mr. Tatham has borrowed the idea. We allude principally to the circumstance of the works being rather under than either above or on the side of the stock.

2478. *Additional improvements in fire-arms* are at the present time very abundant, and we have reason to believe that many more are contemplated. After nearly forty years of uninterrupted tranquillity, the horrors of warfare breaking upon us twice unexpectedly, has taught us the necessity of being always prepared, and of arming our gallant and invincible troops with the very best weapons that modern science can invent or money provide. Lovell, Lancaster, Wilkinson, Colt, Dean and Adams, Forsyth, Guthrie, are all names identified with this important branch of our national enterprise, an enterprise that contributes as well to our protection and independence as to our pleasure. Indeed, the movement descends to our pleasures, for great interest is now taken in the perfection of both guns and rifles for sporting purposes. The editor of the *Field Newspaper*, a well-conducted weekly publication devoted to rural matters, sporting and agricultural, lately instituted a trial of the relative merits of the breech loaders and muzzle loaders, which, though not so satisfactory as it might have been, owing principally to the owners of the muzzle loaders demurring to the extra allowance of gunpowder to the breech loaders, in order to place them upon terms of equality, was nevertheless symptomatic of the progress making in these accessories to our amusements. The trials took place at Ashburnham Park and Kilburn Victoria Rifle Ground; and the general result was that the breech loaders, despite their extra allowance of powder, were beaten by the muzzle loaders.

2479. *Mr. Jones's new gun.* — A Mr. Jones put forth a bombastic prospectus some years since of a marvellous gun of his, which we may here insert: — "The leading characteristic of this gun is the perfect attainment of the *direct central fire.* The effecting of a direct central ignition of the charge in fowling-pieces has been a desideratum in gun-making for the last sixty years. It was first attempted by a very ingenious mechanist of Weimar, who pursued his object with great ardour for several years, but who at length abandoned it, not being able to accomplish it in an eligible manner. He was followed by many other gunsmiths of England, France, and Germany, but with no better success. At length the *percussion principle* was introduced, and it was soon perceived that this discovery appeared greatly to favour the accomplishment of the desired object, and it was now pursued afresh with considerable ability, and with more or less success, in almost every country in Europe. But although the *central fire* was actually effected by several persons, yet it was, in every instance, either so imperfect in itself, or combined with such defects, as rendered it of no value; and they were all (some of them after great labour and expense had been bestowed upon them) successively given up. The best attempt made in England, and which, by the bye, is not abandoned, is exhibited in a walking-stick gun, in which the central fire is effected by the action of a spiral spring; but these guns come rather under the denomination of *toys* than that of fire-arms. The nearest approximation to the true principle was made about eight years ago at Liège in Belgium; but even this, from the number and importance of its inherent defects, was a total failure. It therefore appears, from the time and the money expended, and from the number of persons who have failed in the undertaking, that there have been great difficulties found in the way of reducing this simple but important principle to successful practice; and, indeed, to this truth I can speak very feelingly; for although I have had the benefit of the lights which my predecessors in the attempt had thrown upon the subject, and I admit they were very important to me,either as exhibiting valuable ideas to be pursued, or errors to be avoided; yet, so numerous were the difficulties to be overcome, some of them making their appearance in the most unexpected manner, after the whole was supposed to be perfect, that it has cost me *three years* of unremitted application to bring it to the state in which it now is; and which, I flatter myself I may say, without violating truth or propriety of expression, is, *mechanically speaking*, a state of perfection. The gun has, indeed, now passed the *true-testing* ordeal! the only one that can be relied on in such a case, viz. *the practice of the sportsman in the field.* And it has given the most perfect satisfaction to some of the best *shots*, and most critical judges in England." To this explanation is appended notices of those illustrious persons who have patronised it. Among whom may be seen the Duke of Cumberland, who, after an inspection of it and conference with Mr. Jones, ordered one, and subsequently ordered another to match it. The Duke of Sussex was also pleased to express his approbation of the gun, and offered an assurance that, should the intended operation on his royal highness's eye succeed, he would likewise order a case of these guns. We are also informed that, among many other purchasers of rank, are their graces of Bedford, Buccleugh, and Newcastle. Mr. Jones's address continues thus: — "I have also been especially honoured by the distinguished patronage of several illustrious foreigners. His majesty the king of Sardinia, who is one of the greatest sportsmen in Italy, has, through the recommendation of his commandant d'artillerie, Colonel Lampo, to his excellency Count d'Aglie, his majesty's ambassador in London, been pleased to honour me with his commands for a gun. His royal highness the Duke of Orleans, after having passed two days at Versailles, where he went for the purpose of trying the gun, and where, his royal highness informed me, he had given it *a very severe trial*, expressed his entire approbation of it, stating at the same time that it was decidedly superior to any other gun he had ever shot with; and he not only purchased the one which he had tried, but honoured me with his commands to make him another to match it. I may further add, that M. Le Comte Edouard Montguyon and M. Le Colonel Gerard, the two aides-de-camp who attended his royal highness on the trial, both did me the honour of ordering guns for themselves. His majesty the king of the Belgians, who was staying at the Thuileries, saw the gun, and doubtless heard the account given of it by his royal highness the Duke of Orleans, also did me the honour to command me to make him a gun. The Council of L'Académie de L'Industrie de France, for the promotion of agriculture, manufactures, and commerce, examined the gun, after which they appointed a special committee. I have named these things for the purpose of showing that the gun has been critically examined and proved by competent judges."

2480. *Mr. Jones's prospectus* next proceeds to enumerate the advantages of this gun, which it is stated are of two kinds: — "Firstly, such as appertain to the gun itself; and, secondly, such as are personal to the user of it; which advantages may be briefly enumerated as follows: — 1. The obtaining of a direct central fire. 2. The certainty of not missing fire. 3. The superior quickness of the fire. 4. The superior strength of the fire. 5. The diminished recoil of the gun. 6. The protection of the eyes from the flying off of the copper caps. 7. The removal of the annoyance of the flash in firing. 8. The protection of the priming caps from wet. 9. The impossibility of blowing out the cones or nipples. 10. The impermeability of the locks to wet. 11. The great simplification in the construction of the locks. 12. The very superior mechanical action of the locks. 13. The superior strength of the stock. 14. The general superiority and greater durability of the gun." Mr. Jones next proceeds to explain these advantages at length; but although our limits will not allow of our giving them as they stand before us, yet we shall offer the pith of the intention of the author's meaning: — 1. *The obtaining of a direct central fire.* The central ignition of the charge is effected by making the cap the contrary way to the old one; that is to say, the detonating powder being put into a cup on the *outside*, instead of the inside of the cap, and the gun is primed by placing the cap on the end of the striker or hammer, the priming cap is therefore fired directly into the charge of the powder. 2. *The certainty of not missing fire.* This certainty arises from there being no angular or crooked channel. 3. *The superior quickness of the fire* which results from the foregoing. 4. *The superior strength of the fire* which no doubt arises from the ignition of the whole *body* of the charge of powder being more *perfect* and more *simultaneous* than it is in other guns. 5. *The diminished recoil of the gun.* Mr. Jones's opinion is, that the diminished recoil is only apparent, not real, and that it is to be accounted for by the retrograde action being immediately upon the end of the striker, which is supported by the main-spring; that is to say, the action is upon an elastic body, and that the blow of the recoil is thus softened into a mere push, which neither causes pain at the time, nor any feeling of soreness afterwards. 6. *The protection of the eyes from the flying off of the copper caps.* The great importance of protecting the eyes from injury will be appreciated by every one. *The removal of the annoyance of the flash in firing.* The flash being made to take place within the exploding chamber is perfectly invisible to the person firing the gun. This gives confidence and steadiness in shooting, and is, *at least*, pleasant at all times: but on many occasions it is of much greater importance; in shooting, for instance, in a gale against the wind, the gas and smoke from the caps are often blown into the eyes, making them smart severely; besides which, I have frequently known the unignited particles of the percussion powder thus carried into the eyes, cause a very considerable degree of inflammation. With this gun such effects cannot happen. 8. *The protection of the priming caps from wet.* The importance of keeping the priming caps dry is too obvious to need enforcing; and it is clear that no wet can get into the priming cap of this gun, because it is fixed upon the striker, which is within the hammer chamber, and which is closed by a sliding cover. 9. *The impossibility of blowing out the nipples.* This is a very important security. The nature of this gun is such, that the nipple can be screwed into the solid masses, forming the huts of the plugs, and by this means any *power of screw* may be taken, and the power which is taken is *double* that of the *resistance* of the barrels; that is to say, *half* the power which will blow out one of the nipples will *burst* the barrel; therefore these nipples can never be blown out. 9. *The impermeability of the locks to wet* is a very important point, and, as far as our judgment goes, on our inspection, it seemed, if not perfectly, at least very nearly attained. 11. *The great simplification in the construction of the lock:* its simplicity is certainly attained by there being but one lock-plate to two locks, and these also perform the offices of lock-plates and trigger-plate; in fact, there is great ingenuity displayed in this union of purposes with diminished machinery. 12. *Of the superior mechanical action of the locks;* 13. *The superior strength of the stock;* and, 14. *The general superiority of this gun.* On which points all we can say is, that a minute inspection of it must interest every one in its favour. If it does not perform all that is here alleged in its favour, it seems to have made a wide stride towards it.

SUBSECT. 3. *The Gunstock.*

2481. "*The length, bend, and casting off of a stock,*" Colonel Hawker tells us, "must be fitted to the shooter, who should have his measure for them as carefully entered on a gunmaker's books, as that for a suit of clothes on those of his tailor. He has then only to direct that his guns may be well balanced; to do which the maker will put lead in proportion to their weight; so that on holding each of them flat on the left hand, with the end of the lock opposite the little finger, he will find a sufficient equilibrium to make the gun rest perfectly steady on the hand." (P. 33.) There is so much good matter comprised in these few lines, that they cannot fail but to interest the reader. After his usual pithy manner, much is condensed into a small compass; we however cannot help fancying that the colonel had Mr. Baker in his eye, when he compares the necessity of the fit of the stock with that required of a tailor in measuring for clothes; for Mr. Baker employs a machine or stock gauge, by which he measures the outline of his customer as regards length of arm, neck, &c. so as at once to furnish each with a true fitting stock. There are, however, others also, who use the stock gauge; some likewise can fit by eye; and there are still more, who, provided you will buy, do not trouble themselves much about the fit. Mr Greener, following in the wake of the colonel, likewise observes, — "There is as much skill required in fitting a stock to the capacity of the different forms, shoulder, and length of neck, as in fitting a vest or dress-coat to please a dandy." Ay, and much more, good Mr. Greener! for a dandy is but a dandy, be his dress ever so monkeyish; but the sportsman, with a well fitting stock, feels up to acts of much enterprise, and can then shoulder his gun, and show how game is to be taken. When the stock is too short, particularly if it is rather straight, unless the head is carried very forward, the shooter will throw his shot above the object fired at. On the other hand, a long and crooked stock, especially when in the hands of a short person, will be apt to make him shoot below his mark. Where all depends on the judgment of the purchaser, let him try which piece he can at once raise to his shoulder, and cover any given mark without further adjustment. Let him also change the object of aim repeatedly; and if, by a voluntary effort of the arms, without farther alteration of himself or gun, he can *sight* the object readily, he will not do amiss to take that as his pattern. Let also the length of the stock correspond to the height of the user; thus in general cases it should be longer for a tall man, and *vice versâ.* With high shoulders and a short neck, a straight stock is the most handy; but it must be remembered that a straight stocked gun recoils the most. With low shoulders and a long neck, allow your stock sufficient curvature and proportionate length. An error in length, it may be observed, is less unfavourable to good shooting generally than when we employ a stock too short. If from the commencement of your shooting practice, you will accustom yourself to a stock longer than at first appears agreeable, you will gradually become used thereto, and will hold it more firmly than a shorter one. You will also gain another advantage, for by thus pressing the gun more closely to the shoulder, you will lessen the recoil to yourself, and assist the gun in its range also by the resistance you offer, as we have hinted at in another place. With regard to the wood that forms the stock, we think none exceeds the walnut tree: bird's-eye maple may please the eye of some, and it may, from its brittleness, serve the cause of the gunstocker. It is certainly striking, and should you choose such stocking, Colonel Hawker offers you some excellent instructions for staining it handsomely. In the shape of the stock, be careful that it be deep, and come out well at the toe or bottom of the heel-plate. It often happens that a sportsman meets with the gun of a friend, which, on shouldering, rises up as it were by magic, and points to a mark, as though it did it instinctively: it does so, if not instinctively at least mechanically, because it corresponds exactly to his height of shoulders, length of arm, or bend of neck, or of all these points conjointly. In such a case we would advise him to rest this gun on a thin board, and then to take an accurate outline of it from the heel to the breech, observing, however, whether the breech of the pattern gun be more buried in the stock than usual, or be more superficially placed than is common. Without such caution the pattern might not be in unison with the real inclination of the united portions of the pattern gun. When a gun does not balance well in the hand, but dips forward, the defect may be remedied by running in melted lead under the heel-plate towards its toe. By such placing less lead will be required, and it will rise easier to the shoulder, and balance better. It may also be well to state that a gunstock, either too straight or too crooked, may be made to yield somewhat either way by boiling it; but of course it must be done with much judgment, and it must be repolished and restained. We hardly need observe, that the butt of the stock is, in some guns, what is technically called *laid off*, or *cast off*, i. e. it receives an outward inclination from the hands of the maker, which has the effect of drawing the line of aim inwards: therefore be careful to inform yourself on this point, otherwise it may be sometime before you can accommodate your shooting to its line of aim. In examining the stock of a gun, observe also whether the tipping of it exactly reaches the lower rib. Some tip ends are finished with one loop of the ramrod, others are horn-tipped, and some with silver. It is an excellent caution of Colonel Hawker's, that between the end of the rib and the extreme end of the tip, be it finished off with what it may, a vacancy of the thickness of a shilling should be left, otherwise the recoil of the gun may injure the stock, or loosen the tipping, particularly if it be of horn. (See any of Colonel Hawker's later editions of his work on *Shooting*, for many excellent remarks on gunstocks.)

SUBSECT. 4. *Technical Names employed for the Parts of a Gun.*

2482. As these names are conventionally used by most sportsmen, so they should be borne in mind.

Bolts. — Irons which enter the loops or eyes of the barrel to fasten it to the stock.

Bridle. — A polished piece of steel which caps the tumbler, and is secured by two screws. It also receives the scear-screw.

Butt of stock. — The shouldered extremity of the stock.

Cap. — It covers the ramrod screw cap; is also used for the tip of the stock.

Casting off. — The outward inclination given to the butt of the gun, being intended to incline the line of aim inwards.

Chain or swivel. — A small catch suspended from the neck of the tumbler, to receive the extremity of the main-spring.

Chamber. — The central cavity within the breech to receive the powder. The *antechamber* is the smaller one which connects these with the touch-hole.

Cock. — In the flint-gun it holds in its jaws the flint; in the percussion-gun it is equally a cock, but there it is more frequently called the *striker*.

Cock-screw. — The screw that brings the jaws of the cock together.

Cup. — The cavity seen at the top of many of the improved breechings.

Escutcheons. — Ornamental pieces of silver to prevent the bolts from defacing the stock when the turn-screw or pincers are applied. Escutcheons are also used on other parts to receive initials, crests, shields, &c.

False-breech. — This receives the *hut* or nose of the breech when the barrel is fastening into the stock.

Elevated breech or rib is a top piece much elevated, first used by Mr. Joseph Manton.

Fence. — The part between the cock and pan which receives the solid cock.

Guard. — The bow which defends the triggers.

Hammer-spring. — That on which the hammer moves.

Hammer-bridle. — The part in which the tail of the hammer works.

Heel-plate. — The plate with which the butt of the stock is tipped.

Jaws. — The lips of the cock which hold the flint.

Lock-plate. — Supports the principal works of the lock.

Loops. — Eyes on the outside of the barrel, which receive the bolts that fasten it to the stock.

Main-spring. — That by which the tumbler is worked with the cock.

Nipple, or *pivot.* — The small iron pillar that receives the copper cap of the detonator.

Pipes. — Tubes to receive the ramrod.

Rib. — Central piece of iron which unites the barrels and receives the ramrod.

Scroll-guard. — An extension of the guard which receives the right hand in firing the gun.

Scear. — That which catches the tumbler for half or whole-cock, and being pushed up by the trigger.

Scear-spring. — The spring which holds the scear in the notches of the tumbler at either half or whole cock.

Side-nail. — A screw which fastens on the locks.

Sight. — A patch of metal, usually of silver, placed near the gun-barrel to direct the aim.

Spring-cramp. — A useful instrument, to assist both in taking to pieces and putting together the parts of the lock.

Tail. — The neck, shoulder, or arch of the hammer.

Top-piece. — This opposes the rib which unites the lower arches of the barrels. When it is very prominent behind, it is called the elevated rib.

Trigger-plate. — The triggers work in it.

Trigger-springs are small springs found in some highly finished locks, and are intended to keep the triggers close to the scear.

Tumbler. — The movable centre piece of a lock, which falls with, and is subservient to, the cock.

Tumbler-screw. — This fastens on the cock.

Vent-hole. — Sometimes there are two or three vent-holes, which are intended to let out the gas in detonator, and thus to lessen the recoil.

Worm. — The screw at the end of the ramrod.

SUBSECT. 5. *The Preservative Treatment of Guns.*

2483. *Some wise body tells us*, that if you want your work well done, do it yourself; and we are from experience convinced of the truth of this old adage. As regards a gun, too much care cannot be taken of it, particularly it requires much dexterity and great caution in taking it to pieces, and even more in putting it together again. To do it well calls not only for much mechanical skill, and a light but firm hand, but it also requires a personal interest in the matter that none but the owner is likely to feel, except he have a more than usually trusty and expert servant. We were never so situated in life as not to be able to command some assistance; but as regarded our sporting implements, particularly those connected with our guns, we never allowed any domestic to interfere in the least with them: nor do we remember ever to have had a gun cleaned by any other hand than our own. Thus it was that we never had a gun injured by an officious hard-handed fellow, who would do too much, nor one ruinously neglected by another who did too little. Every gun, if only moderately used, requires occasionally to be taken entirely to pieces. Twice a year is not too often to take out the breech or breeches wherever a gun is much used; the pivots, and the lock or locks, will require more frequent attention. The implements necessary are a bench, vice, turn-screws of various sizes, from the delicate one of an eighth to those of a quarter and a half of an inch, the latter for the turning the cock-screw, breech-screws, and for raising the bolts which secure the barrel in the stock. The spring-cramp is an essential requisite, and once more we would recommend every gunner, particularly one out of the immediate reach of a gun-maker, and not having a relay of fowling-pieces, to be furnished with duplicates of every part of his gun that is liable to fracture, as springs, cocks, and pivots. When using the spring-cramp, take care not to screw up the springs you cramp too closely, otherwise you may irreparably injure their elasticity. It is true that a very little over cramping would snap them, if they were really made of the very best tempered steel; but that is not always the case, and it is then the cramp may seriously injure their elasticity, without breaking them: in such case we might know little of the matter until informed of it by the defective action of the lock. Although we also have had much experience in the manipulations attendant on the care and management of the sporting gun, yet we are not so egotistical but that we readily yield the palm to Colonel Hawker. We cannot therefore, while we offer the results of our own experience, refrain from frequently alluding to the superior instructions on the subject offered by him, and from recommending them to the careful perusal of every young sportsman.

2484. *In taking off the main-spring*, first put the lock on full cock; next cramp the main-spring; this done, let down the cock, and the main-spring will fall off. When it is necessary to put the lock on again, first let the cock be left down; then hook the end of the main-spring on the swivel or chain; then move it up, and place it into its position on the lock-plate; this done, unscrew the cramp, and the lock is once more fit for action. When it appears necessary to take off the hammer, first shut down the hammer carefully, cramp the spring, until, by shaking the lock, the hammer is heard to rattle. Now go no further, but take out the screw behind, and the hammer will fall off. When required to put it on again, you have nothing to do but to replace it in its former situation; turn in the screw, and set the spring free. If it be wished to take the hammer-spring out, the hammer must first be released and the main-spring also, to enable you to get at the screw behind. The hammer-spring must then be cramped, till it is taken out and put on again to receive the hammer.

2485. *To take to pieces the small works of a gun-lock.* Be careful that you keep your several screws distinct; were they mixed, it is ten to one but that confusion, if not injury, would follow. Having commenced by taking off the main-spring, next unscrew and take out the scear, by half cocking of the lock; clasp the forepart of the lock, firmly pressing the thumb at the same time against the hinder part of the cock, directing it forward, while the scear and scear-spring, being now pressed together with the forefinger and thumb, will facilitate the taking out the scear-screw. Having done thus far, undo the two screws, take off the bridle, and then unscrew and take out the scear-spring; next unscrew and take off the cock, which will readily separate from the tumbler, if it be gently tapped or shaken: this done, take out the tumbler, and your lock is dismembered; but take great care that none of the separated parts are overlooked and allowed to become hidden by matters around, or by falling on the floor, a circumstance we have known to happen.

2486. *When it is required to put the lock pieces together again*, proceed as follows: first, put the tumbler in its place, and screw on the cock; next, do the same by the scear-spring; set on the bridle with the two upper screws; then put in the scear; but to open a clear passage for the screw of the scear, be aware it is necessary that you again, as before, press the forefinger and thumb on the scear and scear-spring, and also that you again push the cock forward, as when taking off the scear. Without this pressure it is not easy to get the hole in the scear opposite the hole in the bridle; and without this the sear-screw will not enter. We have seen this neglect, by a little inadvertence, require a gun to be sent ten miles to a gun-smith. But to return to our subject. Now let down the cock, to admit of putting on the main-spring, and the process is finished. It is evident that, with the detonating gun, there is not one-half of this trouble in disjoining the machinery. The pivot, or nipple, will require to be occasionally unscrewed and examined, that corrosion may not have done any injury; and further, to prevent disappointment from such a source, when a gun is purchased, remember to be provided with spare pivots, all critically adapted to the barrel. We hardly need remind the sportsman that, although it is but seldom that he will find it necessary to take all the works of his gun to pieces, yet it will be prudent, every now and then, to put a little pure olive oil with a camel's hair pencil on the pivot nail, or centre of the tumbler, on which almost all the works of guns of both kinds move. On the lock-plate under the works do the same. To those who use the flint-gun, it will be further necessary to apply a little oil under the neck of the hammer, which will flow to all the dependencies. Additional care, and more frequent attention, be it remembered, is requisite for the percussion than for the flint-lock, although the latter presents more complicated machinery than the former. This results from the corroding property of the gases evolved, being so much greater in the one than the other. Lancaster's printed directions given to gentlemen who buy percussion-guns of him, embody all that is required on this head, and are as follows: — "Always clean those parts of the barrels and locks that the detonating powder acts upon with a wet rag; then rub them dry, and leave them in oil, to prevent rust. The pegs should not be taken out too often. Before you take out the barrels, bring the locks to half cock. The locks do not require to be taken off every time the gun is used; once a fortnight is quite sufficient. Put a little fine oil to the parts where there is friction; but if the gun has been used on a wet day, the locks should be taken off to be cleaned and oiled immediately." It does occasionally happen that, by neglect or accident, a lock becomes rusted both within and without; in such case plunge it in warm water, and scrub it well by means of a hard brush, aided by very fine sand, emery powder, or levigated glass. Judiciously done, this will remove all the rust without any injury to the gun, provided it has not been very long neglected, or the rust collected having been occasioned by any actual corrosive matter, or by such continued moisture as deeply to abrade the surfaces which are intended to play on each other. When, however, this has happened, and the rust has corroded the metal deeply, scrape, scour, and file out the erosions, and if these fail, send the gun to the gunsmith. If the inside of a gun-barrel become rusty with a slight coating only of superficial rust, the same means may be employed; but we would recommend further, for security's sake, when the rusting is considerable, that the breech be taken out; and when the barrel has been scoured and dried, that it be held up to the light and carefully inspected. Should any specks remain, or any marks of indented corrosion be present, we recommend that these might be first well examined by yourself by means of an iron rod, with a bent process at the end. Should the result not satisfy you that it is very superficial, take it to your gunsmith, who, if he has any doubt on the subject, after a more critical inspection, ought to recommend that it be re-proved; or if you object to the cost, or are wanting in faith in the prover, you may prove it yourself by putting into it a charge and a half of both powder and shot, which, having put the loaded barrel into a small trench cut in a field or garden, ignite its charge by means of a train.

Subsect. 6. *Cleaning of Guns.*

2487. *Although the cleaning of a gun* is an important matter to the sportsman, there are scarcely any two who do it exactly alike. Gun-makers themselves differ in the methods employed, although there are few that do not sport more or less, and who consequently are interested in the preservation of the guns they use. Lancaster's directions for cleaning guns run thus: — "Place the breech end of the barrels in a bucket, in which there is cold water about three inches deep; then after wetting the sponge, cloth, or tow, introduce the rod into the barrels, and work it well; next apply the wire brush attached to the cleaning rod with some clean hot water, which will take out all the lead in the operation. This should be invariably attended to, as it is well known that washing only will not remove the lead. Wipe the rod and the outside of the barrels dry, and set the latter upright, muzzle downwards, for two minutes to drain, after which rub them out perfectly dry. Wipe the barrels out clean, then pass an oiled rag down the inside, and rub over the outside; leave them a little oily, which will prevent rust. The use of cloth is preferred, as not subjecting gentlemen to the serious accidents that have happened from leaving tow in the chamber. Brass, being in its nature softer than iron, allows of the brush being used without the possibility of injury to the barrels." Colonel Hawker also directs cold water to be used in the washing of guns, as more readily removing the foulness within; but, as he thinks, by the application of hot water it dries and adheres more closely. We, however, have never observed it to do so, for we never allowed the barrel to self-dry; neither can we quite agree in recommending, as he does, that fine sand or brick dust be used to remove the lead. Very fine steel filings are equally efficacious in removing lead or rust as sand, and are never injurious, which cannot be said of sand; the frequent scouring with which (as the dropping of water only will wear away rocks), must tend to thin the barrel. If a coat of rust have already formed, then use it to remove that; but, at all other times, the steel brush rod is in our opinion all that ought to be employed, and that only when the leading has become considerable, which it takes some time to do if the metallic wadding be used.

2488. *Our own method of cleaning a gun was as follows;* and be it observed that, if it was more operose than was actually necessary, it was a fault on the right side; for we look on a gun not as a field article only, but likewise as an elegant toy, and one that we would have always before us: — Being provided with a kettle of boiling water at one side, and with an empty pail on the other, our barrels detached from the stock, and our cleaning rod furnished with tow, we commenced our operation by pouring the hot water down each barrel. This done, we inserted our cleaning rod armed as we have stated, with which we well scoured out each barrel, ending by reversing them to discharge the foul water. Having poured down and ejected a second quantity of hot water, we wiped out the barrels with fresh tow, until, by the absorption of the tow and their own heat, they were to all appearance as dry within as without. But as in our opinion it was possible that some moisture might insinuate itself within the screw joints of the breech and touch-hole, we always let down an iron plug short of a red heat, which we moved up and down one barrel for half a minute, when we transferred it to the other for the same purpose. This done, and our locks cleaned, our gun was either packed up in its case, or looped up entire for the morrow's use, as circumstances might require. Whenever we cleaned our gun in the shooting season we did not oil it within, but if we were in a house at all damp we inserted the *armed rod*, an article which will be noticed anon; and we strongly recommend every one who prides himself on his care of his gun or guns to do the like. Further, should he wish all this to be done well, let him do it himself; and, so doing, his gun will be dearer to him for the trouble it costs him, unless he be idle indeed!

2489. *How often a gun ought to be cleaned must depend on circumstances.* Some guns foul sooner than others, as those not well finished off. Some powder, also, fouls more than some others; and small shot fouls a gun more than large. Some waddings are certainly more apt to keep the gun from fouling than others, but nevertheless washing or cleaning is required for all; and indeed, after every twenty shots, the gun should be cleaned. Even in the field this may be done, if a servant be prepared with rod and tow; and, when actually necessary, hot water can be procured at any cottage; and while the master is lunching, the attendant can do it. We very frequently wiped out our own gun when shooting on the moors, and always were repaid by the more pleasant and effective way in which it fired afterwards.

2490. *When a gun is put by for the season*, it should be particularly observed that it be placed where no damp can come to it. But as it is impossible in some houses to exclude moisture, we must consider what is to be done to lessen an unavoidable evil. It is useless to depend on the shelter of the gun-case: we may, it is true, oil the barrel within and without; but even through this the wet will insinuate in very moist situations. We have seen the barrels filled up with tallow, which certainly then renders them damp-proof, provided the tallow be very pure, and wholly without salt, which is seldom the case. To remove the tallow from within when the gun is wanted, is also a troublesome and a filthy job. The outer surface of the gun may be varnished, which will enable it to resist a winter's damp; and by placing a piece of shoemaker's wax over the touch-hole, and a good soft cork within the mouth of the barrel, the gun may be preserved in a damp situation even. Our plan of protection was, however, more effective, much neater, and the means employed becoming a part of the apparatus of the gun, were always present, whether the gun was in use or not. For a double gun this preservative consisted of two rods, turned true to the length, and very near to the diameter of the barrels. The smallest difference between the size of the rod and that of the barrel was sufficient to allow the rod to have a covering of white kerseymere, which was either glued on, or, which is better, was *fine drawn*, according to tailors' phraseology. Whatever barrels we had in our palmy days, were furnished with one of these rods, as some who will probably read these pages must remember. We further placed a morsel of wax over the touch-hole, and we then bid defiance to damp. It remains to state that this method is particularly applicable to guns when sent long distances by land or water carriage, during which wet and damp are then usually liable to assail them. We have heard of guns sent to the moors, which, on their arrival there, were some of them entirely useless, and others greatly damaged. With the precautions we have detailed, careful packing, and judicious selection of their means of transit, these disasters might have been prevented. By no means put a gun by for the season without having the breech or breeches taken out; to effect which readily, steep the barrels in hot water. Having removed, cleaned, and thoroughly dried both male and female screw, anoint the threads with pure tallow, and return them.

2491. *To remove rust from the inside of the barrel.* We have been hitherto endeavouring, by the rules laid down, to prevent any rust from accumulating; but as it will sometimes occur, in which case it not only casts a reflection on the owner, but also proves actually injurious to the gun by lessening the range, and preventing its garnishing evenly, let us consider how to restore it to its original polish. Have an ashen rod turned a few inches longer than the barrel, and so nearly of the size of the bore, as to allow of the following process:—Let one end of the rod be cut lengthwise, so as to make a slit of six inches long, into which slit enter as much fine emery paper as will completely fill up the bore of the barrel, taking care, in folding the paper tightly round the wood, that the emery surface is outward. Force it into the barrel by screwing it downwards from the top to the bottom; repeat this process until the barrel is as clean and as polished as when it left the maker's hands. It is needless to remark, after the cautions we have given against using sand or any coarse matter that can abrade the surface of the barrel, that it is only the finest emery that should be used; from which, if judiciously employed on only one or two such occasions as these, no injurious effects can be apprehended. We need not inform the observant, that iron or steel well polished will not attract rust so readily as when, being slightly abraded, it offers small indentations, by which the minute aqueous particles are detained. It may be asked after all this, Would it not be better to send the gun to be repolished by the gun-maker? It would save trouble, we grant; but will he not overdo the matter, and thus weaken the barrel?

2492. *The conscientious sportsman will be a careful one.* It is not always convenient to clean our gun directly we return home, but we can in every case displace the cap, or throw out the priming. Not but even then the gun may explode, if only a very few grains of powder remain. It requires, therefore, other precautions in putting away a loaded gun. The best, some say, is to lock it up: other sapients tell us that the best of all is to *fire it off;* which we affirm is neither economical, nor is it always agreeable to the natives of the town or village you occupy to be thus alarmed (and prudence directs that you do not discharge your piece until you arrive there); children crying, dogs barking, all in an uproar, with a few gentle blessings audibly whispered on the intruder, are not welcome greetings on the return. Having therefore arrived at your door, remove the cap, if a percussion piece, or, if flint, throw out the priming, let down the spring of the lock, draw the ramrod, and dropping it down the barrel, put the gun away into a closet or glory-hole of your own; or otherwise suspend it high and dry in your study, and all must be safe, at least against the ordinary risks.

SUBSECT. 7. *Of Shot.*

2493. *The patent shot* is now in general use among sportsmen, and it is greatly to be regretted that the shot-makers will not unite in a compact to manufacture this article on one common scale of size, number, or letter. Of the methods of manufacturing we shall say little more, than that the circularity of the patent shot was obtained by pouring it from great heights, by which means the shot hardened ere it fell to the ground; and as in falling the resistances it met with were equally applied from the supposed rotatory motion, so it remained circular. The improvement in shot, by introducing quicksilver into its composition, was an important one. In rifle shooting it might be employed to great advantage on many occasions, particularly in attacks made on large animals, as elephants and other of the *Pachydermata,* or thick hided. Here the additional weight of the ball gained from the quicksilver assists the projectile force greatly, while the increased hardness obtained from the mercury employed would also assist the hunters in more readily penetrating the hides of many objects of foreign chase which now escape, or can only be conquered by an iron bullet, which must be large, and hence would require a gun of enlarged caliber and unwieldy dimensions. A shot-charge, formed of a mixture of quicksilver and lead, certainly fouls the barrel much less than that of lead alone; for which reason, were there no others, we do not despair of seeing it come into general use.. Colonel Hawker also observes, that birds killed with this shot will keep much longer than those killed with any other. This opinion is something allied to that of Mr. Daniel, who asserts that birds killed with patent shot turn green twenty-four hours sooner than when it is done by common shot. In this latter case the increased tendency to putrefaction is attributed to the copperas, which is said to enter the process of making the patent shot. We have heard something of this before, but we paid little attention to it; nor even now can we see how either of the vitriolic sulphates can hurry the putrefactive process. If, however, it can be proved, that in the new patent shot the copperas is left out, we may then be inclined to consider these opinions as proved.

2494. *The new patent shot* we believe to have been the invention of the celebrated Joe Manton; and, in the first instance, the character they bore was a very favourable one. It is supposed, and we believe now generally known, that mercury entered their composition. Our own practical knowledge of them is confined to a few trials only, when, our stock being expended, we returned to our old sort. They are smaller than those in common use, and consequently lie more compact, and therefore answer best, in the calibers of small guns, from their additional weight. It is also averred by Colonel Hawker, that "the game killed with this shot will keep much longer than when the common shot is used." Moreover, by the foregoing process, "the shot," he observes, "becomes as clean as silver to handle, or carry loose in the pocket; and that its friction, when firing, leads the calibers little or nothing in comparison to the old shot. An advantage, too, above all the others, I should not omit to mention, is, that in this shot the surface of every pellet is precisely alike, owing to a different process of manufacturing; which could never be the case with shot that had arsenic in its composition. This must, of course, tend to make the charge lie with more precision in the barrel, and consequently be more evenly dispersed in and round the object." (P. 109.) The new patent shot, notwithstanding all this, are not much in request. They are, however, to be obtained at Messrs. Walker's and Co.; and we recommend a trial of them, which we should ourselves also have made of them ere this, had not attention to this work kept us for the last few years confined to our study.

2495. *The patent drop shot* of Messrs. Walker and Parker, of the Patent Shot Tower, Lambeth, we hardly need observe, continue in considerable repute among sportsmen.

There are also other London shot manufactories; and likewise in some of our large provincial towns, as Newcastle, good shot are manufactured. The fact that the shot of the different manufacturers vary so much as they do, is very much to be lamented. On this subject Colonel Hawker tells us, that "an ounce of No. 7. from Messrs. Walker and Parker's, amounts to 341 pellets; and the same weight from Mr. Beaumont's (late Preston), 398 ditto, &c.; and in some places the numbers are reversed." The following is a list of the shot of Walker's firm, with their letterings, number-marks, and number of pellets in an ounce: —

A A	40	4	177
A	50	5	218
B B	58	6	280
B	75	7	341
1	82	8	600
2	112	9	984
3	135	10	1726

2496. *Mould, drop, or swan-shot,* are of large size; and are those usually employed for wildfowl shooting; they are thus lettered, and the pellets numbered: —

	No. of pellets to 1 oz.
L G	5⅓
M G	(hardly) 9
S G	11
S S G	15
S S S G	17

2497. *Dust shot* our Mentor has not condescended to notice, farther than that he "leaves the pleasure of using and counting it to those who recommend it." We, however, have ourselves proved its efficacy; for in a winter's day of frost and snow we fired a charge of dust shot up a narrow passage of about six feet wide, between two cornricks, where such a number of small birds of all kinds as are seen in farmyards during frost were settled, that we picked up between forty and fifty, the proceeds of one shot only. We can suppose a fastidious sportsman to turn up his nose, and exclaim, What a sportsman! But were he, like us, to be shut up during a long frost in an old-fashioned hall in the Essex Marshes, without a neighbour, save the farmer who tilled the ground around us, he also might be tempted to degrade himself by sporting among larks, sparrows, and chaffinches. Thus situated, we however think he might do it *sans peur et sans reproche*, and particularly if he were as fond as ourselves of a sparrow pudding.

2498. *Effective sizes of shot.* These vary in the opinions of different sportsmen. Our grand gunner thinks that No. 7. is the best size for general shooting with a gun of the common weight and bore; and with this, he says, that, taking the seasons throughout, more game may be killed than with any other, "taking every thing from mallard and hare to quail and jacksnipe." There is pith in the colonel's reason why small shot answers best, when he tells us, that "it lies more compact in the barrel; and, consequently, receives more effectually the force of the powder than large shot, which can only have this advantage in a proportionably large caliber. Thus it is that a grain of small shot, from a small gun, will kill far better, in proportion, than one of large; and with it you have not only the chances multiplied in favour of taking a vital part, but the same advantage of penetrating feathers, that a pin would have (with a moderate pressure on it) over a nail; and its garnish must be so regular, that a bird, at forty yards, could very seldom get away; whereas the large shot, from the objection before named, will often fly so wide and irregular, that the game will escape between the void spaces in the circle." (P. 104.) He does not, however, deny, but that with Nos. 3. and 4. very long shots will be more effective. But how many more within reasonable distances do occur; and then the chances with large shot would be lessened by the diminished number of pellets: but all this must depend much on the fancy of the sportsman, and whether he shoots for pot, or for credit in the kill. For some time the use of smaller shot than heretofore has been becoming prevalent. Captain Williamson, in his *Oriental Field Sports,* vol. ii. p. 77. says, "One of the best shots I ever saw never used any other than No. 9." General Hanger, on the contrary, confined himself to No. 2. There are persons so dexterous that they can kill with almost any thing, and any how, if we may be allowed the expression; but we should not be pleased to be confined in October to shoot at our partridges and pheasants with shot of so small a size.

2499. *Larger sizes of shot are advocated by others.* Thus an acute writer in the *New Sporting Magazine*, who evidently favours rather large shot, argues thus: — "It has always been our opinion that every shot fired, from a dust-corn to a forty-two pounder, moves with a velocity and force in a direct ratio to its size and weight. If any person who has the opportunity will fire at a hard block of wood with various sizes of shot, he will find that a forty-two pounder ball will sink deeper into the block than a twelve pounder, a twelve pounder than a musket-ball, a musket-ball than a swan-shot, a swan-shot than a No. 1. shot, a No. 1. than a No. 4., and a No. 4. than a No. 9. Then if a No. 4. will strike deeper into an oak-board than a No. 9., why should it not into the body of a hare or partridge?" This may be very true, but it must be taken into the account that the vacancies in the garnishing, when large shot are employed, are both more numerous and more extended than when the shot are smaller. The editor's opinion is, that a trial of the gun employed should have some influence in determining the size of shot used; for it is unquestionable that some guns carry much closer than others. Let therefore thirty-five yards be considered as a fair average distance of the shots made. Now try various sizes of shot at this distance on a sheet of paper, and the largest size that will garnish, after repeated trials, so that a partridge could not escape, may be with propriety selected as the ordinary size to be used for that gun. For snipe-shooting, of course, some variation should be made. Mr. Daniel is an advocate for the use of shot of a very moderate size. He says, "The velocity of a charge of No. 7. being equal (Query) to one of No. 3. at that distance; and since small shot fly thicker than large, in proportion to its size; and as there are many parts about the body of a bird wherein a pellet of No. 7. will affect its vitality equal to a pellet of No. 2., the chances by using the former are multiplied in the marksman's favour; for it is the number, and not the magnitude, of the particles that kills on the spot; and if sportsmen would be persuaded to use Nos. 5. and 6. in grouse and partridge, and No. 7. in woodcock shooting, instead of Nos. 3. and 4., and Nos. 4. and 5. for black game and pheasants instead of No. 2. and 3., they would bring home one-third more game, and not destroy one head more than usual. They who prefer large shot, and accustom themselves to fire at great distances, leave nearly as many languishing in the field as immediately fall; whereas those that use small shot, and shoot fair, fill their bag with little spoil or waste beyond what they take with them from the field." To an old gamekeeper of his (he tells us), he has often put the question, "Why he was so partial to small shot?" (for he generally used Nos. 6. and 7. mixed), and his reply was, "Sir, they go between the feathers like pins and needles; whilst the large shot you use as often glance off as penetrate them." (Vol. iii. p. 454.)

2500. *The author of the essay on Shooting* declares his opinion on the subject in hand thus; premising on our own parts, however, that we have altered his numbers of the shots to make them correspond with the schedule of Messrs. Walker and Parker, as given at p. 765.: — "In the first month of partridge shooting shot No. 5. should be used; for since, at this time, the birds spring near at hand, and we seldom fire at more than the distance of forty paces, if the shooter takes his aim but tolerably well, it is almost impossible for a bird at this distance to escape in the circle or disk which the shot forms. Hares also, at this season of the year, sit closer; and being at the same time thinly covered with fur, may easily be killed with this sized shot, at thirty or thirty-five paces. In snipe and quail shooting this sized shot is peculiarly proper; for, in using a larger size, however true the sportsman may shoot, yet he will frequently miss; the objects being so small, that they have great chance of escaping in the vacant spaces of the circle or disk. Yet there are many sportsmen who shoot snipes, quails, and fieldfares in countries where they abound, with sizes 6. and 7. of the common shot, the last of which is called mustard-seed. About the beginning of October, at which time partridges are stronger on the wing, No. 3. is the proper shot to be used. This size seems to be the best of any; it preserves a proper medium between shot too large, and that which is too small; and will kill a hare from the distance of thirty-five to forty paces, and a partridge at fifty, provided the powder be good. It will serve also for rabbit shooting. In short, it is adapted for all game, and many sportsmen use no other the season round. It is true that distant objects are frequently missed for want of larger shot; but then these bear no proportion to the number which are daily missed, by using shot of too large a size, especially with the feathered game. If a man were to shoot constantly with shot No. 1. for one partridge which he might chance to kill with a single pellet, at the distance of eighty paces, he would miss twenty birds at fifty paces, which would in such case escape in the vacant spaces of the circle. But if the sportsman expressly proposes to shoot wild ducks or hares, then, indeed, he had better use the No. 1. However, in shooting with a double-barrelled gun, it may be prudent to load one of the barrels with large shot for the necessary occasions; and if in any case large shot is required, No. 1. will be found to be better than any other; for its size is not so large as to prevent it from sufficiently garnishing, or being equally spread in the circle, and it can at the same time perform, in effect, all that a larger-sized shot can do, which garnishes but very little, if any at all." Were we to introduce many other quotations from authorities before us, they would tend more to show how widely opinions will vary, than to settle those of others. Let the sportsman, therefore, who feels much on the subject, seek the information he wishes for in the wide field of experiment and observation. We have stated the outlines, let his own practical remarks fill up the blanks. The gun he shoots with, the country he shoots over, his own methods of shooting, whether very quick or very deliberate, will all of them tend to contravene any fixed rules or principles laid down.

2501. *Mixed shot.* Some persons would by no means use two sizes of shot together; and we were equally hostile to it, until, by shooting with some excellent sportsmen who purposely mixed theirs, we were induced to try a mixture, when, we must own, we could discover no difference in the effect. Mr. Daniel informs us that his uncle, "who was allowed to be one of the best marksmen of his time, after minute trials and mature experience, preferred it to every other kind." Gamekeepers," he continues, "frequently use it; and many persons in this class are in the habit of trying and knowing what shot will do most execution, and are men who generally draw their reflections and remarks from actual and successful experiment. It is true they do not write a treatise upon the subject; yet, from killing game and animals at all times, are at least as likely to form a just decision as gentlemen, who, for the most part, only use their guns three months at the commencement of the season. The numbers of shot proper to be mixed together for general use are 4, 5, 6, and 7." (*Rural Sports*, art. Shot.) There, however, remain many judicious gunners, who decidedly object to mixing their shot, though, as already observed, we are inclined to think it is not injurious to either their range or garnishing; nor do we believe any law in projectiles can be brought forward to prove its impropriety. The mass of shot is propelled by the expansive power of the powder; it is ejected in a mass; and, when it separates, each shot carries with it its own share of ejective force, with very little interference with any other, it being evident that the projectile force acting on each shot is in the proportion of its area of dimensions.

2502. *Patent shot-cartridges of Eley.* We presume we need not inform the reader that the use of paper cartridges, made somewhat after the military fashion (except that the latter are charged with ball, but the sportsman's with shot), have been long used by some persons; but they were too uncertain in their action, particularly in their delivery of the shot, to come into general use. The history of Eley's patent shot-cartridges, as related by Colonel Hawker, is an amusing one, and exhibits this gentleman as an active agent in bringing them before the public. (See his work on *Shooting.*) The original projector was a Mr. Jenour, who sold the invention to Messrs. Eley; and they for some time maintained a large establishment for the manufacture and sale of them in Charlotte-street. The cartridges, however, had not then attained due perfection. Imitations were abroad also; and, finally, the establishment was broken up, and the concern sold, as it is said, for a hundred pounds, to Purdey the gun-maker. Colonel Hawker appears to think very highly of these cartridges in their improved state; and without doubt, for some varieties of shooting, they are excellent auxiliaries, particularly they are so for long shots. The principles on which they are formed consists in confining the shots within the meshes of a net of wire gauze, so managed, that in the flight of the cartridge they may separate from it by degrees in their passage. At first the wire employed was much too stiff, and the meshes of the purse too small; by which means the charge was either delivered in a dangerous mass, or otherwise it was too scattered, *i. e.* partially and ineffectively only. An inconvenience attended the very few we have used, which was, that, after a few shots, they did not pass pleasantly down the barrel. A morsel of tallow however, smeared on the outside, remedied this; but the smallest delay in the field is annoying. For wildfowl shooting they are very useful; and for rook shooting we have likewise found them so. They are also much patronised by some pigeon shooters; indeed, we believe they are their best friends. Colonel Hawker's account perfectly coincides with our sentiments regarding them, and with that also entertained by several experimental sportsmen of our acquaintance. "For general shooting," observes the Colonel, "and particularly close shots, it is totally out of the question: it increases tenfold the difficulty of killing the object when very near, and spoils the birds when hit; and is, of course, dangerous for covert or battue shooting. Let me, therefore, conclude with recommending my sporting friends not to adopt the cartridge for general shooting, but only to make use of it on particular occasions." (*Ibid.* 7th ed. p. 112.) Greener would prefer the shot being surrounded by some other medium than wire, as felt hatting, &c. He observes on them, very justly, that "there is one point which must not be lost sight of in using cartridges. If you load with as heavy a charge of powder as in general shooting, their effect is trifling compared with what it is with a moderate charge. The shot droops considerably more; therefore you must have an increase of elevation, or you will invariably shoot under your object, at any distance above forty yards." (P. 177.) These cartridges, it must be remarked, are certainly gaining ground, and particularly among pigeon shooters, and for all long shot distances and bulky game. We would, however, recommend the reader to a very full *exposé* of their properties, stitched up with the *Sporting Magazine* for July, 1838; and also to a very able and fair examination of the pretensions of these cartridges in answer, by a writer in the *New Sporting Magazine* for September, 1838. We would ourselves remark, that if they do not and cannot do all that the venders state — and what article is there that does do all that is promised for it? — yet they certainly do increase the means of destruction in the hands of the gunner, and consequently they have a fair claim to public patronage. They are now sold at 36. St. James's-street, Piccadilly, where full directions of the proper weights for certain caliber of barrel, as well as the sorts adapted to certain varieties of shooting, as moor-fowl, partridge, snipe, wildfowl, &c. &c. are laid before the purchaser.

2503. *Shot-belts, steel-chargers,* &c. are necessary means of carrying the shot; or would you, good reader, prefer the boyish method of a bag, and the smoke-dried bowl of an old pipe, wherewith to measure the shot that was to bring to bag, or rather to pocket, the starlings, thrushes, blackbirds, &c. which the winter holidays allowed you in youthful days to hunt up. To this day the recollections of these pop-gun excursions excite pleasing feelings, as the so-called "sparrow pudding," made of our humble game, gratified both our taste and our self-admiration. We have worn a double shot-belt for many years; and were we to begin life again we should, as we now think, never carry shot in any other manner. We commonly used one of the double kind, as it would carry two sizes of shot; but if there be much distance to traverse, and no servant attends, you may take two shot-belts, and cross them, which will greatly lessen the fatigue of carrying. Always sling the belt between the jacket and waistcoat; it lessens perspiration, and protects the shot from wet: it also allows of ready access to your shooting pockets, which should be an under and an upper on each side; at least such was our own method. Some wear the shot-belt buckled moderately tight round the waist, and on some occasions we have done the same, and with less fatigue than by the usual method. In purchasing a shot-belt choose one with the self-charging spring top; it graduates like the rest.

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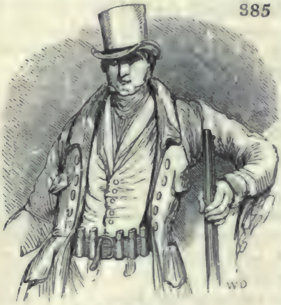


SHOT CHARGER BELT.

2504. *Waist shot-belt.* When the shoulder shot-belt proves oppressive, it will be found convenient and less burthensome to have a belt affixed to the waist, with numerous partitions ranged along it. Into each of these thrust a charger, which being double, and the belt affording six or seven compartments on each side, will give you stowage for near thirty charges. We have occasionally worn such a shot waist-belt, and found it no otherwise inconvenient than as it heated us, and somewhat added to the weight we carried. We should prefer brass to steel chargers; they are much lighter, and wholly unattractive to lightning, and are also little liable to rust. Colonel Hawker, as we see, is more partial to the shot-belt than to steel chargers; and, as is usual, he gives reasons for his preference, as a reference to his work will evince. We cannot avoid, however, showing up, in his own words, his initiatory lesson on the method of using the shot-belt, first observing that he patronises the tube-pipe belt of long standing: — "While pressing the spring with the forefinger and thumb, draw the top just out; then take a fresh hold over handed, so as for the first finger and thumb to steady the hand by pressing the muzzle of the belt, and the second finger to be just within the ridge of the top; and by closing the second finger a little, the top will be sufficiently drawn out. The instant you have taken this fresh hold, lean the body, with a little jerk, to the right, and the shot will fill the top, of which your second finger will have such a command that none will be spilt. Before you put the first measure into the barrel, lean a little to the left, or the shot will pour out of the belt; and in loading your second barrel, you must observe the same motion of the body to the right and left. In doing all this, the left hand should never be taken from the gun. Be sure always to keep the spring inwards, and have your shot top made rather longest in the part which comes under while filling it." (*Instructions to Young Sportsmen*, 7th ed. p. 126.) Many others prefer the belt with a spring mover, that allows the affixed mouth-piece to be filled, and closing, leaves nothing more to do than to reverse the belt over the mouth of the barrel; by this the shot-belt and charger never part company. Another variety, on nearly a similar principle, has a distinct pipe to pour the shot into the muzzle. The force of habit is great: we knew a worthy farmer, who shot over his own manor farm: no argument on the inconvenience and loss of time that it took, with the bowl of a tobacco-pipe to charge his gun from a canvass bag, could avail to persuade him to use a shot-belt. "No," he said, "it was all boyish nonsense; his father and his grandfather had always done so, and he did not see how he could do better." This was his *argumentum ad ignorantiam.*

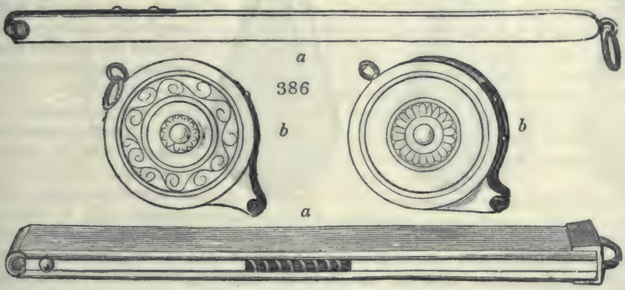
Subsect. 8. *Copper-caps, cap-chargers, &c.*

2505. *The copper-cap* has now established itself so fully, that it may almost defy opposition. It had however much, and indeed deserved, opposition to encounter at its outset; not, as we are informed, from any fault in the inventor, but from that of the Birmingham agent, who served the public with caps manufactured from brittle cannon-metal, instead of the best copper; by which fraud a very frangible article was substituted for what was intended to be tenacious and ductile: and, as we are informed, it was to this cause that the numerous serious accidents, which occurred by the early use of copper-caps, are mainly to be attributed. The French copper-caps are also extensively used, and they are by no means in their present improved state objectionable, though certainly not equal either in certainty or safety to the best of those of our own manufacture. Colonel Hawker is, we think, rather too severe on the French copper-cap, when he states that, "though these may do very well with weak French powder, yet they are so unfit to be trusted with our powder, that the loss of many a sportman's eyes has been the consequence. I know one gun-maker who recommended them for no other purpose than to ruin the copper-cap guns, and thereby improve the trade for primers."

2506. *The anti-corrosive property of the fulminating mercury now in use*, in comparison with the former article compounded of sulphur and chlorate of potass, is a most important improvement, inasmuch as it prevents those corrosive effects so much complained of heretofore on the pivot, and also on the gun passages generally; and, indeed, as it supersedes the necessity of that extraordinary care hitherto required. It is, however, prudent to keep an eye even yet to the igniting apparatus generally, and to clean the passages frequently. It is likewise very necessary still that the copper-caps be carefully excluded from damp, which weakens, and eventually destroys, their detonation. In the purchase of copper-caps, whether in large or in small quantities, it is always prudent to try one or two promiscuously chosen from the mass, otherwise disappointment may occur. This caution particularly applies to foreign caps, which, however good at first, if long kept in a storehouse, will lose their quickness of ignition. Be equally careful that those bought are cupped to the exact gauge of the diameter of your nipple. If they are too small they will not explode; if too large you are liable to have the cap of the second nipple fly off when the other is fired. Mr. Joyce and Mr. Walker are, we believe, the most accredited makers of the English copper-caps.

2507. *Iron percussion-caps.* Mr. Greener, in a communication made in the *New Sporting Magazine*, No. lxv. remarks, on what he considers an inconsistency in the inventors of the cap, which was the preference given to copper instead of iron, for containing the percussion priming powder; to which error he attributes the tendency in the copper-caps to become injured when exposed to damp to such a degree, as to be converted into a paste incapable of ignition. He says, "Whenever powder is flashed or exploded around the nipple of a gun, the residue left attracts moisture instantaneously. It follows, then, that (after recharging) this damp on the nipple coming in contact with the copper of the cap, creates an instant galvanic action, which, if allowed to act for an hour or two in damp weather, does not fail to effect a considerable decomposition of the fulminating mercury with which the cap is primed; and hence the misfires." (P. 350.) To remedy this he recommends the use of iron as a substitute cap for the copper, on the principle that being then of the same nature as the nipple, it would render such caps antigalvanic. Mr. Greener informs us he has made such iron caps, and has tried them, and that many others have done the same with the following results: — "They are much easier exploded, they detach no broken particles to wound the shooter, nor even expand so much as to stick in the head of the striker. They do not stain the hands, and they might be made cheaper." If such be really the facts, and no draw-backs are proved to countervail these advantages, iron caps will eventually be brought forward.

2508. *The cap-charger* (*fig.* 386.) forms a very useful appendage to the cap system. It is of French origin; and was, we believe, first imitated and introduced among us by a Mr. Sykes. There are several varieties of cap-chargers, some long (*a a*), and some round (*b b*). The latter we think preferable, because they are the most convenient, it not being necessary, when using the round one, to put the lock to full cock before you can introduce the cap to the nipple, as is the case when the long one is employed. Greenfield's cap-charger is also by no means an unpleasant one, nor inconvenient to handle. Brownjohn, of Basingstoke, has one likewise for which he has a patent; and it appears to be much patronised in the southern and western counties, and consequently must have merit. Colonel Hawker notices one also, invented by his friend Captain Ward, which is remarkable for a piece of ingenious mechanism, in the shape of a dial-plate, which tells the number of caps that remain, and consequently also the number of shots that have been fired. The curious in these matters will find other varieties, as Greenfield's, &c. &c.; but the names noticed are, we believe, the principal. In our own shooting practice we always carried our caps in a



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CAP-CHARGER.

small breast-pocket on the left side of our shooting waistcoat, from whence one was readily extracted, and as readily transferred to the pivot. Be it observed, however, that it is only a few for immediate use that should be thus carried; on the contrary, the bulk of those taken out should be kept in a metal box closed by a fine wormed screw cover, so as to be impervious to wet or even moisture. We do not hesitate to assert that, although we ourselves did not use one, yet a cap-charger of some kind or other should be employed; but let the seller instruct in the use of it, which will be better than a written discussion. The stock of caps, for we will suppose them to be bought by the thousand, ought to be kept in a very dry and unexposed situation.

2509. *The powder-flask* has always been an important article with the sportsman, but it is not now, as formerly, made of monstrous dimensions, and splendidly decorated, to assist the group of olden sporting implements that graced the halls of the ancient baronial mansions. Of such a flask, *a*, *fig.* 387. is a representation, the capacity of which we presume was equal to contain four or five pounds of gunpowder; which quantity, we may suppose, was not too much to satisfy the necessities of an olden hunting party, considering the numbers usually engaged. Its humble companion, seen underneath on the same cut (*b*), represents what was long used under the name of the *powder-horn*, from its being at that time formed from the horn of a cow or bull, to the larger end of which either a wooden or horn bottom was fitted, the smaller end being furnished with a tip of horn also, which screwed on, and, being hollow, served equally for a powder measure when off, and a powder stopper when on. Even this humble article admitted of considerable decoration, and we have seen some very elegant tippings below, and equally costly ringlets around the screwed extremity, as represented in the cut. Some will also recollect another real powder-horn, but shaped like the copper flask. It must have been manufactured from a thin sheet of horn.

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POWDER-FLASK AND HORN.

2510. *The modern powder-flask* is sometimes made of very stout leather, but more frequently, and certainly more judiciously, when composed either of zinc or copper: in which latter cases we see it either plain or embossed, and it is finished off after several methods, as safety, convenience, or beauty of appearance, are to be principally studied (*fig.* 388.): not but that some combine all these requisites; safety, however, should be the first consideration; for many lamentable accidents have happened by the whole contents becoming exploded at once; and which nothing can insure against but completely cutting off the passage between the powder separated for the barrel, and that which remains within the flask. Many inventions are before us that promise this. Lang's patent flask is one of these, and it certainly is an ingenious, and to all appearance an effective, contrivance for the purpose. Mr. Sykes and Colonel De Berenger have each brought forward safety powder-flasks, which may be seen at most gun-makers. We have not ourselves seen the flask of the latter gentleman; but his well known ability is a voucher that he would bring nothing before the public that was not effective. Mr. Sykes also has, by some judicious alterations, so improved his flask (*a*), as to warrant a recommendation of it for its efficiency, convenience, and moderate price. It remains to add, that whatever flask is used, it should be so formed as that the neck, by sliding within another tubular portion affixed to the body of the flask, will measure out three or four different quantities of powder; and, according to the gauge of your gun, set this measure, first however having weighed these several quantities, which, if not already done, should be engraved on the movable tip or measure.

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MODERN POWDER-FLASKS.

Subsect. 9. *Gun Wadding.*

2511. *Gun waddings* are as varied as most of the other gun appendages. One advocates leather, as Mr. Daniel; while Colonel Hawker objects to it, and very justly, because it is not stiff enough, unless so thick as to be both expensive and dangerous. We however cannot altogether coincide with the colonel on the superiority of card wadding; for not only is it in our opinion too thin, but the crown of the ramrod employed should be three-fourths of an inch wide, to prevent the possibility of the card passing down edgeways. Colonel De Berenger recommends hat, coated on each side with printed paper, as a good wadding; and if, instead of paper of a slight texture, cartridge paper were substituted, we are of opinion that a good wadding would be gained. Whatever wadding is chosen, the gauge of the barrel should be kept in mind; and also a stiffer wadding should be employed for a large than for a small bore; at least some difference should be made when the proportions vary much. It really is essential to comfort as well as to safety, that whatever wadding be used, it should exactly fit the barrel; *i. e.* that in passing it down the barrel it should require a moderate, and only a moderate, pressure of the ramrod to force it down. It is the difficulty of obtaining an exact fit that is the grand inconvenience in purchasing any of the ready made waddings. Many of our best sportsmen, therefore, have a wadding punch made for each gun; and they show much judgment in so doing. Colonel Hawker, with that convertibility of talent, and that minutiæ of detail which marks most of his instructions, directs us how to alter the punch used, if it be not found exactly to answer the purpose. When too large he recommends to bite it a little edgeways; and when too small, he says it may be enlarged by being rubbed on a whetstone. (See p. 115. 7th edition.) It is common to use lead to punch on; but as we found it injurious to the punch, we used some close grained wood, which answered our purpose better. Let a wooden block be firmly placed, presenting so large a surface as that it may not become worn into cross ridges, which will prove unfavourable to either the scraping or planing of it when it becomes necessary to regain a level surface; for without the block be level, the wads will not be cut clean.

2512. *Different waddings* certainly have different effects on both the range and the force of the delivery of the shot, although many unreflecting persons are impressed with an opinion, that so the powder and shot are separated, and the charge retained in its place, it matters not how or by what means it is done. The reflecting sportsman, and particularly the experimentalist, is commonly of a very different opinion. The author of the essay on *Shooting* attaches the principle importance to the powder wadding; we attach it equally to both. Of the powder wad he observes, "It should be quite close to the barrel, and that without being rammed too hard; the wadding should therefore be of a soft and tractable material, but at the same time of sufficient consistence to carry the shot in a body to a certain distance from the muzzle of the piece. For, if the wadding is rammed too close, or is of a hard and rigid substance, such as stiff brown paper, the piece will recoil, and the shot will spread more wide: if, on the contrary, the wadding is not sufficiently close, and is composed of a slight and too pliant material, such as wool or cotton, it will not be of sufficient consistence to carry the shot, and the discharge will lose its proper force. Besides, a certain portion of the shot, which is more immediately in contact with the wadding, will be melted by the explosion of the powder." (P. 203.) We cannot, however, agree with this ingenious writer, in recommending "either brown paper or dry moss as substitutes, when hat is not to be obtained." Something is required that will retain the elastic fluid within the powder chamber until the pressure extends to the shot bed, and until the body of shot begins to move also. It is now that we can perceive the value of that wadding, which, by its texture and firmness, can not only resist the disgregation of this force, but is also able to keep it united until the grand expulsive effort has carried the whole out of the barrel. We think that this consentaneous action and its effects must be clear to every reflecting mind; and, if so, will not the advantages of a proper wadding and true cylindrical boring of the gun-barrel be apparent?

2513. *The powder wadding used in charging a gun*, therefore, is by most writers recommended to be of considerable firmness and sufficient thickness Mr. Greener says, "A substantial wadding between the powder and the shot is equal to a considerable artificial friction in improving the strength with which the powder expels the shot. It answers the purpose of completely preventing the explosive matter becoming mixed with the shot; and the powder is confined the same as it would be were there a ball in the barrel that fitted tight. Thus the whole force is properly exerted." (P. 173.) That wadding which is over the shot he appears to hint need not be so substantial. It is with much diffidence that we dissent from this great experimentalist; but we fear that an unsubstantial wad over the shot, particularly of a double gun, would be apt to loosen, and thus engender accident. For many years it has been, as already stated, our own plan to employ Beckwith's felt wadding, which we used in the following manner, — instead of putting a whole one over the powder, we divided one into two, and applied one of these halves over the powder, but a whole one over the shot; and, after many trials, this proved with us the best means of wadding the piece: it occasioned little recoil, not much fouling, and a sufficient range and regular delivery of the shot. We are perfectly convinced of the propriety of a complete separation of the powder from the shot, which the half of a well fitting wadding, of the kind we have pointed out, effects completely. This saving of substance also produces another important advantage, by allowing the shot bed to be lower down in the barrel, where its capacity for resistance is greatest; nevertheless, candour obliges us to own, that many experimentalists prefer a thick wad over the powder, and a thinner over the shot, and this method they pursue to increase the range; and it may do so with some guns, but we could not find that it had this effect when we so used the wadding. We always employed a double gun, and by the use of these waddings, after the method we have just remarked on, we never had occasion to ram our shot a second time in the unfired barrel; and if to the edges a little mercurial ointment were added, we should think them then as near perfection as they could be. Even were the effect of a thick powder wad all that is stated, we would nevertheless recommend that a firm one, both as regards its elasticity and substance, be placed over the shot, to avert the fearful consequences that ensue from the displacing of the charge. We are, however, of opinion, that the half of one of Beckwith's is all that is required between the powder and the shot.

2514. *Walker's metallic gun waddings* are much in repute, and much stress is laid on the supposed effect of their metallic edges, in preventing the surface of the barrel from becoming leaded. They may do so in a certain degree, but when the intensity of the heat surrounding the shot during the ignition of the powder is taken into consideration, it must be evident that some fusion of the outer surface of the shot must take place, and therefore that, in their exit, they must leave a slight coating of lead on the barrel at each discharge. These waddings, however, would be improved were they more elastic, by which the shot in the second barrel would be less likely to become disturbed. To this elasticity in very thick felt we attribute the perfect security we have experienced in our sportings. The inflexibility of Walker's wadding renders them troublesome to use, as thereby they do not readily adapt themselves to every barrel; for, however barrels may be gauge-marked, there will almost always be found a little difference in size of caliber between two guns, although bearing the same stamp; consequently, if the stiff wadding do not already fit to a mathematical nicety, it either does not hermetically seal up the barrel, or its charge will not pass easily. These inconveniences are not felt in using either Joyce's, Wilkinson's, or Beckwith's wadding, which may be forced down a barrel smaller in diameter than that of the wadding. There are many other waddings in the market, as those of Purdey, Nocks, Eley, &c. Eley's wadding we believe to be made of cork, and, like all novelties, is under trial, as is also what is called sponge wadding, professed to be made of the same material with Cherry's horse feet pads; and report speaks well of both.

2515. *In the use of waddings of any kind*, our former notice should be kept in mind, that, where there is no vent-hole to the breach a resistance is offered to the descent of the wadding, and that the powder is liable, in the attempts to force the wad down, to be either pressed or disturbed. It also happens that some considerable impediment is experienced to the passage of the shot wad of some of the kinds in vogue; in which case it must be borne in mind, that a small hole, made in either or both of the waddings as the case may be, will obviate the inconvenience. Some punches are indented purposely to allow of the windage passing off, or a hole is made in the centre; but we never found either of these necessary when using the concave wadding of Beckwith: notwithstanding which, we recommend to the reader's notice the waddings of Purdey and Lancaster, cut with a dented punch, and anointed with mercurial ointment (as we take it to be) around the edges. These waddings prevent resistance from confined air, and also somewhat obviate *fouling* in the barrel. Westley Richards's wadding, likewise started by Bishop, is become very popular, and has proved very effective. We cannot conclude this article without again adverting to the important subject of *wadding*, as regards the placing of it. We confess to be at issue with most of the authorities of the present day, who advocate *a close and thick wad over the powder*, which to us appears not only unnecessary, but also in some measure dangerous, by removing the shot-bed farther upwards in the piece than is consistent with safety. We acknowledge the necessity of the powder wadding being of sufficient substance to force forward the shot in a body, which it will be if firm felt of only a moderate thickness is used; whereas, when card is employed, by allowing windage between it and the powder, it will not propel the shot either so forcibly, or to so great a distance, as when so elastic matter as felt is used, which, by adhering to the barrel closely, prevents any windage, and consequently any flame escaping past the shot, and thereby dispersing them by its lateral expansion the moment it quits the barrel. It is therefore necessary that a wad of only sufficient consistence to prevent the expanding flame from insinuating itself past the shot be used, which a felt wad, such as we have described above, is fully equal to. Any accumulation of expansive force occasioned by a thicker powder wad is at least useless, if not dangerous. It is our opinion that the whole charge should be kept as compact as possible, as acting least offensively on the gun, and most effectively on the object fired at, by hindering any scattering of the grains previous to their simultaneous inflammation. It is to prevent this that the prize shooters wrap up small quantities of shot in tow, or silver paper, so as to leave no interstices among the grains.

Subsect. 10. *Shooting Habiliments and Appurtenances.*

2516. *The sporting gunner accoutred for the field*, whatever peculiarities may mark his dress, is always an object of interest to others of the same class as himself. Our exemplar (*fig.* 389.) presents an unpretending figure of one simply but conveniently clad; he also, as may be supposed by his sporting one barrel only, is a disciple of the old school, who many of them considered the work of destruction sufficiently great with one barrel, when that one was daily employed throughout the season. Our field sportsman presents himself armed for conquest, not only over the game he may meet with, but against the weather he may encounter; and, without being burdened, he is amply protected. Ease and safety ought to be the grand objects when we are choosing our shooting clothing. We will leave the West-end tailor to cut his jacket into any monstrosity of taste he pleases, but he will never beat the long used fustian jacket, with its breast pockets within and without, and its wide-spreading skirts pocketed within, to contain a hare or two, and those without to hold partridges, but the skirts must be longer if he mean to carry all he kills. The old game-bag, we need not say, is almost discarded. The hare pockets, we have forgotten to state, should have an oilskin lining, to prevent blood from transuding through the dress. We have seen this lining made loose; and we have seen, instead of an oilskin lining to the pocket, an oilskin button holed around, so as to hang within the jacket pocket by means of buttons corresponding with the button holes. By this contrivance the pocket could be wiped out, hung to dry, and all taint avoided. We would avoid a single drop of blood on our clothing, if possible, because some youthful sportsmen, to raise a stare, will purposely smear themselves and clothes with it. If you are tall let your waistcoat have three, but if short, only two, tiers of side pockets. What with two varieties of waddings, loose caps, or cap-charger, gun knife, perhaps snuff and cigars also, with sundry other necessary implements, you will find the number we have pointed out all taken up. The powder-flask, and perhaps the *eau-de-vie* case, will occupy a compartment on each side of the jacket, and various other indispensable oddments will not leave an hiatus in your upper man. If you are on the wrong side of forty, let the weather be what it may, wear both flannel waistcoat and flannel drawers. The flannel may be as fine as you choose, but by all means wear it; and, be assured, it will at once keep you cool by being a nonconductor of heat, and save you from cold by absorbing perspiration. On the right side of forty, do as you please in these matters: the professed gunner, who shoots through the whole practicable year, *i. e.* all the game killing months, should have his autumn, his winter, and his wildfowl dress, or, as we may term it, his foul weather dress. The first may be made of any quiet coloured material he pleases, as drab-coloured nankeen, setteen, jeanet, or florentine; the second of barragan, fustian, or florentine; the third of well lined velveteen, and be it remembered to have duplicates of each, with waistcoats to match. Wear laced half-boots, with gaiters to reach above the knee, in which case the breeches will require no capping; but if the gaiters do not reach above the knee, let the trowsers be either lined within or without with leather over the knees, to ward off the thorns in making your way through cover. We have to add to our directions as regards the boots, that they should have been made some months at least before wearing, that they fit easy, and are strong without being clumsy. They also should have been many times oiled, and afterwards well dressed with any of the usual preservative mixtures in which wax and resin are components. Be it likewise remembered that lambs' wool stockings are more easy to walk in than either thread or cotton. Further, should the sportsman have tender feet, let him rub them well over with soft soap in sufficient quantities, and he will be likely to prevent galling, however otherwise used to it. But should blisters rise in spite of this caution, by no means let him open them after the usual method, as is frequently done; but having armed a small darning-needle with moderately coarse worsted, let him draw this through the blister; having so done, let him cut away the needle, leaving the worsted within the blister, which in the morning will be dried up, and the field may again be taken. Avoid swallowing cold water when you are yourself hot, but rinse the mouth with it, which will refresh. If very thirsty, slake it with tepid water, in which two or three tea-spoonfuls of brandy are infused; but avoid taking spirits of any kind alone, as unsteadying the hand, and producing more speedy exhaustion in proportion to the present exhilaration. These minute instructions are not intended for the adept and old practitioner in the field; on the contrary, we beg he will pass them over, although they

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SPORTSMAN ACCOUTRED.

are edited by one who has been an enthusiast of the trigger for forty years. Or, in lieu of it, if he would correct the faulty, and enlarge the good, we shall be most grateful. But to the young aspirant for fame in shooting practices, they may assist towards his comfort, and may prevent that laugh against him which he would be sure to encounter, were he to sally out in a costume inappropriate to his pursuit. While we should prefer sober colours for every part of our own shooting habiliments, we feel that no necessity whatever exists that his dress should studiously harmonise with the objects around him, or the locality he enters. And while we recommend, that, as far as the timid and cautious grouse are concerned, whose quick vision enables them to discover danger probably two miles ahead, that the whole clothing should partake of the tint of the heather; yet at the same time we are convinced, that, as regards partridges, pheasants, hares, quails, &c. the sportsman's dress, be it what it may, they know he is a man, and they know him as an enemy, and conceal themselves from him accordingly, until, being pressed on, they take foot or wing as suits them. If there be any virtue in sober clothing, in facilitating our approach to partridges, &c. it must be because they see the husbandmen, whose dress is of that kind, so often pass without molesting them. To those over cautious sportsmen who are sticklers for dresses of a colour that will exactly harmonise with the objects around, we hint that they perhaps may choose something of the *nankeen* colour for the *stubbles;* and, as it is very likely the flight of the partridges from thence may be into the coleworts or turnips, an attendant might be at hand to throw a green mantle over the shoulders of his master; having also another of an autumn tint in readiness, in case their next flight should carry them into the wood! But, joking apart, the colour of the shooter's dress, provided it is of a sober tint, is of little importance. We have hitherto principally addressed ourselves to the sporting public, who, like ourselves, wish to enjoy what is understood as shooting without alloy. By alloy, we mean the drawback on our free exertions of gamekeepers, markers, relays of dogs, &c. &c. We have been so circumstanced a few times in our lives, and even suffered the misery of having the game found for us, the ready charged gun put into our hands, and the fallen bird brought to us, not from the mouth of the pointer who stood to it, but from that of the keeper's retriever, who was in waiting to do these and other biddings. We object not to auxiliaries on the moors; and where the footing is not good, horses are useful: attendants there are likewise somewhat necessary, as well as relays of dogs. In wood shooting, also, assistance is often convenient; but it can in most cases be dispensed with. Give us, however, a brace of good dogs and one steady companion, and we ask no more, be it where it will: all beyond this is a tie, at least it is so to us.

2517. *Field apparatus.* We consider ourselves as addressing the zealot, who, to enjoy success, must feel that he has earned it. When we even had a gamekeeper at command, we usually went out alone to enjoy our sport, without the restraint the company of these persons usually generates. We have no cynical pleasure in being alone, but the contrary, and occasionally we were accompanied by a friend or two; but it would have been an insupportable tie on us to have been followed by these subordinates, who, if better shots than the master, are not sparing of their remarks, perhaps their gibes or sneers, and at best their condolences. We likewise feel assured that there are thousands of sportsmen who think the same. It is for the true lover and sterling workman at his sport that we now write, and to such we now further address ourselves, and enumerate what is essential for them to take out with them. Gentlemen, we hardly need to remind you to carry shot, powder, and wadding, with caps, or flints, as the case may be; and if you cannot burden yourself with an oilskin covering for your whole gun, you can at least take a lock cover, which shall completely secure it from the hardest rain. You should, beside what is already noted, have nipple-wrench, gun-picker, turnscrew, probe, &c.; all which may be taken separately or together in a sporting knife. A sample of one is now lying before us, made many years ago, and which, as it offered some novelty of our own ordering, besides the usual articles common to sporting knives, it attracted some attention. The flint-gun artists must at times have encountered some trouble, and not unfrequently a wounded knuckle, from the want of a steady purchase, which the old turnscrew at the head of the knife could never present. This we removed to the back of the knife, where, bedding itself within a cavity purposely made in the horse-picker, it was safe from giving or receiving injury, and was then effectively placed so as to afford all the purchase that was wanted, without incurring danger from losing its hold when the screw which tightens the jaws of the flint cock had to be moved. A cavity in the handle contained a lancet, which in hot weather is sometimes wanted to open a vein in a pointer or setter, when heat or over exertion have brought on a fit. A fleam also, a punch, a gun-picker, a horse-picker, a button hook and nail file, with a strong blade and a pen blade, all of the best materials, were all included in it. This knife was made to order, and we paid 25*s.* for it. At the present time a knife, with the principal parts of this apparatus, may be bought for less than half the money; but even this disproportion does not equal that which is found between the quality of the goods then manufactured and those now foisted on the purchaser. Thus it is also with our guns; they must be made cheap, and yet must *look the thing,* which they certainly do; but of course this can only be really effected by making the articles of inferior components. We have said nothing about the spirit flask, sandwich box, &c.; these must be *ad libitum;* and they likewise, with other *additamenta*, depend on circumstances — as the proximity or the remoteness of the shooting ground from the domicile or headquarters. If you have these *addenda*, you will probably require an attendant; and in such case it would be well that you took with you some gun-cleaning apparatus also, which will render your evening shooting more pleasant and more effective.

2518. *The shooting poney*, as it is usually called (*fig.* 390.), whatever may be its height, is a very valuable adjunct to the lame, the lusty, and the elderly shooter; and also to every one who has to go and return from distant shooting ground. The shooting horse is so well described by that very respectable writer, Mr. John Lawrence, that we shall make use of his quaint though expressive words instead of our own: — "They who are as soon fatigued by walking as the present writer, will readily appreciate the convenience of a good shooting galloway or pony, the material qualifications of which are as follows: to stand fire like a gatepost, and be a perfectly safe goer over all kinds of ground, particularly down hill; a good canterer and walker; a handy and safe standing leaper; one that shies at nothing; that will follow readily, may be turned adrift, and easily caught again; fully master of the weight he has to carry, and with a good share of that common sense, apprehension, and steadiness about him, which is often to be found in brutes." (*British Field Sports*, p. 87.)

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SHOOTING PONY.

CHAP. III.

THE PRACTICE OF SHOOTING.

2519. *Few will be prepared to contend* that there is not an inherent wish in most manly breasts to excel in the use of fire-arms. Even the name of "being a shot" must have great attractions, if one who has written on the subject is correct, when he seems to imply that London furnishes a number of gentlemen who, in the common acceptation of the term, are "regular sportsmen;" that is, they regularly take out a certificate, regularly purchase a new gun and a brace of pointers, regularly sport a new jacket on the first of September, and as regularly become tired of all before the end of three days. To many others, however, the practice of "shooting game in the field," in its most extensive acceptation, is exhilarating in the extreme; and to become a good shot the ardent desire of most of them. This is not, however, easy of attainment without inherent properties; and, even then, judicious instructions are necessary to enable the inexperienced to attain it readily: but, ere we proceed to offer any directions how to acquire the art of shooting, we will again glance at the principal instruments used in it, namely, the gun and its loading.

SECT. I. *Examination, Trial, and Methods of Loading a Gun.*

2520. *There are few implements* but require trial previous to our making use of them. If, however, there be one to which this caution applies more than another, it is the fowling-piece or gun: nor is it hardly less necessary that we should be as well acquainted with the proper methods of charging it. When we call to mind the numbers of melancholy accidents which almost every year occur from the bursting of faulty fowling-pieces, it behoves every one, however zealous he may be in his love of shooting, that, in justice to his own personal safety, he should be at least equally careful to avoid the perils that attend the use of an unsound gun. If this caution were necessary formerly, it is doubly so now, when the market is inundated with fowling-pieces, cheap in price, handsome in appearance, but, like the Jew's razors, "only made to sell and not to shave." We have already offered some matter on this subject, to which we would refer (see p. 734.). It is however so important, that we cannot forbear introducing the following from the *Oakleigh Shooting Code*, a work in which there is much flash, but some pith, of which the following is an example, and applicable to our present purpose: — "It is not altogether true that the best guns are made by the most celebrated makers; but the reason why a gun made by one of these makers is to be preferred by a person not thoroughly conversant with the *arcana* of the trade is, the probable certainty of his obtaining a good one, for a first-rate maker will not hazard his reputation by turning out an indifferent one. The unwillingness, however, to give a first-rater's price, induces the shooter to look out for a second-hand piece; and the eagerness with which second-hand pieces are sought for, has led to a species of deception to entrap the unwary. The following remarks on second-hand fowling-pieces are by a gunmaker: — 'Eight out of ten of the guns sold as second-hand are new guns, made up purposely to suit the public taste or predilection for second-hand guns by a good maker. And really one might suppose that none but mere novices could be imposed on by them, for they generally bear the names of makers, many of whom were dead before the invention of the copper cap; such as Henry Nock, H. W. Mortimer, Fenton, Hewson, &c. &c. But all these are warranted genuine.'" (P. 50.) Does not this put some of our readers in mind of the queenly remark to a deputation of wiseacres, — "Ye men of Coventry, good Lord, what fools ye be!"

Subsect. 1. *Examination and Trial of a Gun.*

2521. *A thorough inspection and full trial of a gun* should always be made before it is purchased; and such inspection and trial are more particularly necessary to be insisted on, where either a cheap gun is to be bought, or one to be selected from either second-hand or reputed cheap stores. Having satisfied yourself that it comes readily up to your shoulder place, commence your examination by trying the action of the locks. particularly remarking whether the several parts work smoothly on each other. This done, have the locks or lock removed for internal inspection, when the descriptions already given, and the cautions already laid down, may assist the judgment. Next, let the breeching be taken out; and remember that the screw, both male and female, be examined carefully, that the male ribs and the female indentations fit so closely together as to harbour no wet; but that, when screwed up, they make a solid mass. This is often little attended to; but if the amateur will take out the breeches of some of the cheap guns, he will be convinced, by the ill fitting together of these important parts, how liable such a gun must be to corrode, and eventually to burst. We therefore say, buy no gun that shows any mark of disunion between the breech-screw and the barrel; also look down it against the glare of a large candle, and if any flaw appears, let it be carefully examined with callipers. The breech or breeches being replaced, proceed to an equally close examination of every other part of the barrel. Next examine the stock and its mountings; and being satisfied of their soundness, strength of parts, and general unity of action throughout, the next step is to try the shooting of the gun yourself. Gun-makers will *themselves* try a gun before you, and many of them will do it fairly; but others have various modes of giving unfair advantage to the gun, and taking them also themselves. In the range, for instance, we have shown that there are methods of slightly balling the shot, so as to make them exhibit a most tempting garnish. If you are on the premises of the gunmaker, unless he can show a space of fifty yards in length, how can you form an opinion of what may be the killing extent of the range of this, or indeed of any gun you may try there? and even if you are satisfied the piece will carry its shot so far with a fair elevation only, do not fail to mark the depth of indentation they make on the wall or target. Without this proof of the strength of the delivery of its charge, the shot may ball among the feathers of your game when you come to use it, but not enter the vitals or break a wing. As to a trial of the elevation of the gun, firing at a target certainly gives it; yet, as Colonel Hawker justly observes, for certainty in this respect there is nothing like firing at an object in smooth water. For instance, set a good sized trimmer afloat, and blaze away at that, having some observant person with you to mark the effects of the shot. Snow on the ground affords a good indication of the range and garnish of a gun, as well as of its elevation, if you accurately measure the distance.

2522. *An iron target*, however, forms a sufficiently efficient mode of trying both the range, garnish, and force of the shot. Chalk it well over, and renew the chalking after each firing (*fig.* 391.). It would be well, also, to have a large linen sheet, or otherwise several large sheets of white paper pasted together, and placed under the target to catch the shot, whose figure, by being more or less indented, would show the greater or less force with which they were propelled against the iron. The surface of the paper laid down must, however, be large, or the rebound of the shot would carry them beyond its limits. Let the trials also be varied by using different proportions of powder and shot, not only as regards their own relative proportion towards each other, but likewise as they relate to the gun. Let daily trials also be made under every variety of circumstance; as the methods of loading the gun, of holding it, its state as being clean or foul, the state of the weather likewise, whether it be dry or moist, windy or calm.

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IRON TARGET.

2523. *Milled board*, or very strong brown paper, either of them will make an excellent target, when an iron one is not to be procured. Each sheet should be hung by tenter-hooks against a wall; or, in preference, to a square of boarding raised on a pole. The dimensions of the square (or it may be a circle if the trier pleases) will rest with the sportsman; we should recommend one about a foot and a half, marked off in squares, and the same crosswise if a circle be employed. The paper when it is used should also, like a draft board, be *squared* around by chalked lines, drawn an inch and a half or two inches apart. At proper distances on the outer circumferences of the target or wall to be shot against, let tenter-hooks be placed to secure the brown paper. Measure off the ground to certain distances, commencing at fifteen yards, and increase each trial by five until it arrives to fifty yards, with as many more as the trier pleases. As soon as a shot has been made, note the range, the charge used, the number of shot which have entered each *square*, and the depth to which they have penetrated. Chalk over each indentation, and repeat the experiment at another distance, greater or less, according to the intent of the trial, as whether meant to detect garnish, range, or force. Or otherwise alter the charge only, and renew the shot at the same distance, when the best proportions of powder and shot are the objects principally sought for.

2524. *The squares of the target*, or circles within the circle, if a round one be preferred, should exhibit marked superficies, somewhat in unison with the usual solid dimensions of the various game. The first square therefore may be two inches, which will take in the snipe, as that of two and a half may be considered appropriate to the dimensions of the quail; of three and a half to the woodcock and young partridges. Older birds would spread their limits to four inches; the grouse to four and a half; and the pheasant, if a hen, to five; and a full grown cock would hardly escape any shot that struck within the limits of the square of five and a half. Of course the tips of the wings of the birds here mentioned might meet a shot which extended beyond the limits appropriated to it. We only give some clue to a knowledge of what may be expected from the garnish of a gun as displayed on the trial. We have not yet observed that when much accuracy is required in the trials, particularly if made by an unsteady hand, "a rest" will be a great assistance in gaining a just indication of the shooting of the piece. It is not unlikely that *some* may call this wire drawing; we are however certain they will not belong to the body of reflecting or experienced sportsmen; they will know better how to appreciate rule, method, and illustration.

SUBSECT. 2. *Loading the Gun.*

2525. *Much of the success in shooting depends on the method of loading the gun;* so much, indeed, that we have heard it asserted some will charge an indifferent piece so as to make it carry its charge in every respect better than another intrinsically much its superior; and this entirely because it was loaded with more judgment. To proceed, however, with our subject: in the first place be mindful to comply with the olden but prudent practice of squibbing off your gun, be it percussion or flint; for, by so doing, you not only warm and dry the barrel should it have absorbed any moisture from the air, but likewise the squibbing, by slightly coating its inner surface, enables it more certainly to retain the first charge firmly in its situation; which, were the barrel highly polished within, might, without this precaution, become loosened, and thus entail disappointment, if not worse consequences, at the first shot. Having drawn up the cock, and removed the broken cap, or wiped the edge of the flint if that is used, both to remove foulness and to observe that it is not broken, hold the gun upright, and in that position pour in the powder, striking the butt slightly against the ground, to carry down such grains of powder as may have lodged against the sides of the barrel, and also to settle the mass. Next pass the powder wad down until it reaches the powder, on which press it lightly only. This done pour down the shot also, and give a shake or two to settle them evenly in their bed; place over them a wadding of sufficient substance and elasticity to maintain the shot in their situation, to which end give a moderate pressure to the wad, but avoid ramming it hard; the first charge may, however, receive more pressure to secure the shot than the subsequent loadings. (See the subject of *Wadding*, p. 772.) We are at this moment supposing ourselves giving directions for charging a percussion-gun. It may not be amiss, therefore, when the powder is wadded, to observe whether it makes its way into the nipple by the pressure of the confined air, made in passing down the wad. It does not, however, always follow, that if the powder is not seen in the pivot, that it will not explode; it is nevertheless more satisfactory to see it there, and when we have not seen it in our own gun, we have given the breech (holding the pivot downwards) a slight tap or two to introduce it further up the touch-hole. This non-appearance of the powder at the touch-hole, it may be remarked, is more likely to happen to the perforated or serrated waddings made to let out the confined air than when the wad was introduced entire. The last action in gun loading is that of putting on a fresh cap, and letting the cock down very gently to fasten on the nipple. In charging the flint-gun it is also prudent to squib it first, and then to introduce the powder and shot as already directed; next introduce sufficient priming to ignite the powder in the barrel, but not so much as that the pan cover shall crush it. If a double gun be employed, it will be optional with the sportsman to load both barrels alike, or to give, as many do, a somewhat heavier charge to the second barrel, be it right or left, that the gunner usually fires on the longest shots. If the quantities of powder used are the same for both barrels, the size of the shot may at least with much propriety be somewhat larger for the second barrel. Many sportsmen slightly increase the quantity of shot also for the charge of the second barrel, which can only be proper when the weight of powder is somewhat increased likewise; and even then its propriety is questionable, so dangerous is it to alter the proportions of powder and shot, which repeated experiments have shown to suit the piece. When a gun has been discharged, it is, we repeat, good practice to load it again immediately, that is, while the barrel is yet warm; otherwise, as soon as moisture, begins to form over its inner surface, it catches some of the finer particles of the powder-charge, and either decomposes them there, or prevents their falling to the bottom; and thus, in either way, the detention lessens the projectile force which is to act on the shot.

SUBSECT. 3. *The proper Proportions of Powder and Shot.*

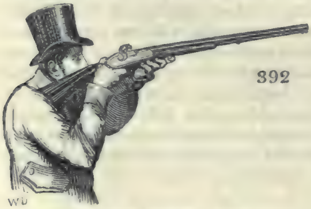
2526. *The proportions of both powder and shot* best suited to any gun are necessary to be known, before we make any practical use of it in the field. It will often require many experimental trials before we can become acquainted with that charge which the piece performs best with; that is, as regards its range, garnish, and freedom from unpleasant recoil. Neither must the trials made be confined to any certain proportion of both powder and shot tried together; but having, as you suppose, by experiment gained the exact quantity of either powder or shot, you should extend your trials to the same charges of powder with a different charge of shot, and so on, *vice versâ*, until you have obtained that exact quantity of both which is best suited to the gun in question. We need hardly premise that the rapidity of ignition and force of expansion effected by the percussion method, requires that somewhat less powder be used for the detonator than for the flint-gun. What that exact quantity may be, the experimental trials will determine; but it usually ranges at between a fourth and a fifth less for the detonator than for the flint-gun. In the artillery the trials of guns, large and small, are commenced with very moderate charges, particularly of powder, which are gradually increased as long as the range of the shot increases. The range having arrived at its maximum, any additional powder will diminish it, although the recoil will continue to increase with the increase of powder. We have witnessed these trials at Woolwich, and know the facts to be as we have stated them; and we note them as showing the nicety of the tests required, and the fallacy of judging of the range of the shot by the force of the recoil. (See *Recoil*, p. 735.) Colonel Hawker settles all this, however, without troubling us with making experiments, by directing that, "to load a single gun of six, or double gun of seven, eight, or nine pounds' weight, take a steel charger, which holds precisely an ounce and a half of shot; fill it brimfull of powder, from which first prime, and then put the remainder into the barrel: to this add the same measure bumper-full of shot, and then regulate the tops of your flasks and belts accordingly." (P. 119.) It is to be remembered, however, that when directing these proportions, the colonel has in view his favoured variety, the flint-gun; consequently, some abstraction must be made on that account; and the same must be borne in mind when he directs the several proportions by weight also, which are for the guns mentioned, a drachm and a half of powder, *exclusive of the priming*, to an ounce and a half of shot. For a gun of twelve pounds these proportions, he says, should be doubled; for one of eighteen, trebled; and for one of twenty-four, quadrupled. However the hints, that although these proportions of powder are proper, because the larger the barrel the more powder is wasted in going down it, yet in the shot they should be somewhat lessened; and from our experience also we are certain that they should be so. The following proportions appear in a recent publication before us, and as they are very nearly the same as those we have long accustomed ourselves to, we of course advocate their use. These are the sixth part of an ounce of powder for a single percussion-gun, and the seventh for a double; and we are inclined to prefer these to those of the colonel, who however uses more metal, which may account for the increase he advocates. The weight of shot for a single percussion-gun of common substance may be one ounce and three-quarters; one much heavier will bear one ounce and seven-eighths. For a double-gun an ounce and three-eighths may be used for the first or left barrel; but for the second an ounce and five-eighths. Between the quantities of shot for the two barrels it is a common practice, as already observed, with many good sportsmen, to load the second or right hand barrel with shot, one or two sizes larger than those used for the first or left barrel; the second shot being usually a more distant one than the first. Are the shot of the second barrel directed to be less in quantity, under an impression that the remainder would be carried both with increased velocity and force? Such argument is occasionally used, but we are inclined to doubt the justice of the recommendation, or the rationale of its action. It is by no means a bad practice, in trying to gain a knowledge of the proper proportions of powder and shot, both relatively and individually, that the gun shoots best with, to commence by using small charges of both, marking with precision the increasing range of each shot. As soon as the range decreases, consider the former shot as the proper load for the gun with these relative proportions of powder and shot, and carefully mark them down. The trial, however, must not end here; but a new series of experiments must be commenced, in which the relative proportions of powder and shot must be varied; as, for instance, more powder and less shot, still marking down the results with accuracy. Proceed next to augment the weight of shot in proportion to that of the powder, and having satisfied yourself of the beneficial or detractive consequences of these latter experiments, so proceed. To mark the increase or decrease of recoil, as far as personal feelings are concerned, is very natural; but unless it be inordinate, it neither adds to, or detracts from, the real force of the shooting of that gun. We are conscious we shall find disbelievers of this doctrine, but when they have made only one-half of the number of the experiments on the subject which we have done, they will be of the same opinion. Consequently, we deny the *dictum*, that the recoil and the range are in the reciprocal ratio of the gun and the shot at all times. Let the tyro be assured that heavy loading will not further his views as connected with the killing of game. If he put into the gun too much shot, the expansive force by which the charge is ejected will be disgregated, and consequently both its range and force will be lessened; if too much powder be used, it may be ejected, or at least disturbed, ere it acts on the mass of shot. How many unburnt grains of powder may be collected from a sheet spread under a heavy charge of shot when exploded. A cautionary remark may be neither irrelevant nor out of place. While loading one barrel by no means put the ramrod down the other as is often done; on the contrary, return it partially into its place, or even hold it under the arm, although unsportsmanlike. When it has been put down the barrel, should only one shot follow, it often happens that by its means the ramrod becomes wedged in, and cannot without injury to either ramrod or barrel be removed. By all means, likewise, after the fired barrel has been re-charged, slightly shake the gun, so as to assure yourself that the shot in the right-hand barrel has not moved; if it rattles or vibrates against the sides, again ram it down. The least shake of the barrel will detect the loosened charge, and thus save much trouble; but when a substantial wadding is introduced, of the full size of the caliber, there is little chance of the shot becoming displaced.

2527. *Mr. Greener's opinions on the proportions of powder and shot* to form a proper charge for a gun are as follows: — As regards the powder, " Suppose you begin with two drachms, and vary the charge one-eighth of a drachm, each shot up to three and a half drachms, or as may be required, according to the length and bore of the gun, and for precision taking three shots with each charge, at a sufficient number of sheets of paper; whichever you find strongest, with the least quantity of powder, that is the best charge, as very likely the two next additions of powder will shoot equally strong, and yet not stronger, because more of it remains unburnt. Therefore, the least quantity that shoots equally strong is the proper charge, which having once ascertained, never change for any person's plan." (P. 181.)

2528. *On the proportions of shot the same gentleman observes,* " All guns, according to their bore and length, will shoot a certain weight, and a certain size of shot best. A great deal of shot in a small bore lies too far up the barrel, and creates an unnecessary friction; and the shot by the compression at the moment of explosion becomes all shapes, a circumstance which materially affects its flight. If of too great a weight, the powder has not power to drive it with that speed and force required to be efficacious, because the weight is too great in proportion. Those who reason from mathematical calculation will object to this doctrine. Say they, the greater the weight the greater the effect. No doubt it is so, if thrown with a proportionate force; but that cannot be obtained with a small gun. We must adapt the weight of projectile force to the power we are in possession of; and from many experiments I am inclined to think, that a fourteen gauge, two feet eight barrel, should never be loaded with above an ounce and a half of shot (No. 6. will suit her best), and the utmost powder she will burn. A fifteen gauge will not require more than one ounce and a quarter; and no doubt No. 7. would be thrown by her quite as strong as No. 6. by the fourteen gauge-gun, and do as much execution at forty yards with less recoil; and setting aside all other reasons, I should, on this account, prefer a fifteen gauge-gun, if both be of a length, finding I can do as much execution at the same distance with one as with the other." (P. 182.) The subject is an important one to the sportsman, and ought not to be lightly passed over; indeed, it is of the utmost importance, as well to the safety as to the success of the sportsman. Under this conviction, and at the risk of being taxed with being too profuse, we have not only somewhat enlarged on it ourselves, but have also stated the opinions of our most accredited writers, that the ingenious reader may choose between them, or adhere to his own, if they have satisfied him. *Experientia docet* (experience teaches) is an old but excellent maxim.

SECT. II. *The Art of Shooting Flying.*

2529. *To arrest the progress of a bird on the wing, or of a beast when running,* cannot but be considered as an act both of enterprise and dexterity. It is not, therefore, to be wondered at, that shooting should be so favourite an amusement, nor that in many hands it proves so difficult of attainment. We know at the present moment several zealous sportsmen, who will walk after grouse from early morn until dewy eve, and consider themselves sufficiently repaid if they have averaged one bird from every four shots; while the partner of such an one, not a whit more eager, seldom misses more than one out of five or six shots, and yet esteems himself an indifferent marksman. To what are we to attribute this vast difference? Has it many causes, or has it one principal cause only? Some persons of a sanguine temperament unquestionably miss their aim from blending fear with hope to such a degree as to unnerve themselves, and this we believe to be the most common cause of indifferent shooting: they frequently fire too soon, and even without an aim, or they linger in incertitude until the object is out of bounds. We write of taking aim, as though it were actually necessary to success to carry in our eye the line of the gun, from the breech to its muzzle, which must cover the object to be fired at, if the object be at a moderate distance, or must be raised somewhat above it if it be farther off, unless the gun be furnished with the elevated rib. But although this is the only method to insure success, yet there are many of our best shots who appear to become such by intuition; for very early in their shooting career they seem to be sensible to a consentaneous sympathy between the elevation and presentation of the gun directly towards the object to be fired at, without any conscious mensuration. We have heard of a dexterous shot who was so impressed with an opinion, that, in the absence of all cogitation on the matter, what the eye saw the hand would also act in unison with, that he laid a wager he would kill his bird, making his point at it from under his leg as certainly as his antagonist would do it in the usual way; and he did it, not once or twice, but repeatedly. The philosophic sportsman will at once recognise and understand this sympathetic action between the eye or eyes (as many good shots do not close either) and the motions of the hands. In archery practice, how is it that we direct our arrows with such unerring certainty? We do not look along either the bow or the arrow, but at the target; yet both organs, hands and eyes, act in concert, and the prize is gained. Many excellent shots invariably fire at their game with both eyes open. Mr. Baker, a valued friend of ours, and an excellent shot, always uses both eyes; it does not at all matter, in the hands of these made shots, whether one or two be used; it is the bird alone that is looked at, the hand acting in unison, levels and directs the gun. It is the want of coolness that is the cause why so many zealous sportsmen never become good shots; nevertheless, in the face of our cautions against firing too quick, probably it is better to fire too quick than too slow. A quaint writer on this subject says, "the fingers being a day's march behind, is the principal cause of missing;" and we are confident that, to a certain degree, he is right. Remedy this hanging fire by a settled determination to pull the trigger the moment your gun covers the object, particularly if it is going straight away; but should its direction be to the right or left, fire a little a-head. First, however, endeavour to attain the habit of actually and correctly covering the object to be shot at with the muzzle of the gun, and be equally careful, at the same time, that the breech and muzzle are rectilinearly directed. But hark, back! and we will, as some wiseacre has said, "begin from the beginning," and suppose ourselves undertaking to instruct the entire novice, one who has not hitherto ever fired off a gun even. Having well considered the height, length of arm, and inclination of shoulders of the pupil, observe that the initiatory lessons be given with an uncharged gun; but the gun must be equally critical in its perfect adaptation to the personal points of the tyro, that is, that it comes up readily to his shoulder and settle itself, as it were, spontaneously to a correct line of aim (see *Gunstock*, p. 761.), the breech and sight at once presenting a dead level, and covering any small object, as a wafer stuck against a wall. The accuracy of the aim the Mentor will observe, by placing himself advanced a few paces directly before the gun, from which position he will be able, by directing his eye along the line of the barrel, to correct his pupil by requiring him to elevate or depress either the breech or the muzzle as the case may be. This simple *handling* of the gun should be practised for an hour or more at a time for several days, occasionally raising or depressing the object of aim: indeed, with a little mechanical tact, the object of sight, be it round or otherwise, may be made movable, so as to advance, retire, or proceed, to the right or left, &c. It is of consequence that it be impressed on the recollection of the learner, that he hold his gun firmly to his shoulder (see *fig.* 392.), and place his left hand close, or nearly close, to the trigger-guard. Having safety in view, this certainly is the best method, as many barrels of guns so held have burst without shattering the hand. Some sportsmen, however, satisfied of the perfect safety of their piece, advance the hand a few inches forward, and without doubt it has the effect of preventing the gun from becoming point-heavy, which is at all times most unpleasant; and at the end of a long day is, without doubt, the cause of many a misshot. The Mentor, indeed, would do well not even to allow the initiatory lessons to be made with a piece whose ends are not proportionate in weight, that the habit we caution against may not take root: if, however, it should unfortunately happen, that a gun of this description has been already purchased, let the stock be charged with a portion of lead run into a cavity directly behind the heel-plate, as further noticed at p. 762. A gun being breech heavy is not very common, and is an evil, when it does occur, that is of less importance.



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METHOD OF HOLDING A GUN.

2530. *To enter the pupil to the shooting of living objects* is the next lesson, and we would commence by remarking, that we are by no means enamoured of the usual plan recommended of firing at swallows and martins. Their flight represents very indifferently the flight of game of any kind, independently of its unnecessary warfare on a most interesting and innocent race. A better practice is to entrap sparrows in numbers by means of traps or by what is known as bat fowling. Sparrows thus taken, and having their flight somewhat obstructed, as well as their figure enlarged, the first by shortening their wings, and the second by a piece of white paper around the neck, make excellent marks. In this state, being liberated one by one from a box on the ground, at fifteen or twenty yards' distance, a ready aim may be taken at each, and will offer a very good initiatory practice, which method of entering a pupil may be, and will be, laughed at by many; but we have known so many instances where an early tremor has delayed improvement in some, and marred it altogether in others, that we recommend it confidently, as it does much towards divesting the pupil of that trepidation which the rush of a covey of partridges occasions, should he be entered first to them. By this mistake of not being subjected to an initiatory process, such as that we propose, some have never been able to see a covey rise without a painful agitation. We would also strongly advise the young shooter to commence his practice with both eyes open, as by far the best method. Colonel Hawker says, " If the young shooter begins to shoot with both eyes open, he will save himself the trouble of learning to shoot so afterwards. An aim thus from the right shoulder comes to the same point as one taken with the left eye shut, and it is the most ready method of shooting quick." (P. 139. 8th edit.) On the expression, " shooting quick," we would ourselves observe, that we here enter a caution against any misapprehension of the term. With us it would imply promptness, but we would by no means wish to make any pupil of our own a *snap shot:* such are not pleasant company shooters, and they usually mangle their game terribly; but we again repeat, real *dead slow* shooting we would eschew. We would also strongly recommend the young sportsman, that while he is not careless of success, but, on the contrary, endeavours to secure it, he be not over anxious for it, nor dispirited in case he should succeed indifferently only on his outset. We know of nothing so likely to beget disappointment as despairing to succeed; on the contrary, he may rest assured, that with only common attention and continued practice under good tuition, in company with steady and good sportsmen, he will himself become their equal : what the head determines the hands will generally perform; fire moderately quick, but nevertheless not in a hurry. *Festina lente* should be engraved on the breech of the gun of every beginner, as quickness without impetuosity is exactly what is wanting to make an excellent shot.

2531. *Trepidation and indecision*, we repeat, are great drawbacks on attaining the art of shooting flying. We conceive that this assertion will be readily understood and assented to, when the different attitudes of the gunners seen in our next figure, p. 784. are studied. Look at him, who, in spite of our instruction, is seen stooping, and creeping with his shoulders thrown forwards, and his heart, in all probability, fluttering at the very sight of his dog which he hopes may be pointing his game. Look also at the deportment of his accompanying friend, who is seen advancing upright and steady, although evidently delayed by the perturbation of our pupil, to whom we would thus address ourselves: — Compose yourself, good pupil; be a man, and advance erect, under the assurance that when you do rise you must somewhat discompose your whole frame; and that, in altering your position, you will lose some seconds in gaining a new one; neither is a rising attitude favourable to a quick and correct elevation of your gun. Of this we are so assured, that we are prepared to bet against your success, and are equally ready to back that of your companion. Bravo! you have taken our advice, and are actually upright; and, what is confirmatory of the justness of our remarks, your dogs remain steady, and the birds close; step out therefore firmly, but leisurely, that, on the instant the birds do rise, you, being already prepared with your gun a little pointed forwards, advance your left leg straight, and direct your right foot slightly outwards to strengthen your position, without any hurtful constraint on your person, but, on the contrary, making it at once strong yet flexible. A firm placing of the lower limbs, it is self-evident, is very important in shooting; for it greatly assists the arms in readily and gracefully elevating and presenting the gun. We hardly need to tell the most youthful gunner that his piece is to be usually carried barrel upwards, and sloped over the left arm, the lock being clasped by the hand of that side, the fingers embracing the cock, which allows the arm, although supporting the gun, yet to do it with ease, and to be ready by a cross motion to place it within the grasp of the hand previous to the meditated elevation. We have observed some practised sportsmen at this period of shifting the gun to turn the barrel down, not on the right but on the left arm, the flat part of the stock opposed to the lock being clasped with the left hand, the thumb resting as a guard on the trigger, while the fingers pass around the upper portion of the stock turned down. In the other method it is evident that the weight of the piece bears chiefly upon the cock, and it is equally so that, by this mode of carrying the gun, not only is the cock less liable to suffer from accident, but that the removal of the gun into the right hand is more quickly effected, the left taking its place when wanted for shooting action. We may also remark, that the young gunner is apt, after an hour or two has been spent in walking, to become fatigued, when the carriage of the gun, as we have recommended, is felt somewhat fatiguing. At such times it is apt to be carried either on the shoulder, or is seen swinging on the fingers. Should this slovenly method be adopted, it must not be wondered at if the dogs become slack in their hunting by taking the tone from their master; and it is ten to one, that although some of the fairest shots of the day may present themselves, yet, for want of being ready, the opportunity of taking them is lost, the shooter is chagrined, the dog even looses his mettle, and the sport is at an end. The author of the clever work entitled *Kunopœdia*, finishes his initiatory lesson on this subject by desiring the pupil to "carry the gun with the cock inwards and down, and the side of the stock imbedded against the inside of your left arm, taking an easy position, considerably below the chest." Now, sir, look at the important difference in the elevation of the barrel: even carelessness can hardly bring it into a direction in which the discharge from it would not be made at an angle of twenty or thirty degrees above an horizontal line; much above every possible risk to the nearest ranging companion. Under the contingency of a fall, the difference is still greater: in the former position, from a trip of the foot, the arm being instinctively thrown forward, down goes the muzzle of your gun sideways, and off may go the contents, raking the whole line to the left: but if carried in the other way, and clasped by the left hand as directed, then, under the same falling projection of arm, the discharge would be at a considerable height in the air, with the additional security of a direction backwards." (P. 180.)

2532. *Advancing to fire.* We will now look to the sportsman on the right, where the shooter exhibits himself and the art to advantage, by moving firmly but cautiously towards his dog, now making a dead point, and being admirably backed by his fellow dog. We suppose the right hand of the gunner grasping the stock (*fig.* 393.), with the fore-finger alongside of the trigger, but which is nevertheless guarded from any accidental effort by the thumb, which secures the half cock. These cautions are very necessary; and what evils might not result were the approach made without them, when the entangling of an unseen briar might catch the advancing foot, and the stumble occasion the firing of the gun, which might wound the dog, and certainly utterly disperse the game. If, on the contrary, he advance in the true attitude of an experienced and practised shot, with his eye fixed on the supposed situation of the birds, it is directed by Mr. Dobson that he make preparation for the expected shot, by throwing the butt of his gun from him to an easy extent of both arms; but loosening a little the grasp of the left hand, turn the cock downwards, and let the barrel come down more in slope over the left shoulder. It is during this combined action of throwing the butt from him, and turning the cock downwards, that the act of cocking will most readily be performed, the cock to continue secured by the thumb over it, and quitted only as he proceeds to the next motion. "In the act of cocking let your fore-finger quit the front of the trigger, and, extending itself sloping forward through the guard, only feel the side of it with gentle pressure. Your body, by this action of throwing out the butt, combined with the step-out of the left leg in taking form, will be brought with its weight principally upon that limb; a position assumed, as more immediately called for, when the flight is nearly in a line from you or to the left, which will comprise four out of five of all your shots." (*Kunopœdia*, p. 185.) Present! "Let the barrel, as at this moment, inclined over the left shoulder, be swept in a circle forwards with a smart motion, the fore-finger of the right hand (sloping, as we have before placed it, through the guard, and clear of the front of the trigger), being as it were the centre of motion upon which the gun turns during the sweep; by which action the butt should be raised nearly to its full height, and then bring it back, with somewhat of a thump, into its place within the shoulder; whilst, at the same time, an increasing grasp with the left hand, which till now has kept its hold rather loosely, combines with that of the right hand upon the gripe of the stock to keep it firmly there. The direction of the barrel to the mark, or what I would call the *line of level*, to be taken, in the first instance, a little below that which, as already drawn by your eye to the object, I would distinguish by the *line of sight.*

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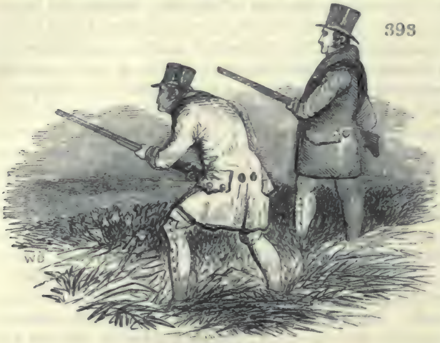

ADVANCING TO FIRE.

Again let me remind you, that the latter be firm and irremovable; to which a precise adjustment of the line of level must finally be made, by an easy flexure of the upper part of the body altogether, but without any loosening or twist of the butt from its firm hold within the shoulder: and on the instant that you get these two lines in contact, or, in other words, at the moment that you bring the muzzle of your gun, from its first level a little below, to bear direct upon the object." (*Kunopædia*, p. 187.)

2533. *The handling and direction of the gun*, however, must of necessity vary with the nature of the game to be fired at. Colonel Hawker directs the beginner in the movements of his gun as follows: — "Before an object *crossing* — full high for a bird *rising* up, or flying away *very low*, and between the ears of hares and rabbits running *straight away*; all this, of course, in proportion to the distance: and if we consider the velocity with which a bird flies, we shall rarely err by firing at the crossing bird, when at forty yards, at least five or six inches before it. (As the barrels of double guns usually shoot a little inwards at long distances, there is so far a preference in favour of the right barrel for an object crossing to the left, and *vice versâ*, that if we were beating along the side of a hedge, it would be best to keep the barrel next to it in a state of preparation). Till the pupil is *au fait* in all this he will find great assistance from the sight, which he should have precisely on the intended point when he fires; he will thus, by degrees, attain the art of killing his game in good style, which is to fix his eyes on the object, and fire the moment he has brought up the gun. He may then, ultimately, acquire the knack of killing snap shots, and bring down a November bird the moment he tops the stubble, or a rabbit popping in a furze-brake, with more certainty than he was once used to shoot a young grouse in August, or a partridge in September." (P. 134.) We read in a work of less repute, that in taking aim, "the point of the gun or sight, in a right line from the mark upon the breech, should be levelled point-blank with the object; and then the finger must instantaneously pull the trigger, as on this quickness of the hand the whole art of shooting depends." It is not to pick out defects in the writings of others that we notice any such misdirections as these, but merely to warn the tyro against following the matter, often collected to make up a book by persons who, though not being practically acquainted with the subject they write on, yet by dogmatic assertions and mystifications contrive to command attention and belief from the inexperienced. The following directions by the *Suffolk Sportsman*, from the pen of the learned and reverend B. Symonds, are not of this class; and although they had not before met our eye, we cannot refrain from strengthening our instructions by what we consider a backer to them:—"When a bird gets up he is certain he cannot kill it (we must premise that his gun is uncharged), therefore he can wait to any length, until he gets it at the end of his gun. He must never draw unless positive of seeing the bird in that very point of situation. Let it go: every fresh spring of a bird will make him more composed; and as the tremor wears off, he will grow more uniform in his manner of getting to it, till at last he will cover it almost to a certainty, or very near the same distance. Let him accustom himself not to take his gun from his arm till the bird is on wing, and never to vary his eye from the very one he first fixed upon. Three words should mentally be used, with a pause between, before he puts his piece to shoulder: this will keep him, as it were, in awe of himself; and as there is no charm in any particular combination of letters at this time, hold! halt! now! may serve as well as any. A day thus spent, he may put some powder into the pan, and flash away in that manner; the next, pursuing the former directions till he can stare with stedfastness, and pull without a wink. The day following load with powder only; and to continue this lesson two or three days, more or less, till he is calm as if the leather was yet in the chaps. Now the grand and last trial — complete loading. If he feels any flutter or anxiety on his advance to the point, let him draw his shot at once; nay, powder also, before he goes up to his dog; and repeat this, *toties quoties*, till he has whipped himself into good temper, and disappointed himself into the accomplishment of his wishes. In cross-shooting, if a bird goes to the left, step forward with the right foot; and the contrary if to the right hand. This removes at once the complaint often made, of not killing so well one way as the other. Shoot at the head in every direction, if possible; and I cannot see any necessity for greater allowance. In elevation, let the front of the guard be a stop for the gripe of the left hand; in which situation, if the barrel should burst, it will not be so liable to be injured; and the thumb being erect, an avenue is artificially made by means of its corresponding with the cock-nail, that gives great direction to the eye. I hope all this appears rational and convincing." (P. 148—151.)

2534. *The connection between the eye and the hand* should be consentaneous, but not arbitrary, further than that the hand should obey the eye, rather than the eye should be subservient to the hand. As soon as the eyes bear on the object to be fired at, provided the muzzle of the gun does the same, fire; for protracted looking weakens the sight, and also increases the distance of the object shot at. It is this protracted looking until a sufficient distance has been passed over, that occasions so much difficulty in killing a bird that rises as it were under the feet, and continues its flight horizontally. Such a shot is often missed, for a long aim fatigues the eye, and unsteadies the hand. "The young shooter," Mr. Daniel observes, "should make himself perfectly acquainted with distance; with that knowledge in open shooting, he will never put the gun to his shoulder until the bird has flown a proper length, and then fire the instant the sight of it is caught. To kill birds flying cross either to the right or left, allowance must be made by the shooter both for the distance he is from them, the strength of the birds, and also the velocity of their motion; for it must be taken into account that the flight of a partridge in November will be greatly accelerated to what it was two months before. Practice alone can teach these *minutiæ*, which, if fixed at any given space, or attempted to be uniformly regulated upon paper, might lead the marksman erroneously in the field. It may however be mentioned, that in a cross shot to the right the difficulty is very much increased if the right leg is first when the bird rises; the gun cannot then be brought but a very trifle beyond a straight line to the right, and frequently gentlemen stand with their feet thirty inches apart when in the act of firing, a position that effectually prevents their bringing their gun to bear upon a crossing object. When dogs point, or when game has been marked and expected to spring, the walk should be with short and easy steps; the body can then be easily turned upon the legs, as if on a pivot, and the range of the bird commanded, even if it should fly quite round the sportsman. The science of aiming accurately, however, will be of little service, except the gun is held steady from all starting or flinching in the action of firing; it is to small purpose to traverse the gun with the celerity of a bird flying rapidly in a transverse direction, if the person suspends that motion when he touches the trigger to pull it. In this interlapse between the beginning of the pull and the appulse of the shot to five and thirty or forty yards' distance (be the pull and stroke of the cock as short, and the fire as quick as possible), any bird of game will, in a serene day, gain progressively in its flight above two yards, and with a rough wind considerably more. Quickness of sight and steady aiming will never constitute a marksman, unless the motion of the gun corresponds with them, and receives no check whilst in the act of drawing the trigger." (*Rural Sports*, vol. iii. p. 488.)

2535. *What should be considered as the average distance of a fair shot?* is a question often asked, and not infrequently very unsatisfactorily answered; indeed, it might be said it cannot be arbitrarily laid down so as to satisfy every one who either acts on, or forms an opinion on the subject. We are however told, that as far as a general average can be stated, a bird should never escape from the shot of a gun held straight at forty yards. That being considered by many as the fair range of a point-blank *certain* shot is admissible, but it must be allowed that there are three chances to one that, under the same circumstances, a bird will not escape at forty-five or even fifty yards. It is also consolatory to the sensitive shooter to reflect, that the irregularity of the spread of a charge of shot, however well directed, has permitted many a bird to escape at even less than forty yards, and will do so again.

2536. *Shooting in company* should be methodically conducted, to avoid any unpleasant collision or misunderstanding. All birds that cross should be considered as belonging to the gunner to whose side their heads are pointed, unless a previous understanding is agreed on, that either party may take an after shot at a tailing bird. All single birds that rise and go away fair for either party, it may be well to have it previously understood that such should be taken alternately by each shooter.

2537. *Precautionary remarks* of so much importance are directed to individual sportsmen by Mr. Daniel, that we cannot in justice to our subject omit them; and although it may be said that they were intended for the flint-gun, yet it will be found that they apply with equal force to either; and they being so calculated to excite precaution in a sport but too carelessly pursued frequently, we cannot do a better service to the youthful shot than to introduce them:—"Always hold the gun with the left hand close to the guard (and not forward upon the barrel to strongly grasp it near the entrance of the ramrod, notwithstanding it has been so strenuously recommended); all the requisite steadiness in taking aim, and even of motion, in traversing the flight of a bird, can be obtained by thus holding the heaviest pieces; and in case of a barrel's bursting, the certainty of having a hand or arm shattered by grasping the barrel is reduced to a certainty of escaping some of the effects of such an accident by placing the hand close to the guard beneath it. With double guns a danger arises from the shooter who fires but one barrel, and kills his bird, forgetting to uncock the other previous to his reloading that which has been discharged: to obviate this, let him invariably uncock the second barrel before he sets the butt of the gun upon the ground. A sense of self-preservation will soon render this habitual, and a man who is so absent or so eager as to disregard this practice, had better confine himself to the carrying a cane instead of a gun." After discharging one barrel, it is common with some to pass the ramrod down the charged barrel to refix the shot and the wad, which from the recoil are apt to become loose; and when that is the case, it is not only needful to prevent the sho from falling out, but is an act of safety, lest there should be a space between the shot and wadding, which would endanger the barrel. It likewise prevents mistakes in loading; and no objection can be made to it but one, and that is a very important one; we allude to th accidental fall of a shot into the loaded barrel whilst pouring the charge into the fired one, which may occasion much trouble, and serious injury to the barrel or to the ramrod, by attempts to forcibly withdraw it. In such a case keep the ramrod close down, next turn the muzzle into the hand, still keeping the ramrod home upon the charge; when the stray shot will roll out, or be easily extricated. When uncocking a gun, never remove the thumb from the cock until having let it pass down beyond the half bent, and gently raising it again, the sound of the scear is heard catching the tumbler. Carrying the gun in a safe position, and well securing the lock, are the first instructions a Mentor should give, and a young sportsman should learn, and never cease to act up to. The result of neglecting other observances is generally no more than missing the object; but carelessness in the handling or position of the gun are too frequently attended with the most melancholy catastrophes. However probabilities may be calculated on, a proper attention to the muzzle prevents the possibility of mischief from one source, an instance of which is as follows:—When a keeper of the Earl of Chesterfield's was preparing for the field in January 1789, and stooping to buckle on his spur as he sat with his gun resting on his knee, and the muzzle close to his cheek, it seemed *improbable* that a part of the lock should break at that particular point of time; but his instantaneous death was the terrible effect of his not having guarded against what was *possible*. The muzzle of the gun pointing obliquely upwards between the left elbow and left cheek, if the piece fires ever so often by accident, can never do harm; and from this position it may be presented with more ease, expedition, and correctness, than from any other. Beware of the muzzle of the gun being kept hanging downwards; when so carried, the shot is apt to force its way from the powder, especially in clean barrels: if it happens that a space of sixteen or eighteen inches is thus obtained, and the gun fired with its point at all inclined downwards, it is ten to one but the barrel bursts. There are other perilous consequences besides the disruption of the barrel; for men, horses, and dogs, are in perpetual danger of being shot, when a gun is carried in the before-mentioned pendent manner. In shooting with a stranger, who perhaps keeps his gun cocked, and the muzzle usually pointed to the left, plead for the right hand station, and urge that you cannot hit a bird flying to the left; with a gamekeeper, take the right hand without ceremony. In getting over a fence, endeavour to go last, notwithstanding the usual assurance of 'My dear sir, I am always remarkably careful:' and if a person beats bushes with a cocked gun, get out of his company as a shooter with all possible expedition. Recollect, both in the house and in the field, always to consider a gun as loaded, and never suffer it to be pointed for a moment towards any human being." (*Daniel's Rural Sports*, vol. iii. p. 489—493.)

Sect. III. *The Spaniel Group of Caninæ.*

2538. *The systematic history* of this important and extensive family is fully entered into in our *Natural History of the Dog*, p. 386. to which we would refer the reader for any matter of importance required to carry out the canine connections, either derivative or supplementary, of these or other sporting varieties of this valuable animal. The spaniel group includes the setter, the common spaniel, the Newfoundland dog, and the retriever; the whole of which, there is much reason to believe, are derived from the eastern hunting dogs of scent, as the coursing dog was also the produce of such as hunted more by sight than scent. Without any proof that Spain, in particular, originated this dog, either as he is known to us, or in the varieties we have named, we are at least certain that all the individuals specified in our section were originally included under the term *spaniel*, and were of eastern origin. In Ireland the setter was long called the English spaniel, having been originally borrowed from us; and with many is to this day so called. The integrity of the eastern spaniel appears, however, to have been early broken in upon by artificial mixtures and crossings, to establish the distinct varieties we are about to treat on; but, nominally, the term spaniel for a very long period included almost all the rough-coated dogs. The setter particularly was known by the term spaniel; thus Gay has the "*creeping* spaniel," which denotes his attitude in advancing, as Thomson's flowing measures depict:—

> "How, in his mid career, the spaniel struck," &c.

The MS. of Twici, also, has the spaniel for hys craft; which is for the perdrich and quail, and when taught to crouch is very serviceable to the fowlers, who take those birds with nets. We may reasonably suppose that, notwithstanding these quotations, the index or point made by the setter was at least not perfect until he had been duly tutored by education. We may assume, therefore, that the spaniel group was first cultivated in the eastern countries, where civilisation among its inhabitants and a genial climate would tend to the improvement of its native animals. And as we have innumerable proofs of the attachment of these people to the sports of the field, we may conclude that their dogs were judiciously selected from those which showed the greatest propensity to hunt, and presented such form of body, and such qualities, as would insure their success in their huntings. It has been with much probability supposed, that the first use the inhabitants of every country would make of the subjugated dog, would be to guard their cattle from the incursions of wild beasts and the maraudings of human robbers; and the second, to select those which evinced aptitude at securing animals for the support of their masters. Under this view, it follows that such only would be selected for these purposes as showed strength of body with sagacity and determination as mental characteristics. This eventually led to a triple division of cultivated dogs of the eastern countries into *sagaces, pugnaces,* and *celeres.* (See *Coursing*, p. 555.)

Subsect. 1. *The Setter.*

2539. *The setter* (*Canis Index* Linn., *fig.* 394.) we consider to be much in advance of the pointer, in respect of the date of our acquaintance with him. Robert Dudley, Duke of Northumberland, as early as 1555 is said to have trained a setter to the net; and other authorities of antecedent dates notice the sitter or setter as a dog used for sporting purposes; for it was not to be concluded that this application of him by Dudley was his first advent, although he might not until then have been employed as *sitting* or *crouching* to the game he found. The junior sportsman who may honour these pages by a perusal, to perfectly comprehend the intention of the writer, should keep in mind that the setter and spaniel may be considered as direct identities in the beginning; and that they still remain closely allied to each other in every respect except in size. It is to the instinctive disposition in all the spaniel tribe to wind the scent of game, and then to pursue it with ardour, that makes it so much more difficult to steady a setter than a pointer; the latter having, without doubt, been generated by a sexual intercourse between the two ancient canine races, *sagaces* and *pugnaces;* whereas we may, with equal justice, derive the setter from a commixture between the *sagaces* and *celeres;* or, for a more satisfactory account of the three important canine races known as the sagacious, pugnacious, and swift-footed dogs of the ancients, see our *Coursing* department, p. 555. The spaniel group numbers within its limits more symmetry of form, and beauty of clothing, than the varieties of any other canine group. The setter indeed, on which we now treat, both in size and strength has no rival, if we except the Alpine spaniel and the Newfoundland dog, whose majestic form and admirable qualities, were other proofs wanting, would convince us that they also are scions from the same root. Indeed, as we believe, both can, by the aid of early records, be traced to the same stock, the Newfoundland dog having been originally taken to Newfoundland by the early discoverers of the American continent and eastern traffickers. We were not always of this opinion; on the contrary, in the early editions of our *Canine Pathology* we have stated our doubts of the immediate connection o this dog with the spaniel, but which we are now satisfied, by the aids of more extende research, is established. The Newfoundland dog has acute scenting powers; he is naturall extremely fond of hunting, has great tact in the pursuit of any game; and may, in comparison with what might be expected from his connection with his restless type the spaniel be taught to *stand* to game, and even to *back* other dogs — such are his tractable and teachable qualities.

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THE SETTER.

2540. *The principal varieties of the setter are the English and the Irish.* The Englis setter in size does not differ from the pointer, but is more loosely made, so as to admit o more rapidity of motion with less diminution of the continuance of that motion. Indeed it in some respects represents the race-horse among dogs; for he is not only fleet, but ver enduring also, and is equalled by few hunting dogs in sagacity, and excelled by none in docility and personal attachment. The temper of the setter has all the spaniel character of humility and fear of offending, and it is but seldom that one either perverse or of a savage natur is met with; on the contrary, they almost all return encouraging notice with marked gratitude. As we are well known to be most zealous in the cause of the canine race, as bein equally useful, interesting, and amiable, we shall stand excused for offering the followin portraiture of the character of one of this race from so respectable a source as the *History o British Quadrupeds*, by Thomas Bell, F.R.S., F.L.S., where we find the learned professo thus discoursing on a setter: — "By far the most interesting, and, if I may so employ th term, amiable animal I have ever known, was a bitch of this kind, formerly belonging t my father, which he had from a puppy, and which, although never regularly broke, was th best dog in the field he ever possessed. The very expression of poor Juno's countenance wa full of sensibility and affection. She appeared to be always on the watch to evince her lov and gratitude to those who were kind to her; and the instinct of attachment was in her s powerful, that it showed itself in her conduct to other animals as well as to her huma friends. A kitten which had been lately taken from its mother was sent to us, and on Juno approach showed the usual horror of the cat towards dogs. But Juno seemed determined to conquer the antipathy; and by the most winning and persevering kindness and forbearance — advancing or receding as she found the waywardness of her new friend's temper required — she completely attached the kitten to her; and as she had lately lost her puppies, and still had some milk left, I have often seen them lying together before the fire, the kitten sucking her kind foster-mother, who was licking and caressing her as her offspring. She would also play with great gentleness with some rabbits of mine, and would entice them to familiarity by the kindness of her manner; and so fond was she of caressing the young of her own species, that when a spaniel bitch of my father's had puppies, of which all excepting one were destroyed, Juno would take every opportunity to steal the remaining one from its mother's nest, and carry it to her own, where she would lick and fondle it with the greatest tenderness. Poor Bussy, the mother, also a good-tempered creature, as soon as she had discovered the theft, hastened, of course, to bring back her little one, which was again to be stolen the first favourable opportunity; until at length the two bitches killed the poor puppy between them, as they were endeavouring each to pull it from the other; and all this with the most perfect mutual good understanding. Juno lived to a good old age, an unspoiled pet, after her master had shot to her fourteen seasons." (P. 220.)

2541. *Two varieties of the setter have been noted*, the English and the Irish setter. Of the origin of the setting spaniel generally we have already stated our opinion; it remains therefore to notice these principal divisions as agents in the field. The *English setter* in size equals the usual run of pointers; in colour he may be met with of almost every tint and marking common to hounds and spaniels; and as far as our own experience extends, the colour of this dog has little to do with his qualities, although fashion in this particular often influences the market price among the sellers and purchasers. One variety we will hint at, of a liver colour, which we thought superior to most others of that time, *i. e.* twenty years ago. The preponderance of the liver hue in this dog was often considerable, but we saw but few entirely covered with it.

2542. *The Irish setter is a large red dog*, of very commanding mien, great powers, and excellent sporting qualities. When we were quartered in Ireland during the Rebellion, we had numerous opportunities of seeing this dog, both in the field and in the kennel; and when well tutored, and kept up to the mark, by strictness divested of severity in point of corporal punishment, he was equally vigilant and steady, either at the point or crouch. Some we saw had rather a lurching propensity of creeping close to the ground, which, if not noticed and reprehended by the owner, ended in a violent spring into what was intended to be the middle of the *pack* or the *covey*, as the case might be, and which, as we learned, was not an infrequent occurrence. We should however remark, that on inquiry it commonly turned out that these semi-poaching dogs belonged to entire pot-hunters, a class not less common there than here. It is truth only that dictates this as due to our readers, to note all we have seen, and all we have learned; but it is equally due to the Irish sportsmen generally to state, that, as far as our own experience went, the real gentlemen-sportsmen are equally enthusiastic in their field sportings, and equally fair in their methods of pursuing them as ourselves. The qualities of the setter generally are very favourable to his character; he however, in most cases, requires more breaking than the pointer; and it too frequently happens that his enthusiasm leads him to forget the instructions he has received, and a small sample of re-breaking is often required before the shooting practices of each season commence. This, however, is principally seen in young setters, and such as are closely kennelled at all times when not on duty: such will become too energetic, when let out to business, to mind that business; but must, like the schoolboy who takes his book into the field or garden to impress hard words on his memory, play with both book and memory; and so the wanton setter, thus confined, seeks a game with the birds, and prefers a chevy after them to crouching in inactivity behind them. The *Suffolk Sportsman* observes, "There are now various kinds *called* setters, from their being appropriated to that service, such as, between the English spaniel and the fox-hound, ditto and pointer, and the pure pointer simply by himself. Whim gave rise to the first cross very probably, but most assuredly indolence contrived the latter: none can have any just claim, however, to the appellation, but what is emphatically called, by way of eminence, the English spaniel. The Irish insist theirs are the true English spaniel; the Welsh contend theirs are the aborigines. Be that as it may, whatever mixtures may have been since made, there were, fifty years ago, two distinct tribes — the black tanned and the orange, or lemon and white." (P. 3.) This reverend writer, who is evidently an excellent judge of the form and qualities of the setter, known *par excellence* by him as the English spaniel, is not favourable to any crosses of the pointer with the setter, and intimates that he would rather prefer having the wildest setter to break, than a dog half pointer and half setter. He also challenges any sportsman to produce an instance of a "full English spaniel," by which he means a well-bred setter, being sullen after correction. We crave pardon for not being able to carry our opinion of the temper of even the best-bred setter quite so far, as one or more instances of sulkiness in very excellent breeds have fallen under our notice; but we entirely agree with him, "that their attention to the whistle, and frequent looks for guidance from the hand, discover a ready and cheerful obedience not to be equalled elsewhere." What is much in favour of the setter, also, is his extreme hardihood under exertion: his quickness likewise enables him to go over much more ground than the pointer; but it is doubtful, even though we know that his scenting powers are so great, whether the advantage may not sometimes be counterbalanced by overrunning his game, or flushing it by precipitancy. The quartering of the ground, and the *dropping in* of the setter, it has been remarked, may be the mere effect of training; but, observes the *Suffolk Sportsman*, "when one who is betrayed beyond his common sett slips back to his usual distance, that must be all sagacity, all self." Such an act must indeed be rational, and extra instinctive: but to deny the rationality of brutes, in the present advanced state of knowledge would, we presume, gain little support. The valuable properties of the setter in grouse shooting are well known; and indeed, until lately, it was almost a rarity to see a pointer on the moors. It must be confessed that the hairy protection of the setter's feet, from the sharp pressure of the ling, enables him to go through a long day's work, over moss and moor, without injury, when the pointer (at least many of them) would be knocked up. A breed of setters, the property of the Duke of Atholl, were much celebrated, and many of the Highland tourists have mentioned their perseverance, scenting powers, and tractability, in terms of admiration.

2543. *The setter is without doubt to be preferred* by gentlemen who range widely, and follow shooting throughout the season with great ardour, particularly over moorlands, or the wide rangings of some agricultural counties, as Norfolk, &c. To such the setter, particularly if a good strain be hit on, will prove invaluable. The dash of these dogs, their superior speed, and little liability to become foot sore from the hairy padding of the spaniel foot, enables them to go through vast fatigue without that shortening stroke and apathy in pursuit which will occasionally mark the hunting of the fatigued pointer, however staunch he may be when fresh. We shall conclude the history of the setter as he is seen with us of the present day by a quotation from Markham, as to his properties and his employ in the latter part of the sixteenth and the beginning of the seventeenth centuries. We shall by this account find that we must not flatter ourselves that all our present knowledge is indeed of our own getting; and it will prevent our egotism from asserting that our ancestors knew nothing. On the contrary, it will be seen that our most important uses of the dog, and the methods of training him, were practised long since; and that we have done in many respects little more than adapt them to our present rapid execution with the gun. Therefore let no one seek to depreciate the value and extent of their knowledge; it was they discovered, and we took possession of the land. "Of the setting dogges," says Gervase Markham, "I know, that in diuers places of this kingdome they are to be taught (so that most men of ability may haue them at their pleasures), yet likewise I know they are sould at such great rates and prizes, that no industrious man whatsoeuer (which ether loues the sport, or would be partaker of the benefit) but will be glad to learne how to make such a dogge himselfe, and so both saue his purse, and make his pleasure and profit both more sure and more delicate; for this I must assure all men (that buy their dogges from mercinary teachers) that euermore those salesmen doe reserue in their own bosomes some one secret or another, for the want of knowledge whereof the purchaser quickly findes his dogge imperfit, and so is forced upon euery disorder or alteration of keeping to send the dogge back to his first master anew to be reformed, which drawing on euer a new price, makes the dogges certaine price without end, without valuation. This falt to redresse, and to make euery man the true master of his owne worke, I will shew you heere, in a briefe and compendious manner, al the mysteries and secrets which lie hidde in this laboursome businesse. The first thing therefore that you must learne in this art, is to make a true election of your dogge, which you intend to apply to this purpose of setting; and in this election you shall observe, that although any dogge which is of perfit and good sent, and naturally adicted to the hunting of feathers, as whether it be the land-spaniell, water-spaniell, or else the mungrels betweene either of both those kindes, or the mungrels of either of those kindes, either with the shallow flewed hound, the tumbler, lurcher, or indeede the small bastard mastiffe may bee brought to this perfection of setting (as I haue seene by daily experience, both in this and in other nations), yet is their none so excellent indeede as the true bred land-spaniell, being of a nimble and good size, rather small than grosse, and of couragious and fierie mettall, euermore louing and desiring toyle, when toyle seemes most yrksome and wearie, which although you cannot knowe in a whelpe so yong, as it is intended he must be when you first begin to train him to this purpose, yet may you haue a strong speculation therein if you choose him from a right litter or breede wherein by succession you haue knowne that the whole generation haue beene endued with all these qualities, as namely, that he is a strong, lusty, and nimble raundger, both of actiue foote, wanton tayle, and busie nostrill; that his toyle is without wearinesse, his search without changeablenesse, and yet that no delight nor desire transport him beyond feare o obedience; for it is the perfectest character of the most perfectest spaniell euer to be feareful and louing to him that is his master and keeper. I confesse I haue seene excellent rare setting dogs made in the low countries, which haue beene of a bastard tumbler's kind (for indeede a true land-spaniell is there gaysson) and indeede I haue found in them (if I may so tearme it) a greater wisdome (which indeede is but a greater feare) than in our land-spaniells; but, comparing the whole worke together, that is, the labour in raundging, the sent in finding, and the art in setting, they haue beene much inferior to our dogges, and not able to stand up with them in the lardge and spatious champaines, nor yet to brush through or make their waies in the sharpe thickets and troublesome couerts. To speake then, in a word, touching the best choice of this setting-dogge, let him be as neere as you can the best bredde land-spaniell that you can procure; and though some haue beene curious in obseruing of their colours, as giuing preheminence to the motley, the liuer-hude, or the white and blacke spotted; yet, questionlesse, it is but a vaine curiosity, for no colour is amisse for this purpose, prouided the naturall qualities bee perfit, and answerable for the worke to which ende you intende them." (*The Art of Fowling*, p. 264—268.)

Subsect. 2. *The Pointer.*

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THE POINTER.

2544. *The pointer* (*Canis avicularis* Linn., *fig.* 395.) is principally confined to the English, Spanish, Russian, and a diminutive type known to some as the *French pointer*, which, though beautiful, and even apt in scenting, yet being too insignificant for the sportsman's purpose, will not detain us longer. The Spanish pointer, heavy and grave as he is, will also not engage much of our attention, although his merits, which have shown themselves in a cross, either with a setter or fox-hound, by a union of strength with great scenting powers, give him much claim on our regard. The celebrated pointer dog, Dash, so admirably portrayed by Gilpin, was the produce of a Spanish pointer and a fox-hound, and the blending of the high scenting powers of the Spanish pointer, and the dash, speed, and courage of the fox-hound, produced one of the best pointers that ever crossed a field, or ranged a moor; either as regarded speed, endurance, and such scenting powers as carried him at once up to the birds, with little quartering of the ground. He was equally good at backing, which he did in a style that gained him great admiration. It is recorded that he was sold by his master, Colonel Thornton, to Sir Richard Symons for a hundred and sixty pounds' worth of Champagne and Burgundy, a hogshead of claret, a valuable gun, and a pointer. The bargain was also made with a stipulation, that if any accident happened to him, he was to be returned to Colonel Thornton for 50 guineas. It appears that Dash did break his leg, which unfitted him for any purpose but that of breeding from, and likewise that the sporting colonel gladly received him back again at the stipulated sum. Pointers have been known in Great Britain somewhat before the commencement of the present century; and perhaps nothing can prove the value of this breed to the lovers of shooting more than the fact, that in that space of time pointers have been cultivated and have spread not only over all the British isles, but also over every part of the British dependencies. The pointer, it must be confessed, is neither so handsome nor so engaging in his manners as the setter, but he retains what is taught him longer and more completely, and his valuable acquired propensities are not infrequently transmitted to his progeny, so as to beget in some kennels a breed which might be called *self-broke* pointers; and thus well authenticated instances are not wanting of young pointers, of five and six months old, steadily backing their mothers of their own accord. We cannot answer for the exact age, but we saw in Northumberland a puppy, not half grown, do the same. Indeed, we are at present little aware of the capabilities of the brute mind, and of the numerous phenomena which judicious culture might elicit from these our humbler partners in sporting. From so respectable an authority as Dr. Shaw we venture to offer the following extraordinary proof of educational aptitude in the dog, and if our memory be correct, it is not the only one on record of a similar kind :—" The French academicians make mention of a dog of Germany which could call in an intelligible manner for tea, coffee, chocolate, &c. &c. The account was gained from an eye-witness, who was no less a person than the celebrated Leibnitz, who communicated it to the Royal Academy of France. This dog was of a middling size, and was the property of a peasant in Saxony. A little boy, the peasant's son, imagined that he perceived in the dog's voice an indistinct resemblance to certain words, and therefore took it into his head to teach him to speak. For this purpose he spared neither time nor pains with his pupil, who was about three years old when his learned education commenced; and at length he made such a progress in language, as to be able to articulate no less than thirty words. It appears, however, that he was somewhat of a truant, and did not very willingly exert his talents, being rather pressed into the service of literature; and it was necessary that the words should be first pronounced to him each time, which he, as it were, echoed from his preceptor. Leibnitz, however, attests that he himself heard him speak; and the French academicians add, that unless they had received the testimony of so great a man as Leibnitz, they should scarcely have dared to report the circumstance. This wonderful dog was born near Zeitz in Misnia, in Saxony."

2545. *The direct origin of the pointer* is involved in much obscurity: many writers offer their suggestions, but no one offers proof; for the fact is, the pointer is, in all probability, of a very mixed origin, and in his stock, without doubt, both hound and spaniel, at different times, have borne a part: for, it has been observed, the disposition to hunt by scent exists more or less in the majority of dogs, and it is proved not only that the act of finding animals by scenting them, but also that of pointing or setting them when so found, can be cultivated in most dogs. Indeed, the teachable qualities in many other domestic animals are such as to elicit extraordinary phenomena when their abilities are pushed either by interest, enterprise, or devotion, to the service of those around them: witness the conduct of the celebrated female pig, the property of Mr. Toomer, gamekeeper to Sir Henry Mildmay; and for the truth of the following account we can vouch, from an eye-witness of the facts: — It was certainly a mere matter of accident that occasioned the development of the peculiar scenting powers of this extraordinary animal. The aptitude of swine, generally, in finding certain palatable roots under ground was well known to Toomer; nor was it unlikely by what followed that he might have entertained an opinion, that almost any keen scenting animal could be taught both to wind game, and to stand on the point towards it, and that he was therefore led to allow a female pig to accompany his young pointers in their *breaking* lessons to the field. Be that as it may, it turned out to the surprise and gratification of the intelligent keeper, that within a fortnight from her first *entrée* "she would hunt and point partridges or rabbits; and her training being much forwarded by the abundance of both, which were near the keeper's lodge, she daily improved, and in a few weeks would retrieve birds that had run as well as the best pointer; nay, her nose was superior to any pointer they ever possessed, and no two men in England had better. They hunted her principally on the moors and heaths. Slut has stood partridges, black game, pheasants, snipes, and rabbits, in the same day, but was never known to point a hare. She was seldom taken by choice more than a mile or two from the lodge, but has frequently joined them when out with their pointers, and continued with them several hours. She has sometimes stood a jack snipe when all the pointers had passed by it: she would back the dogs when they pointed, but the dogs refused to back her until spoke to, Toomer's dogs being all trained to make a general halt when the word was given, whether any dog pointed or not, so that she has been frequently standing in the midst of a field of pointers. In consequence of the dogs being not much inclined to hunt when she was with them (for they dropped their sterns, and showed symptoms of jealousy), she did not very often accompany them, except for the novelty; or when she accidentally joined them in the forest. Her pace was mostly a trot, she was seldom known to gallop, except when called to go out shooting; she would then come home off the forest at full stretch (for she was never shut up, except to prevent her being out of the sound of the call or whistle, when a party of gentlemen had appointed to see her out the next day, and which call she obeyed as readily as a dog), and be as much elated as a dog upon being shown the gun. She always expressed great pleasure when game, either dead or alive, was placed before her. She has frequently stood a single partridge at forty yards' distance, her nose in a direct line to the bird; after standing some considerable time, she would drop like a setter, still keeping her nose in an exact line, and would continue in that position until the game moved: if it took wing, she would come up to the place, and put her nose down two or three times; but if a bird ran off, she would get up and go to the place, and draw slowly after it, and when the bird stopped she would stand it as before: nor was her love of hunting confined to partridges only, but she has *stood* black game, pheasants, snipes, and rabbits; and has been seen to do it to all these varieties in one day. A much more detailed account of this interesting animal may be seen in *Daniel's Rural Sports*, vol. iii. p. 63. We are not tempted to make so long an extract to increase our pages, but to establish a point highly interesting to the naturalist as well as to the intelligent sportsman. It is such facts as these, and the inferences we draw from them, that enlarge our views of cause and effect, and multiply our pleasures and our resources. How few among us would, fifty years ago, have thought of harnessing dogs, and as regularly employing them not only to draw loads, but also the persons of their masters, after the manner of horses. It was these observances, and a conviction that knowledge is power, and discipline the source of obedience, that enabled Van Amburgh to luxuriate in the arms of a horde of animals, matured to a love of blood and murder, but which aptitudes were so deadened by kindness, and so softened by dependence, that they appeared happy only when in company of their conqueror. It is thus that we train dogs to our purposes for hunting, and by some it is so effectually done, that the habitudes they are taught become so interwoven into the frame, if we may so express it, of body and mind, that they are afterwards voluntarily enacted by their offspring as they approach maturity. In some breeds, all the young ones, before they arrive to their full growth, and before they have had a training lesson, will stand to game; and some that show a still greater share of precocity will also back at the same age.

2546. *Crossing the pointer.* Without doubt much improvement of this breed has been derived from judicious crossings. He has gained much power of nose from his relationship, and when any otherwise valuable breed appears to retrograde in this respect, it would be well again to cross with a Spanish pointer. A cross between the pointer and the setter is generally either very good, or it is very bad; only now and then, however, it is the former, and then the produce may have the gallant bearing, scent, and endurance of the setter, with the steadiness and erect index of the pointer. Some patronise the double nosed French pointer, under a supposition that having, according to his name, two noses, he must have a double portion of olfactory power; but such opinion is erroneous, as only a slight inspection will convince the examiner, that it is only what has arisen from an accidental division of the fleshy nose, and slight part of the cartilaginous nose also, which having healed thus has been afterwards propagated in future breedings. Innumerable instances of much greater monstrosities than this have been continued in the breed of some animals, as is witnessed in the crooked legs of the ancon and dunkey sheep, in the hornless cattle, and the wry legged terrier; which, with many others, are common among us. It is to be observed that, as far as our own experience goes, the pointer and setter cross have a lurking propensity to crouch, particularly when hunting in potatoes, turnips, colewort, &c. In Ireland we used to shoot in company with a brother officer who shot to a dog of this kind, and as quails, landrails, together with partridges, &c. affect those covers much (for in many parts there the land is deeply trenched, and the crops as highly raised), it follows, that a low crouching dog is an inconvenience, although the red hue of the animal was usually conspicuous.

2547. *The Russian pointer*, as so called, is in our opinion a mongrel; and only now and then does he exhibit the qualities we seek for in a pointer. He is rough coated, grim visaged, a little dogged in disposition: nevertheless, we have seen a few, and but a few, specimens of hard workers and steady pointers at game. The pot-hunter, however, will find them convenient, for as has been said of a universal sportsman, he will hunt every thing, from the elephant of the field to the flea of the blanket. In truth, those who do not study appearances, and live in a wild country, far from the busy haunts of men, perhaps, can hardly do better than cultivate this breed, as the individuals are hardy, and many of them eager pursuers of wildfowl, and ready carriers of it. A half-pay officer that we met with in our tourisings through the northern counties, showed us one of this kind, which, by his own account and that of his neighbours also, who vouched for the same, was a wonder; for he actually more than half supported the family by his versatility of talent. He was at once a setter, a pointer, a spaniel, and water dog. He was likewise a retriever of the first order, performing in all these distinct characters with an adroitness that surprised strangers, as was apparent from some one offering 25 guineas for him; the refusal to take which, as we were told, was coupled with something like this reason, that as he (the dog) was worth so much to him, but would not be worth half so much to any other, he could not consent either to injure his dog or the purchaser.

Subsect. 3. *The Spaniel.*

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LARGE WATER AND LAND SPANIELS.

2548. *The spaniel* (*Can. fam. extrarius* Linn., *fig.* 396.) is a dog of much antiquity, and one whose breed seems to have been particularly attended to in various countries, particularly the eastern. In the Levant all game was either taken with the net or brought down by the gun; and they appear to have possessed spaniels of different varieties, but so excellent, that the greatest pains were taken to improve and increase the breeds. For its fidelity the spaniel has gained the particular notice of mankind and of crowned heads; even the chief order of Denmark (now called the order of the elephant) was instituted in memory of a spaniel named Wildbrat, who had showed attachment to the monarch when deserted by his subjects: the motto to this order was (and which still remains), "Wildbrat was faithful." A circumstance noted in the early part of the English history, and also connected with Denmark, may be added with propriety, inasmuch as it proves that one of the landings of the Danes in England was occasioned by the sagacity and affection of a spaniel. Lodebroch, of the blood royal of Denmark, and father to Humbar and Hubba, being in a boat with his hawks and his dog, was, by an unexpected storm, driven on the coast of Norfolk, where being discovered, and suspected as a spy, he was brought to Edmund, at that time king of the East Angles. Making himself known, he was treated with great hospitality by the monarch, and particularly so on account of his dexterous skill in hawking and hunting. The king's falconer grew jealous of this attention; and lest it should lessen his merit in his royal master's opinion, and so deprive him of his place, had the treachery to waylay Lodebroch and murder him, and conceal the body amongst some bushes. He was presently missed at court, and the king manifested great impatience to know what was become of him; when his dog, who had staid in the wood by the corpse of his master till famine forced him thence, came and fawned on the king, and enticed him to follow him. The body was found; and by a chain of evidence the murderer was discovered. As a just punishment, he was placed alone in Lodebroch's boat, and committed to the mercy of the sea, which bore him to the very shore the prince had quitted. The boat was recognised, and the assassin, to avoid the torture, falsely confessed that Lodebroch had been put to death by the order of Edmund; which account so exasperated the Danes, that, to revenge his murder, they invaded England. Mr. Daniel, to whom we are indebted for this anecdote, was himself very celebrated for a breed of spaniels that was almost unrivalled, and commanded enormous prices when sold. We were personally acquainted with this gentleman, and, as an enthusiastic and efficient sportsman, few if any could excel him, particularly in the practice of shooting and its various connections. The Rev. Mr. Corsellis we also knew; and as we lived in Essex within a visiting distance of each other, we can answer for his sportsmanlike qualities, and for the truth of the following anecdote recorded by Mr. Daniel; which, as it immediately relates to the amiable properties of the animal we are now treating of, cannot be considered out of place:—"The gamekeeper of Mr. Corsellis had reared a spaniel, which was his constant attendant, both by day and night: whenever old Daniel, the keeper, appeared, Dash was close beside him; and the dog was of infinite use in his nocturnal excursions. The game at that season he never regarded, although in the daytime no spaniel would find it in a better style, or in greater quantity; but at night, if a strange foot had entered any of the coverts, Dash, by a significant whine, informed his master that the enemy was abroad; and many poachers have been detected and caught from this singular intelligence. After many years' friendly connection, old Daniel was seized with a disease which terminated in a consumption and his death: whilst the slow but fatal progress of his disorder allowed him to crawl about, Dash, as usual, followed his footsteps; and when nature was still further exhausted, and he took to his bed, at the foot of it unwearily attended the faithful animal; and when he died, the dog would not quit the body, but lay upon the bed by its side. It was with difficulty he was tempted to eat any food; and although, after the burial, he was taken to the hall, and caressed with all the tenderness which so fond an attachment naturally called forth, he took every opportunity to steal back to the room in the cottage where his old master breathed his last: here he would remain for hours; from thence he daily visited his grave; and at the end of fourteen days, notwithstanding every kindness and attention shown him, he died literally broken-hearted." (*Rural Sports*, vol. iii. p. 348.)

2549. *The spaniel has been divided into more varieties than any other dog*, not even excepting the hound. For though the lapses between the gigantic staghound and the lapdog beagle are great, they cannot compare with those which interpose between the Alpine spaniel and the diminutive spaniel breeds to be met with, some of them of less than five pounds' weight. Of these latter pet breeds the supposed rarity is so great, that 30, 40, and 50 guineas have been given for one; and if we dare believe the accounts as they are rendered to us, much higher prices have been received by crack breeders for unique specimens from spaniel fanciers than those we have mentioned. The old Marquis of Granby was the owner of a very celebrated breed; and in later times the Duke of Marlborough, and his descendants, have been famed for what was known as the Blenheim breed: and the late Lady Charles Spencer, with whom we were on terms of intimacy, kept numbers of them, and was so devoted to their welfare, that, we believe, she never wore a pin in any part of her dress, fearing that it might be accidentally the means of wounding one of these favourites. They were, one and all, red and white, zealous hunters in the field, but required much trouble to break. A still more notorious variety was the black and tan spaniel of King Charles, which continued to be cultivated with such jealous care by the late Duke of Norfolk, that no interest could obtain one without a strict injunction from the owner, and almost a solemn promise from the receiver, that he or she would not breed from it in the direct line. The late Duchess of York, who honoured us with much condescending notice by sending for us frequently to Oatlands, either to consult us on the ailments of the poor around her, or on her brute favourites, of which it is well known she had a varied assemblage, afforded us a striking proof of what we have stated. On one occasion, when we were accompanying her royal highness to her menagerie, with almost a kennel of canine favourites behind her, after drawing our attention to a jet black pug pup she had just received from Germany, she remarked that she was going to show me what she considered a present of much greater rarity, which was a true spaniel of the king Charles's breed, sent to her by the Duke of Norfolk; "But," she observed, "would you believe he could be so ungallant as to write word, that he must have a positive promise, not from myself, but from the Duke of York, that I should not breed from it in the direct line?" It would almost seem that the word of ladies of high rank was not in equal estimation with that of the gentlemen of the same rank, at least that Norfolk's duke did not think it so; for it happened a very little time after, when professionally waiting on the Princess Sophia of Gloucester, her royal highness also showed us a very fine young spaniel of the Norfolk breed, which she likewise observed was only presented by the duke on an understanding, guaranteed not by herself but by her brother the Duke of Gloucester, that it should not be bred from in the Charles's line. Whatever view we take of these restrictive attempts, we may however be assured, that Nature will frustrate them; for not only is the Norfolk breed, but the Blenheim also, sufficiently common at the present time; and they ought to be, for both are great ornaments to the race, and make very many springers. We think it our duty likewise to observe, that however some ladies might not think themselves strictly bound by an agreement on such a subject, we feel assured that neither of those we have noticed on this occasion would have done other than strictly abide by the compact; and we are confident that those who were much better acquainted with them than we could possibly be, would bear us out in our assertion.

2550. *The varieties of the spaniel are numerous*, but those only immediately engaged in sporting will occupy our particular attention. A popular distinction made between them by many writers is into springers, cockers, and water spaniels. Conventionally this distinction is understood, but critically it will not bear examination, particularly as regards the two first divisions. The *Suffolk Sportsman*, whom we consider as no mean authority, heads his account of this dog as the springing spaniel, and then commences it thus: — "The cocking or gun spaniel of true perfect breed is of one general or whole colour; either black or black-tan, commonly called King Charles's breed; or red in different shades, paler or deeper," &c. &c. and concludes with "legs short, and breeches behind." Captain Brown, a very creditable authority, but in this instance taking much too confined a view of the spaniel race, says, "The true English-bred spaniel differs but little in figure from the setter, except in size, he being not so tall; but the chief difference between them consists in the former having a larger head than the latter in proportion to the bulk of his body: they vary also in a small degree in point of colour, from red, yellow, or liver-colour, and white, which seem to be the invariable standard of the breed. They are nearly two-fifths less in height and strength than the setter, their form being more delicate, their ears longer, very soft and pliable, and covered with a coat of long waving and silky hair; the nose is red or black, the latter being the surest mark of high breeding; the tail is bushy and pendulous, and is always in motion when employed in pursuit of game." (*Anecdotes of Dogs*, p. 254.) It is evident Captain Brown here thought only of the large sporting spaniel. Both springers and cockers are used in greyhound coursing, and the excellent scenting qualities of each usually enables them to find every hare within their beat. Here the cocker is more useful than the springer, for he hunts closer, and often whimpers before he opens, which awakens attention; the large springer, on the contrary, by his ardour and bustle alarms a distant hare, who steals away unseen. The yaffing of the little one she often does not mind until it is almost upon her. Of all the dogs reared, no one is more varied in figure and qualities than the spaniel, nor is any dog so universally in request as this. We have computed that five thousand are kept as parlour pets in London alone. Taking the breed throughout, there is more ability displayed, more energy of character apparent, and more genuine attachment shown, in this race to man, than is to be found in any other whatever. When we say this, we include the whole family of spaniels generally, from the Alpine monster to the diminutive darling of my Lady *****, bought of a Spittalfields weaver at the low price of 25 guineas. Regard the poodle, — where shall we find a match for his intelligence, and where his equal in fervent attachment? We have elsewhere shown him acting the part of a footman with singular adroitness; but we must return to the cocker, equally faithful, and but little less intelligent.

2551. *The cocker*, so called from his appropriation to woodcock shooting, has a short round head when compared with that of the springer; he is also much smaller in size, more compact in his frame, and not high on his legs. His ears are usually long and well feathered, as are also his legs and tail: his hair likewise, generally, is more waved and curled than that of the springer spaniel. The cocker of the present day (*fig.* 397.) is very diversified in his colour, occasionally he is an entire black, and then he is, indeed, a beautiful animal. The late Lord Rivers was celebrated for a breed of black and white cockers, and one we received as a present from him turned out to be most excellent in the field, and was shot to by us with less breaking than any other we ever remember, which tractability we attributed to the circumstance of his living under our immediate eye as a parlour pet. This was the dog elsewhere noticed, when treating on the general subject of dog breeding (p. 412.), that occasioned a pug bitch, by the mere force of imagination and fondness for this spaniel, to conceive and bring forth one milk-white true pug pup out of a litter of six.

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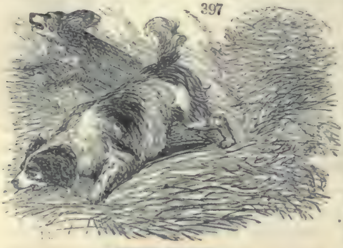

COCKER SPANIEL.

2552. *The breaking of the spaniel* exemplifies the force of education and discipline among the most mercurial of the canine race. The extreme alertness with which the cocker hunts out and flushes woodcocks, &c. though he will not touch their flesh or bones when set before him as food, are proofs of his instinctive fondness for hunting for his own amusement, as his after conduct, when broken in, proves how subservient he is to the interest and amusement of his master. Nor are his general teachable qualities to be overlooked; he has, on the contrary, been educated to a surprising degree of ingenuity in point of general action, and particularly in his methods of circumventing the wiles of his prey. The observant and humane sportsman cannot forget, or do other than admire, his many interesting and winning ways, and particularly his thorough devotion to his employer's purposes in the pursuit of game, which is such, that, having made his capture, many of his tribe bring it to the hand of the master: indeed, no spaniel can be considered as thoroughly trained that does not do this. In breaking this dog, we again repeat, that it is prudent to commence the process from his very puppyhood, and the process would be better and more easily effected were he never away from his master's presence. Every one who knows the dog is aware that, from his teachable qualities, he may be taught to fetch from and carry to a distance whatever is required. He will fondle the kitten of the petted cat, because he sees his master do it; and he may possibly give a sly gripe to the one he meets in the barn, because he sees it is not noticed; which act, although we cannot commend it, yet is a great proof of his intelligence. He should, when intended for sporting uses, be taken out very early to the field, as at four or five months old, when he ought to be allowed to race about and hunt every thing that moves; and the signal for breaking should not be made until he has evinced a predilection in choosing the objects. As soon as he begins to hunt fowls, in preference to other living objects, as rats, &c. immediately commence his training lessons, the first of which is, that now he is to chase at your command only, and that the animals he hunts should be such as you will habituate him to, and not those he might choose for himself. Having been thoroughly initiated in this subserviency to your sporting pursuits, he is next to be taught to "fetch and carry;" and that, in doing this, he shall not tear or spoil his game, or whatever he may have in his mouth. We remember to have seen an admirable instance of this care and attention to the nature of the object carried. Sitting with a friend in his drawing-room, which overlooked a small lawn, we were amused with the gambols of a favourite spaniel, which we saw employing himself in tearing into shreds a kitchen cloth. Within twenty minutes from the time when this scene was enacted, the same spaniel came bouncing into the drawing-room with his mistress's cambric pocket-handkerchief in his mouth, neither moistened with saliva, nor marked with his teeth, for, as somewhat of an enthusiast in our admiration of the qualities of the dog, we carefully examined the handkerchief, having already given it as our opinion (but which was only tacitly assented to), that not a tooth-hole would be found; and such was the case.

2553. *The water spaniel* (*Canis Aquaticus* Linn.). This dog may be represented as a sturdy spaniel with crisped hair, taller or more low in stature, according to the nature of his work. If the sportsman shoots on the banks of rivers, moors, or lakes, his dog should be of the size and strength of the poodle. Some, indeed, shoot to the poodle; and now and then one is found excellent: but they are not often so fond of the sport of hunting out the retreat of waterfowl as the true water spaniel; for they have, generally speaking, less mettle and less endurance. The water spaniel should be very stout, strong, courageous, and semi-aquatic, particularly if it is to be used for wildfowl shooting on the sea-coast, or on lakes, or large rivers. Markham's description of the water dogge, as he calls this spaniel, shows that in this early time it had long been used; and his training instructions are so excellent, and so applicable to every dog that is to be broken to the gun, that we shall transcribe them. He commences with, "The water dogge is a creature of such general vse, and so frequent in vse amongst vs heere in England, that it is needlesse to make any large description of him; the rather since not any amongst vs is so simple that he cannot say when he seeth him, This is a water dogge, or a dogge bred for the water; yet, because in this (as in other creatures) there are other characters and formes which pretend more excellencie, and figure a greater height of vertue then others doe, I will heere describe as neere as I can the best proportion of a perfect water dogge. First, for the colour of the best water dogge, all bee it some (which are curious in all things) will ascribe more excellencie to one colour then to another, as the blacke to be the best and hardest, the lyuer-hued swiftest in swimming, and the pyed or spotted dogge quickest of scent; yet in truth it is nothinge so, for all colours are alike, and so a dogge of any of the former colours may bee excellent good dogges, and of any may bee most notable curres, according to their first ordering and trayning; for instruction is the liquor wherewith they are seasoned, and if they bee well handled at first, they will euer smell of that discresion; and if they bee ill handled, they will euer stinke of that folly; for nature is a true mistresse, and bestowes her giufts freely, and it is onely nature which abuseth them." From this Markham proceeds to describe the proportions, shape, and covering of what he calls the water dogge, and then offers, after the fashion of those times, a rude but not bad representation of a poodle shorn; and which shearing, according to his description, may be performed in two ways. But we will not neutralise his own amusing and interesting account by our own notices, but allow him to speak for himself. "Now, for the cutting or shearing him from the nauill downeward, or backeward, it is two wayes well to bee allowed of, that is, for sommer hunting, or for wager; because these water dogges naturally are euer most laden with haire on the hinder parts, nature as it were labouring to defend that part most, which is continually to bee employed in the most extremity; and because the hinder parts are euer deeper in the water then the fore parts, therefore nature hath given them the greatest armour of haire to defend the wette and coldnesse; yet this defence in the sommer time by the violence of the heate of the sunne and the greatnesse of the dogge's labour is very noysome and troublesome, and not onely maketh him sooner to faint and give over his sporte, but also makes him, by his overheating, more subject to take the maungie. And so likewise in matter of wager, it is a very heavy burthen to the dogge, and makes him to swimme lesse nimbly and slower, besides the former offences before recited: but for the cutting or shaving of a dogge all quite ouer, even from the foote to the nostrill, that I utterly dislike; for it not onely takes from him the generall benifits which nature hath lent him, but also brings such a tendernesse and chilnesse ouer all his body, that the water in the ende will grow yrksome unto him." (P. 70.)

2554. *The manner of training the water spaniel* is so ably discoursed on by Markham, that we think it well worthy the attention of every dog breaker and dog breeder of the present day: — "Now, for the manner of trayning or bringing up of his water dogge, it is to be vnderstood that you cannot beginne too early with him; that is to say, euen when you first weane him, and teache him to lappe, for euen then you shall beginne to teache him to coutch and lye close, not daring to stirre or moue from that posture in which you put it, without your especiall license, cherrishing it euer when it doth your wille, and correcting it when it doth the contrary; and alwayes obseruing this maxime in the first teaching of him, that you neuer let your dogge eate or taste any meate, but when hee doth something to deserue it, that custom may make it know foode is a thing which cometh not by chance, or the bounty of your hand, but for reward or merrit when hee doth your commandment, and this will not onely make him willinge to learne, but apt to remember and retayne what hee learneth, and diligently to performe your pleasure without sticke or amazement, the carracters of your commands being so deeply imprinted in his knowledge: and to this end you must haue no more teachers, no more feeders, cherrishers, or correcters but one, — for multiplicity breeds confusion, and to teache diuers wayes is to teache no waye well: also you must be very constant to the words of directions by which you teache, chusing such as are the most syngnifficant for your purpose, and fittest for the action you would haue the dogge doe, and by no meanes alter that word which you first vse. When, therefore, you haue made your whelpe vnderstand these seuerall soundes or wordes, and that he will coutche and lye downe at your feete, how you please, when you please, and as long as you please, and that with a single worde, or a looke onely, you shall then proceede and teach him to leade in a line and collar, following you at your heeles in decent and comely order, nether treading vpon your heeles, or going before or side by you, which shewes too much haste, nor hanging backe or strayning your line by the meanes of too much sloathe, but following in decent and orderly manner without offence either to the dogge or his leader, and this kind of leading is to make the whelpe familiar with you, that he may loue and acknowledge you and no man else. When this generall obedience is taught (which is done by obseruation of his going, and moueing him by sights or sports which may tempt him to stay beyonde his boundes, and then to correct his offences, and to cherrish and reward his obedience), you shall then teach him to fetch and carry any thing you shall throw forth of your hand." (P. 173.) Our ancient adds much other practical matter on the subject, particularly we would recommend him for his humanity, proved by his advocating the necessity, that his readers should, with their words of reprehension when necessary, "also join encouragement," humanely remarking, that "correction may better be spared than cherrishings." Listen to this, you hired breakers! Markham lays much stress likewise on leading the dog with a line, making him handy at fetching and carrying, and, when returning on his track, that he search for any thing left behind. In short, he is to be taught not only to do your bidding in every thing, but also to appear to divine your wants ere they are expressed, and which is actually done by very intelligent dogs, as thus: — You are out for certain sporting purposes, as shooting of wildfowl for instance; a teal rises, you fire, and the bird escapes at the time, but not without a certain conviction remaining in your mind that you have hit it. Your dog follows the track at your showing, but at length returns without it: still you are convinced, to a certain degree, that his escape is not complete. You hesitate, and half turn towards the spot from whence you so lately came, after a fruitless search; your dog watches all this, and assures himself of your meaning. You turn, it is true, towards the spot; but incertitude prevents you going but a few steps towards it. Your dog looks wistfully in your face, and without any manner of doubt he divines your meaning, but will not stir without a signal. You waive your hand, with "Lost, good Sancho!" he instantly flies back, again he swims the stream, again he searches the rushes still further a-field than he ventured before. Certain both of the intelligence and the fidelity of his dog, the weary sportsman sits him down on a bank, and in twenty minutes, after a long search and many a dive and swim, Sancho is seen returning with the bird judiciously pinched to prevent any chance of escape, but with hardly a feather rumpled. This is not a fancy tale, but has been enacted in our sight; and 10 guineas had more than once been refused by the owner, who was an officer in the Artillery, for this accomplished dog.

2555. *The Newfoundland dog* is a spaniel much employed on the southern coasts of our kingdom; and there appear to be two distinct breeds of them, one from Labrador, and another from St. John's. The Labrador dog is very large, rough haired, and carries his tail high. On his native spot, he is exceedingly useful by his immense strength in drawing sledges, &c. The St. John's breed is that to be preferred by the sportsman on every account, being smaller, more easily managed, and sagacious in the extreme. His scenting powers also are great. Some years ago these dogs could be readily procured at Poole, and, when well broken in, were very valuable; indeed, some gentlemen who purchased them have found them so intelligent, so faithful, and so capable of general instruction, that they have given up most other sporting varieties, and contented themselves with these; and, as we are told, found the places of the others perfectly well filled up. This circumstance, however, we should observe, occurred in fenny and aquatic districts principally. A genuine Newfoundland dog of the true water-loving sort, and addicted, body and mind, to hunting wildfowl, is most valuable. We once knew such an one, the property of a gentleman of our acquaintance, who resided at Newhaven. We ourselves lived at that time at Seaford, but we visited Newhaven very frequently, and sometimes went along the sea wall, and in so doing we often fell in with this admirable zealot. Whenever it was likely that wildfowl would come in shore, and that consequently gunners would go along the levels to intercept them, then she was sure to be found, waiting for and attending on them as long as they staid, fetching either out of the sea or the river, spite of ice or snow, any that were shot. She had been known to stay two entire days and nights, and, as was supposed, without food, waiting at the shore-side to assist any shooting parties that might go out; for at the time we allude to an intense frost of two or three weeks had frozen up every river and spring. Hers was indeed self-devotion, and she truly had a sporting mania. Many had offered to purchase her, and many more had attempted to steal her; but her master, although he shot little himself, was proud of his dog, and would not be bribed by money; and no force, no artifice, could draw her farther from her home, than her knowledge of the locality, and her distance from Newhaven were known to her. Colonel Hawker also writes very interestingly, and very justly, on the properties of the Newfoundland dog, which he says are such, that he may be broken into any kind of shooting. The one we have just noticed, we would have almost wagered our existence, would, after a fortnight's tutorage, have hunted partridges, pointed them steadily, and would then have waited the bidding to fetch the dropped bird. As a retriever the Newfoundland dog is easily brought to do almost any thing that is required of him, and he is so tractable likewise, that, with the least possible trouble, he may be safely taken among pointers to the field, with whose province he will not interfere, but will be overjoyed to be allowed to look up the wounded game, which he will do with a perseverance that no speed and no distance can slacken, nor any hedge-row baulk. In cover he is very useful: some indeed shoot woodcocks to a Newfoundlander; and he never shines more than when he is returning with a woodcock, pheasant, or hare, in his mouth, which he yields up, or even puts into your hand unmutilated.

Subsect. 4. *The Retriever.*

2556. *The retriever* (*fig.* 398.) is rather an indefinite dog, *i. e.* he owns no fixed parentage, but may be generated by any congenial varieties, as the spaniel and Newfoundlander, the spaniel and poodle, &c. One parent, at least, should be stiffly coated, tough skinned, and moderately high on the leg; and it is also essential that both parents be very hardy, of excellent scent, and zealots in the pursuit of game. It is of the first consequence that the retriever be under such command, as never to stir in pursuit of any game until a signal is made for him to start. He should be a very Proteus, and able to enact, on occasion, the part of each of the dogs of the group we have been describing. Neither is it so difficult, as may be supposed, to accomplish all this (if you work on a good stock) so to break, and so to tutor a dog of mixed breed, that he shall make a moderate pointer, a still better setter, and a handy hunter in cover in the pursuit of wounded game. One look of your eye, and one motion of your hand, should convert him into a springer amidst the tanglings of the wood and briars, or send him headlong into the water to recover a fowl. He should be a very Janus, a complete Argus, and gifted with the talent of ubiquity, so that he may be here, there, and every where, and yet never out of place. We have seen such a Proteus; but he belonged to a sportsman of unusual tact, and such a dog breaker as we never before saw; and yet he prided himself on very seldom using a whip; indeed his dogs, one and all without an exception, appeared to worship him as it were; such was the zeal of each to do his master's bidding. This gentleman recommended that where the locality principally consisted of inclosed grounds and stiff covers, the retriever employed should be a cross breed, between a setter and Newfoundlander. We have also known a cross between the pointer and Newfoundlander, for generating a retriever, to be recommended; but although a thoroughly good pointer is invaluable, yet, in the way of a cross, his progeny, as far as our experience goes, is not often of great value. The vulgarism, that "it is not one swallow that makes a summer," applies here; for it is possible that such a mixture may have turned out well, but we never heard of one. Mr. Gilbert Forrester informs us, that he has known some good shots who have bred their retrievers from a cross of the spaniel and old southern blue mottled hound; but he does not approve of the mixture, and we should have been surprised if so excellent a sportsman had done so. Indeed, we should have anticipated the result which he says took place, that the cross partook too much of the one breed or the other; and therefore he has known, in localities where game was plentiful, that one so bred, when footing a wounded hare through a wood, has changed his chase to a fresh hare which started before him, opening as he went for half an hour ere he returned, and thus depriving his master both of the wounded and the unwounded hare: if, on the contrary, too much of the spaniel blood prevails, away he springs and at an immense rate, yelping as he goes, to the springing of every covey, and the pushing of every pheasant in his road.

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THE RETRIEVER.

2557. *Of the importance of the retriever* we need not say much, as the subject speaks for itself. The thorough sportsman is not content without dogs adapted to each variety of sporting, nor is he happy unless each variety is confined to his own particular chase. We knew one of this stamp, who, when ranging with his pointers in advance, was always followed by a retriever of very rare qualities. His pointers, also, did their duty to admiration, and when they came to a steady point, bang from each barrel followed, and two birds usually fell; the pointers remained on the spot motionless witnesses. A move of the sportman's hand, and a Hie away! to the retriever, sent him off like lightning, and he returned with both birds. The ability of this dog was such, that when two birds fell he would hold one by the neck, and the other by the wing near to the body; by which device neither bird would be injured, nor himself encumbered. In pheasant shooting, likewise, the excellent discipline of this dog, and his extraordinary tact, were the delight of all who saw his performances. What was in him most to be admired, was the perfection of his training. In ordinary cases he appeared a totally indifferent spectator at the heels of his master, although, when necessary, he could enact equally well the parts of pointer, setter, or spaniel, and he wanted a signal only to do so. His setters and his spaniels, like his pointers, were well bred, and thoroughly well broken, particularly his setters; for we need not hint to the well practised sportsman, that, let his spaniels be as well bred as they may, and that they also have had every advantage of discipline under such a breaker, yet there is such a natural impatience in these dogs, such fire and mettle, when on the pursuit of game, that they will hunt out of bounds, or, scorning restraint, will fly to the dropped pheasant, and, if any life remains, will mouth and probably mangle him. The retriever we have noticed, aware of this, the moment the master's signal was given to him, and his call to the spaniels "Ware bird!" flew up, and commonly returned with the pheasant in excellent preservation. It is not the mere bringing the birds to bag that will suffice the talented sportsman. The pig killer, who has cut the throats of fifty pigs within the last hour, or the butcher's feller, who has brought to the ground his dozens of noble oxen before dinner, may boast of his bloody deeds: but his boast is but the measure of his brutal employ; and when the sportsman is heard to boast how the feathers flew in the air, and how the birds were knocked down, right and left, we are apt to think that he also has sunk the gentleman, and apes the pig killer and ox feller. It is the creed of the reflecting sportsman, that Nature's boundless stores being open before him, and that, being by his superior intelligence apprised that he is unquestionably placed over them, it follows, that he proceeds with his fellows in making such use as shall bring the waste and the supply to an equality; and that, so doing, he fulfils the purpose of his existence. By pursuing game he prevents its destructive increase, and by doing it in moderation only, he neither commits a robbery on society by destroying them wholly, nor deprives others of a share in the sports he enjoys himself.

Subsect. 5. *Breeding, Breaking, and Training Spaniels, Setters, and Pointers.*

2558. *The breeding and rearing of these dogs*, as a subject, will not detain us long here, as all necessary instructions are included in the breeding and rearing of hounds and greyhounds, p. 411. 572. The setter is a dog of much beauty and commanding mien: divested of his wavy curling coat, he would not differ very materially in figure from a well bred pointer. One distinguishing feature which he presents is his fine head, open countenance, and broad flowing ears; his loins, however, are not so broad as those of the pointer, and this probably gives him more liberty of action, without detracting from his strength, which is not only great under momentary exertion, but is lasting also, as we witness by his unceasing exertions on the moors. Mr. Elwes, a name of great notoriety where sporting dogs were concerned, used to let his setters follow his carriage from his house to London; and although the distance was sixty miles, they usually hunted all the road-side fields in their journey. Setters are now seen of all the colours shown by our spaniels, and though fancy has attributed much to one particular tint, or one particular marking, experience has not put its stamp thereon, but verified the old adage, "that a good dog, like a good horse, cannot be of a bad colour."

2559. *The breeding and rearing of the pointer*, also, may be referred to the same source we have already named. As regards both these dogs, the utmost attention should be paid to the purity of breed in the parents, and likewise to their field qualifications, which commonly descend with the progeny; and hence it is so common to say, whatever you do, breed from a "good strain," and by so doing you are almost sure of a good result. The colour of the pointer, *à priori*, would seem to be of little consequence to himself or to his qualities; but, as we have already shown, the colour in both these dogs is, nevertheless, of some import in the field. In very close cover a white pointer runs little danger of being shot, nor a white setter in the thickest ling; but in both situations black and liver colours, as hiding their figures, might endanger them. The pointer should present a round well marked head, neither small nor large. His face should be open, his nostrils large, and his eyes full; his ears should be thin, and of a due length, but they should in every case hang close to his head; for if they fold back, we should suspect the get. His chest should be deep, his shoulders fine, and surmounted by a neck of sufficient length. Mark well his legs: the fore arm should be muscular, and run straight down to his fore feet, which should be well clawed, and in figure round and compact, and if of a dark hue so much the better for their wear. His coat we would have very fine, but we would dispense with that fineness of loin in the pointer which we should esteem a beauty in a setter or greyhound, for muscular fulness of loin in the high bred pointer is desirable. The thighs should be full, without being coarse, and they should be surmounted by a fine taper stern, from which, when the young ones are a few weeks old, an inch may be taken off, proportionate with the relative length of the body and the taste of the owner. A very long tail in a pointer is not convenient, for in close cover it gets torn, thence bloody, and afterwards sore and mangy; nor is a short one sightly. In taking off the end of the tail many sportsmen draw out the tendinous portions which present themselves with a pair of pliers, by which the tail is supposed to be carried higher; but remember that, to produce this effect, it is necessary to extract the lower tendinous filaments, and not the upper. A full sized breed of pointers will bear to be sterned two inches; a small breed will bear the loss of one inch and a half. Watch the growing dog: see that his coat remains clean: if the hair falls, and he scratches much, dress him with brimstone, and somewhat lower his diet. Instead of flesh feeding, give him buttermilk and boiled potatoes. Let his exercise and his feeding correspond, and commence his field education early, by which you will be spared the trouble of unlearning him.

2560. *In the breaking and training these different dogs* (*fig.* 399.), there is so much similarity of method, that we shall commence by including the whole group as subjects to be disciplined in essentials on one system. What variations do occur in the training processes necessary to be observed towards them individually, either as regards the particular mode of hunting common to each kind of dog, or required by the nature of the game they are to hunt, either have been, or will be, duly noted. There are however, we repeat, lessons in dog training which concern them all individually and generally; one and all should be taught perfect and unconditional obedience, which is more likely to be insured where they have been bred by the owner himself, and from a strain of acknowledged excellence, known to have been long kept up, pure and unmixed, under the watchful eye of the master, aided by the cooperation of some faithful and intelligent kennel attendant. Having been thus bred, and their affections being fully engaged by their master particularly, and by the subordinates generally, the foundation of their excellence is already laid. No service is so well performed, no lesson is so deeply impressed on the mind, as is that taught by those who have engaged our affections. In dogs this is every day witnessed, and, in almost every one, kind words and encouraging treatment will win to the purpose required. It may be asked, Are they never to be corrected? By no means give up correction where enticement has failed. Let a great fault be corrected on the spot; and, if practicable, by an attendant rather than the master. Let it be severe as regards the pain it gives, but let it not be of a kind likely to injure the animal. A supple switch, or thonged whip, may be used; but kicks, or hedge-stakes broken over a dog, should never be allowed. We again repeat, that the devotion towards the purposes of the master, and the superexcellence in the manner of fulfilling them which marks some dogs, is usually the result of personal attention paid to them and their wants. We will not suppose that such a master actually feeds them himself; but we can readily imagine that he is always present at their principal meals, and that the dogs observe that he takes a prominent part in the affair. He orders Ponto, who he says looks thin, a second mess; and we know that the sagacity of the dog is such as to readily distinguish the addition as a boon bestowed by the master, and which is therefore appreciated, accordingly, with gratitude and willing attention to his biddings. Sancho, on the contrary, he orders away with half a meal, for snapping at a half-grown puppy; and he retires cowed and self-convicted.

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BREAKING AND TRAINING.

2561. *The breeding of sporting dogs under our own eye*, particularly those for shooting purposes, gives us an eminent advantage over dogs bred by others, which, though bought at a long price, may have a stain in the get that will wholly frustrate our hopes. When we breed from our own stock, or from one every member of which we well know, we then insure the purity of the strain we raise; and, by an early acquaintance with them, we rivet the confidence of each, and receive their willing services in return for our notices. The subject of dog breeding to the zealous sportsman must of necessity be a very important one, for the dog to him is an article of necessity as well as of luxury. Of the breeding and rearing of dogs generally, we have, as before observed, already treated fully, together with kennelling and dieting them, both in our treatise on *Fox Hunting*, p. 411. and that of *Coursing*, p. 572. to which we would refer for all necessary particulars on those heads.

2562. *The methods of dog breaking are*, with very little variation, the same at the present day as they were in the days of Markham, who notices them as not new even in his time; for he calls his *Hunger's Prevention*, published in 1621, a "Worke long by me thought vpon, and ong by many of my dearest friends vrged vpon," &c. &c. Indeed, there are recorded prac-ices of the olden sportsmen, almost a century antecedent to this, to be met with, both in foreign libraries and, if we mistake not, in that also appended to the British Museum. We herefore certainly have no lack of instructions on this subject, so important to the lovers of the trigger. Those interesting monthly publications, the *Sporting Magazines, Old* and *New*, contain very many excellent articles on dog breeding and training. Other of our sporting tomes notice the subject, and yield us a wrinkle; and thus, if we do not find much novelty, we have at least the same instructions doubly stamped on our memories, and they are consequently less liable to be rubbed out. At all events, those among us who cannot add to the general stock, can at least pull to pieces our antecedents: it is thus that we find the *Treatise on Dog Breaking*, by Floyd, gamekeeper to Sir John Sebright, sadly mauled by some critics. We had read the pamphlet with much pleasure; and, if it did not meet our unqualified approbation, we nevertheless thought it practically good, and a very safe guide. Sir John Sebright's knowledge of animals is fully proved by his writings, which, if not large in bulk, are comprehensive and pithy in matter. It is not to be supposed that Floyd would publish his notions on dog breaking, whatever reputation he may have for it, without his master's revision and approbation; and we feel confident, if it had his sanction, it could not have been very faulty. We need not inform the reading as well as practical sportsman, there are other directions on the subject also worthy of attention. One purporting to be by W. Dobson, Esq. of Eden Hall, Cumberland, and another, known as the *Suffolk Sportsman*, by the Rev. B. Symonds of Kelsale, Suffolk; from both of which amusement as well as instruction may be reaped. Nor are these all that offer instructive notices on the subject. Colonel Hawker is an authority of much respectability, and his work on *Shooting* is certainly the first of its class; but dog breeding and dog breaking, although it occupies less of his attention than almost any other subject he treats of, he nevertheless glances at. Talk to him of punts, stanchion guns, and poodle dogs, and he opens a mine many fathoms deep; but he does not condescend to enlighten us so much on *field sporting* generally as we could wish, although we have heard him praised as a dead shot at partridges. That indefatigable sporting scribe, Mr. T. B. Johnson, gives also, in his *Shooter's Annual Present*, a very useful if not an original account of sporting dogs and dog breaking. Of our own experience we will say little; but our known attachment to dogs and to sporting pursuits will, as we hope, give the opinions that we do offer on the subject of training and breaking some little weight, and allow us to challenge a candid examination of them. We are inclined to think, that in the process of dog breaking we rather retrograde than advance; and we form such opinion by comparing the training instructions of our times with those handed to us by writers of two or three centuries back. Those given in our day are seldom sufficiently full and methodical; neither, as we suspect, are our dogs so docile, so well trained, or so efficient, as those we read of in former times appear to have been. We would appeal to the early writers, and particularly to Markham, as one of the very best among them, whether we are right. Our reputed breakers are most of them too sparing of their trouble, and too anxious to get the job over, that another may be begun upon. Hence it is, that one dog broken in by the master, if he be really well informed on the subject, may have more game killed to him than to two of the half broken of modern hired trainers. Be it observed, we do not say there are no exceptions among breakers to our statement: we know there are, but it will require a pretty extended acquaintance to find them. What is to be done? If you buy when the season approaches, you have little choice—the best are taken off: nor are you probably allowed sufficient time to try them fully, and by yourself; and, without this, your chances are indifferent. Granted that you do meet with a handy dog, even then it is probable that he has been broken to methods different from your own. He does not acknowledge the same dog language as you use, and both dog and master must retrain before game is killed. But if you are absolutely reduced to the necessity of buying a dog or dogs, insist on a full trial of him or them—first, with the owner, be he keeper or otherwise; then, let the dog or dogs be left with you for two or three days at least, during which time watch them well, and attentively examine their methods of hunting, and whether they suit with your own views; for we need not state that very good sportsmen require very different qualifications in their dogs. One would have his pointer crouch like a setter, and another we knew, that the moment he dropped his bird by a shot expected him (the pointer) to come into his heels, while his retriever was dispatched for the bird; and, strange to say, the pointer was no less staunch; but he was trained to heel.

2563. *The breaking of the setter presents*, among the true setter fanciers, some slight shades of variation from that of the pointer. The *Suffolk Sportsman*, a true setter fancier, among much other instructive and interesting matter on *dog breaking*, after noticing ranging of setters on the chain for a determinate time, writes, "Now, lead him out, and keep him close to your foot; if he attempts eagerly to get on beyond the rate of your own walk, pulling so as to fatigue the arm, give him three or four snatches with all your force, but speak to him at the same time in sounds of friendship,— Rover, *come back! Come in then! Come*, good lad! Now stop, and reward him; then walk on and do as before. Such treatment will soon break him of these strivings, and be a good foundation for forwarder lessons. When the chain has brought him to a proper habit in walking near your side, the next day let him loose with his collar on; and after having emptied himself, and gambolled a ring or two, call him in gently and mildly; take him into some highway, the more sandy the better, as not retaining any scents. If he shows a desire of inquiry at gate, stile, &c. by no means suffer it, but call immediately to order; and, upon compliance, give him his reward. A tin canister is the properest vehicle, which should be stored with pudding or liver boiled hard, and cut into bricks. Neither of these will give offence to the pocket or hand, as cheese will. Bread has not moisture enough, if well baked; and if it is slack and doughy, it sticks to the fingers in delivery. Never toss it to him, but give it into his lips, and make him take it as tenderly as may be. Though we may walk out with a brace together in this manner, it is by no means allowable to hunt them so. As the setter runs *solus*, he should never be put in company, under the notion of getting courage from his fellow; for the English spaniel has fire enough without a prompter, and always ranges freely from the very first. In an inclosed country, where the boundaries do not include more than six or eight acres, an active strong young fellow may by hard labour keep a dog to his work; but in the *fieldings*, the very attempt would stamp him to me an ignoramus. In the champaign, where the setter has room to display himself, a footman must contract his beat, or cannot be near enough to see and be certain in distinguishing between a real fault and a misfortune. Upon this rock many a poor John has split, and numbers of dogs been ruined. To cramp a high ranger in his career is cutting off his finest blossom, and leaving him only the bare name, without the power of action to support and dignify it. As it is the indispensable duty of every breaker to attend closely and calmly to every motion of his pupil, a horse is evidently necessary, to fit him for the task, which also must be qualified for his work, — *free*, and yet steady; fly at the touch of the heel, and stop at the word of command or drop of the rein; and, when quitted, never to go far from the place. This is not an ideal nag: I have such an one at this time; and they are in the studs of every sportsman of consequence or taste, I dare say. These are the most material requisites, because we should always be at hand at the commission of a fault, that we may challenge the dog with it that very instant to his face. Thus provided with a horse, and having reconciled the young dog to obey the terms of reclaim without fear, take him into the field, choosing an afternoon rather than a morning, that he may not be diverted from his proper game by catching upon hares or rabbits that have made late work. Let it be more especially remarked, that he should be hunted with a muzzle, until the danger of sheep chasing is over. It may be made large enough for free respiration, and yet not give liberty of break, so as to get blood, should be by chance run one down before he could be beaten off. Little regard is to be paid to his behaviour, as to forming any judgment, for three or four times going out, though some will cry up a dog at first sight as a most amazing galloper, not discerning between hunting and running. Again; a dog must be expected to *find* before he can be said to *hunt;* and until he shows a preference to a particular feather, and sticks to it, it is absurd to check him. I would always reward and encourage a young dog for chasing his proper game; which is indeed the only method to fix him from the trifling amusement of larks and small birds. It is not to be supposed that no kind of language has as yet been made use of, but free indulgence given to those freaks. As soon as his attachment is confirmed to the proper object, it is time to begin to enforce it. Here lad! Ware chase! and if voice is not sufficient, add a smack or two of the whip, which will do the business. Upon his return drop or secrete the whip, and call in mildly, Here lad! Come in then! Ware chase! Good boy! and a bit of pudding. Never suffer him to get back to the haunt, but quit the spot immediately, to beat on fresh ground. A few rebukes in this way, with civility after, will settle this point." (P. 71—79.) We do not remember any notice of the *Suffolk Sportsman* with regard to the killed bird being directly brought to hand, either by the setter or pointer; by which we may suppose he did not think it a necessary qualification. We know that it is not every sportsman who approves of the fallen bird being immediately fetched for these reasons: when a dog knows he is to fetch the bird as soon as it falls, he is apt at once to break away after it. If he be *solus*, it may be very well; and if the master's training has been so strict that only one dog will offer to move from the two or three dogs present, then also it is well; but even then it ought not to be allowed until the gun is recharged: one dog, or the dog, may then be "hied away" to "seek bird." We state "the one dog," as it is certainly not necessary that more than one should be broken to this art; for, if there be more that do it, the thirst for competition will occasion more than one to hie off, and probably each will return with half of the bird, or the disappointed dog will "seek out" for what he may find, and do mischief this way. We, however, have received so much pleasure in sending the well broken dog on this errand, that we would rather risk all the chances of mishap, and there certainly are some, than deprive ourselves of this satisfaction.

2564. *The pointer is usually less difficult to break than the setter;* he also is commonly expected to *stand*, to indicate the presence of the birds he winds or scents. The setter's instinctive disposition is to crouch rather than stand; but it is not always that he crouches, for some setters stand steadily to the point. The pointer is unquestionably the most popular dog at the present time; and, for the usual purposes of English gunners, generally is the best adapted. Altogether he is more easily steadied than the setter; he suffers less from heat, his coat being shorter and thinner; and, when once well broken in, he seldom loses his training, which we cannot say of the setter. No dogs can bear thirst without great prostration of strength, but the setter suffers even more than the pointer, his fine waving coat encouraging more insensible perspiration to fly off than the short smooth coat of the pointer. But, on the other hand, the pointer's feet are certainly not so hard and firm as those of the setter, for he has not the spaniel toe tufts that protect each ball pad; and the hard wiry ling branches certainly gall the feet of the high-bred pointer so much, that in most cases one hard day on the moors unfits him for hunting the next. As regards the superiority of scenting powers between these dogs for grouse shooting, we will defer what we have to say on it until we treat on the practice of grousing. With the contrasted qualities of these two varieties, it becomes almost a natural inquiry whether, by a union of the two, we might not get a most valuable cross? It has been tried, and sufficiently often, to enable us to state that it has now and then succeeded in producing an excellent variety, having the valuable properties of both: but such instances are too few to bring this breeding into general favour; nor from our own experience can we recommend it. The few that we have seen were hot-headed; and, if moderately steady one day, would, the next, do every thing but what ought to be done. A rather ludicrous instance of this fell under our notice: — A gentleman farmer, who possessed an excellent manor farm, which he cultivated himself, purchased a young dog of this mixed breed from a very reputed breeder and breaker, after having seen his performances, which it really appeared were very creditable to both dog and breaker. The dog was taken home, carefully housed and nurtured; but the harvest being not completed, even the new dog and the love of shooting could not take him (the farmer) from his reapers; consequently the young dog, well fed, caressed, and under no restraint, forgot, in a great measure, the keeper's tuition. His master, however, had not forgot the splendid trials of him he had witnessed previous to his purchase of him; and fondly, but foolishly, expected that the animal would naturally act as before. Elated by this supposition, and not a little proud of his dog, he wagered a rump and dozen with some older shots than himself, that he would bring into the field *a mixed-bred dog* that should find, stand, and back, in a style superior to that of any unmixed dog or dogs that could be brought against him. The bet was accepted, and we were included in the invitation to see the trial, and were also requested to act as one of the umpires, and a more miserable display no noted dog ever made than did the farmer's fancied trump. It was not that he could not do much of what had been said of him; on the contrary, he gave many proofs that he could, if he would, do much towards trimming the rump and dozen of his master's opponents; but obstinacy and wantonness had taken such hold on him, that the first hour decided the bet, and the dog was withdrawn from the field with a threat from the worthy farmer, that he would immediately return the dog, and enter an action against the seller. This resolution, however, was abandoned on our suggestion, which met with the concurrence of the rest of the company, that without doubt the breaker would rebreak him to his former state of discipline, then hunt him before others whom he would subpœna on the trial, and would thus leave our worthy host minus his cause, exposed to the jeers of his enemies, and to little pity from his more discerning brother sportsmen. We afterwards learned, that a few days' hard work would still elicit some good behaviour, indeed some excellent hits; but eight or ten days' rest would, at any time, make him a perfect renegade. This kind of dog is seldom effectually cured: as long as he has hunt in him, he proves wilful; and, when old, he becomes either stupid or stubborn, or at least such has been our experience of the kind now described.

2565. *Why are good dogs for sporting purposes so difficult to procure?* is a question more often asked than satisfactorily answered. Within the last twenty years dog dealing has become quite a trade in London; and, judging by the advertisements in the sporting papers, nothing but animals of the most wonderful qualities are kept, and which are generally warranted to perform whatever their — perhaps too partial — owners profess they can do. Indeed, we know men in the country calling themselves gentlemen who do not disdain to dabble in this sort of traffic, and who have periodical sales at Tattersall's of whatever they can scrape together, — which they try to palm off under colour of a name that often carries very little weight at home. Between them and the professional dealer, we should prefer the professional, inasmuch as his dogs being very likely stolen, may perhaps be good ones, while the gentleman dealer is sure to have nothing but the scum and scourings of the country. All owners and renters of manors have their own breeds, which they exchange with each other as occasion requires; and if a good dog is to be parted with there are always plenty of customers for him. Dog stealing used formerly to be a very lucrative calling in London, large sums being often received for the restoration of favourite dogs, particularly for the pets belonging to ladies. So crying did the evil become, that an Act of Parliament was passed about ten years ago, through the instrumentality of the present Lord Palmerston, whereby dog stealing was made larceny, punishable by summary jurisdiction before a magistrate, which has had a most beneficial effect in repressing the offence.

2566. *To become successful in breaking pointers,* it is essentially necessary that you begin your operations on an excellent strain. It is equally requisite that you should not only be well acquainted with all the necessary manipulations, but also with the words of encouragement and reproof, which should not be changed by yourself or servant. The following are very common phrases among sportsmen : — When taking the field, *Steady!* This word of caution we always used on entering a field with young dogs with effect, and we did so at the commencement of the season with the elder ones likewise. *Take heed!* is used with the same purport. When your best nosed pointer is seen very busy with his nose and his tail, feathering as he hunts, then the word *To-ho!* in a mild tone but sufficiently marked for the dog's hearing and heeding, is a useful cheer as well as caution. *Down!* or *Down charge!* is an order to the dogs to crouch or drop to the birds. *Back!* returns the dog to your heels. *Seek out!* sends him off again in quest of game; but a *waive of the hand* is much better where it is expected birds are near. *Hie on!* gives a spur to the timid dog to leave your heels, as *seek out* orders him actually to hunt. *Go seek!* should be impressed on the dog's memory as an order to look for something supposed to be actually lost, as a bird you think is wounded, but are uncertain: it therefore differs from *seek out*, and the intelligence of the dog will soon teach him to distinguish between it and *seek out*. *Hold up!* is used to prevent the dropping of the nose to the ground to puzzle out the scent, which, although the odorous particles may not have left the spot the birds stood on, are principally floating in the air; consequently, by holding up his head down wind, he comes in contact with the scent of the birds almost immediately. The puzzle peg is used as a *dernier* resource when *hold up* is not attended to. *Ware!* is also a very important word when its adjunct is with it, as *Ware hare!* as when a pointer inclines to rush on a hare, when partridges, grouse, or pheasants, only are sought for. A very first rate breaker we knew, on entering a field, or wood, or moor, would say, *Ware feather!* when his dogs would pass every bird; and *Ware fur!* would secure every fox, hare, or rabbit, from molestation, as *Ware horse!* would send them from under the legs, or coming in the way, of the *shooting pony*. It is, however, well to bear in mind, that it is prudent to use signs to your dogs as well as sounds: a waive of the hand will frequently save an exclamation that would spring the birds.

2567. *The majority of the young pointer* may be dated from the time he "lifts his leg;" and at this period he may commence his fielding: but as early as five or six months he should be allowed to walk out with his master or the keeper. If it be on the road or anywhere where game is not likely to start before him, here let him ramble alone or in company, but never lose sight of either him or his fellows. Practise one and all in coming in to heel the moment you call, and never excuse one. The word "back," coupled with the dog's name, as *Back*, Dash! should be sufficient, and will prove so, if proper methods have been pursued towards the pupil; for we are complete sceptics on the probability of an entirely intractable nature in any dog. Inquire of Van Amburgh whether he is not of the same opinion? These walking lessons should be to the breaker premonitory ones; some dogs are six weeks, or even two months, in advance of others in their scenting and, consequently, hunting propensities; their accompanier, therefore, must narrowly watch their actions, and note such as are fit to commence fielding. The *Suffolk Sportsman* very justly observes,—"There are two seasons in which pointers may be put under tuition, but only one whereat they can be perfected and made fit for business. The age ought to be near eighteen months; and the puppies that were brought forth from the middle of March to the middle of May will be fit for trial by the middle of August. They who will rear up whelps at any time, with indifference, may find it necessary to take them in hand in pairing season; but then, they should consider the nature of the work they undertake. There is as wide difference between the language of April and September, as settling the saddle on a colt's back, and riding him a match. It is very common, and sometimes absolutely necessary, on account of age, to be doing with a dog in the spring; but it can reach no farther than barely initiating. We must work now in the negative only, except in one article. We can tell him he is not to go off without the word or signal given — drive through one field nto another — chase larks or crows—run at a sheep, and so on, as is usual with most young folks of spirit. He may be taught to quarter his ground, and know his game; and that is the utmost I would aspire to." (P. 67.) These initiatory lessons require to be accompanied with verbal notices; but short and expressive words only should be made use of, and hese should never be changed either by the master or attendants. What says the Rev. B. Symonds, of Kelsale? — "I could, when I had dogs of every denomination, call out any one by name from all the rest, either on my horse's back, or on foot; and not another dog should so much as look through the gate." "When you first shoot to a bird," says Floyd, "a long line should be used, the end of which should be held by an assistant at the time the dog points, in order to check him if he attempts to run up to the falling bird, which he will probably not do if he has been managed according to the directions I have given. It is much better not to allow a young dog to run up to the bird when it falls, although you may wish him so to do when he is perfectly made. All dogs that run up to the bird when it falls will invariably chase more or less, and in so doing put up game. On the ther hand, many birds will be lost if not immediately pursued." (*Observations on Dog Breaking*, p. 19.) We presume that breaking is purposely intended to prevent these propensities taking too deep root, and are not intended to prevent the dog from being broken to fetch his game; for it cannot be denied that this is certainly very luxurious shooting, and where the sportsman is fortunate enough to be either able himself to break his dog to it, or should he have such a keeper as Floyd, we can see no reason why it may not be done. There is, unquestionably, much pleasure in seeing the well broken dog "hieing away," fetching, and putting the bird into our hand. Many however contend, that all that is required is to break the pointer to drop to the gun when a bird falls; and there appears some reason for this preference, for should the bird be only winged it will run before the pointer, and if the covey is large many of them probably will be sprung in the chase; it remains therefore with the sportsman, to take his choice between the excellences and the grievances. As regards training the pointer to game, it has occasioned disputation, whether too great plenty, or a scarcity of game, is to be preferred for his practisings. It will, in our opinion, depend on the extent to which the dog's breaking has already been carried, for there are but few that have not received some; and also whether it has been good or indifferent. If his early lessons have been conducted judiciously, and the dog comes of a good breed, and has had good initiatory lessons, no quantity of birds will either bewilder him, or make him careless or wild. If otherwise, we know of nothing more unlikely to unsettle the wilful dog than a profusion of birds.

2568. *We have hitherto said little on the subject of purchasing pointers.* If you are forced to this alternative, be very cautious; first, learn as much as you can with regard to the breed, and have indubitable proofs that the account rendered is correct. First, let powder be burnt over the dog; for it has not unfrequently happened, when one has been purchased without a trial, that the first shot has sent the frightened animal no one knows where, perhaps to his original home, where he had been foolishly shot at to cow him; and, consequently, he will never now be worth the powder that ruined him. Mark the signals which the master of the dog you are trying makes, and carefully note the words of command, reproof, &c. he uses. Dog language unfortunately varies in different localities, and almost every breaker has his own calls, which it behoves the buyer of a new dog to store up in his memory. It is, we again assert, actually impossible that you can be too cautious when purchasing a dog; nor that you can have too much trial of him. We shall, in all probability, reiterate these cautions as we proceed — they are so important; for the dog traffic is to the full as nefarious as horse dealing.

Subsect. 6. *The Gamekeeper.*

2569. *Mr. Daniel very justly observes,* that it is not every fellow with a short jacket and half-a-dozen pockets that is fitted for a gamekeeper, in which we cordially agree. The well appointed gamekeeper (*fig.* 400.) ought to have as much or even more varied information under his hat than even the huntsman to a pack of hounds, who is however a very important personage. If a gamekeeper be really honest and efficient, he is the *rara avis in terris!* a very black swan! so difficult a matter is it to enter on an office that almost by patent is supposed to imply a right to get all that can be got, and also to get it any how. Nevertheless, we believe there are some conscientious gamekeepers, and they ought to be highly prized and well rewarded. We perfectly agree with Mr. Daniel, that "a sportsman does not require a man to be termed a gamekeeper who is the best shot in the district: it is not for the purposes of slaughter, but protection, that he employs him; and to afford that protection, he should be well versed in the nature of every sort of vermin, with their haunts and their mode of preying upon the game, and not only know, but be indefatigable in catching, the most subtle and wary of them. He should (like one who publicly advertised for a gamekeeper's place some years since) be able to kill all vermin, "from a mouse to an otter, and from an eagle to a sparrow." If with this art he can shoot well enough to kill a dog or a hawk his master will have a greater prospect of a stock of game, than if he could hit eleven

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farthings out of twelve, thrown at several times into the air. These desperate marksmen are very apt to keep their hands in by killing game unknown to their employers; and what perhaps is first sent as a present to a friend, soon becomes an object of merchandise, and readily finds its way to market through the medium of the coachmen and guards to mail and other coaches (the higglers generally deal with poachers themselves)." (P. 131.) The same gentleman also tells us "one mode of supplying the poulterers and fishmongers is by gentlemen who send hares, pheasants, and partridges to them, and receive an equivalent in poultry and fish during their residence in town. Allowing these sportsmen do not truck their commodities for money, they are, in the proper sense of the word, nothing less than higglers, dealers, and chapmen; for although an exchange is affirmed to be no robbery, yet it was never denied to be a sale, and the act of selling game is illegal in any person whatever. Besides, gentlemen must allow these poulterers and fishmongers to bear their names as a qualification, in case of being informed against for having game in their possession, and which is a cover for all that comes into their hands from the poacher." (P. 132.) Legalising the sale of game has, however, made a mighty change in this matter. We have understood, that in one of the Norwich coaches, some years ago, when it arrived at Lad-lane, the following game was told out: — hares 154, pheasants 163, partridges 189, woodcocks 34, snipes 149, wildfowl 72; but this quantity, we believe, has been occasionally much exceeded. Neither did this include the private and poached passengers of both feather and fluck, under the *private care* of the guard and coachman. We also regret to add, that some gentlemen hire persons to shoot for them by the year, the consequence of which is, that not only the game on the manor to which the game is deputed, but all the contiguous manors likewise suffer.

2570. *The gamekeeper's situation, in most cases, is an enviable one;* particularly if, with the confidence of his master, he have sufficient assistance under him. He is, in virtue of his office, looked up to, has much weight in his own neighbourhood, and in many instances his situation is a lucrative one, particularly if he be allowed to break dogs; and, it is the more so, if he also can deal in them, as is not uncommon: neither of which would we, however, allow; he cannot serve so many masters, nor carry on so many trades, fairly to all concerned. We therefore would caution all gentlemen against permitting the keeper to do either one or the other — that is, to break dogs or to traffic in them in any way. The master's interest must be neglected, and the dogs his keeper breaks or rears must, in all probability, be fed at his (the master's) expense. Neither should any gentleman retain a keeper in his employ who is a frequent visiter to the country ale-house. While he is there, the safety of the game is neglected, and frequently his visit is premeditated and paid for — as some are better paid for not seeing than those that do see. If we did not know that some persons are apt to hire a poacher to do the office of keeper for them, we should be doubtful of the possibility of the thing: it has, however, been frequently done; but we believe we could with safety assert, that this method never did, nor is it ever likely to, answer the sportsman's purpose. "Setting a thief to catch a thief" is an old saying, and some might apply it to our present subject, and there is much parity of cause and effect in the case. The poacher will still enact his part; and if he can make it worth the keeper's acceptance, the keeper will let him poach on in such parts of the manor as are little frequented. We once knew an instance where such a proceeding was detected, when the gamekeeper in his defence alleged, he did it purposely to save his master's game near the homestead, by his attention not being divided between the outposts and the home preserves. By the next year it was hard to tell which was most cleared, the home, park, and woods, or the poacher's ground; however, the poacher was made to fly the country, and the keeper was turned adrift without a character.

2571. *The gamekeeper who would act up to his duties* should be a general observer of Nature, particularly of her living objects, with which he should have an universal and also an intimate acquaintance. The seasons likewise, under all their variations and consequences, he should mark well; thus he would be aware that a mild spring, by encouraging all game birds to pair earlier than when the season is late, cold, and wet, would lead him to act accordingly. Partridges hatched in a mild season will be seen very forward, indeed, as early as June; and pheasants likewise, under the same circumstances, often appear towards the middle of the same month. Under such premonitions he should spare the female hares after Christmas, for they will probably be forward in young in February, and consequently neither fit for food nor creditable to kill. We would hope that no sportsman would entrust his game establishment to a keeper that could not read; and yet we have heard of a gentleman being pursued by a keeper who, when he came up, was inclined to be troublesome, very authoritatively insisting on the gentleman's name being given, and that his certificate should be shown, which, being complied with, the keeper acknowledged he could not read, but very coolly desired the gentleman to read it for him, but which was not complied with; on the contrary, the holder of the certificate returned it to his pocket unread, and left the impertinent to his own redress. This was bad enough; but if he was either the principal, or the only keeper, his master could not have had very enlarged notions of the duties of such a servant, who, if not equally erudite with his land steward, should at least be sufficiently educated to be able to read and write, and also be well versed in every bearing of the game laws. Not only should he have these acquirements, but it is requisite that he have gained knowledge enough to avoid leaving a bad impression on the minds of strangers relative to his master from the ignorance and ill-behaviour of his servant. A gentleman we ourselves knew was so rudely accosted by a keeper, that he would make him no answer; the *brute*, relying on *brute* force, took the trespasser, as he was pleased to consider him, by the collar, and was in return immediately knocked down. The keeper, on rising, attacked our friend with great violence; but he, being excellently versed in all the arts of *defence*, although one of the most *inoffensive* of men possible, gave the keeper a most sound drubbing, and hardly received a scratch in return. In olden times the gamekeeper to a respectable domain was usually a man of much respectability and much general information: his manners also were commonly such, that he could make his company agreeable to the visiters of his master in their sportings, yet he was possessed of sufficient firmness to awe delinquents who intruded themselves without authority. Every keeper, likewise, should be above accepting a bribe, and ought to be discharged as soon as it is found that he has received one, although it must be allowed that the briber must be at least as criminal as the unfaithful keeper. We do not here allude to the usual douceur, which is often well earned, and very properly bestowed on the keeper who accompanies you around the manor.

2572. *The honesty of the gamekeeper* is of great importance to the credit of his master, and to his interest also, if he should wish to keep the manor well stocked with game. We ourselves would never allow a keeper to shoot with any other than a single gun, and were it not for the awe it may excite in the occasional trespasser, and likewise on the regular poacher, as well as the necessity of his shooting the birds and beasts of prey which devour the game; were it not for these considerations, we repeat, our keeper should not be even allowed to carry a gun. We never permitted our own to carry one; but, as regarded ourselves, the woods we considered most in the light of preserves were within hearing of the dwelling-house, and although the manor extended several miles, the circumjacents being bordered by decoys, which were strictly watched by the decoy renters (we ourselves could not shoot but within certain distances of them), there was therefore little necessity for arming him. The keeper to a manor should be on the best terms with the farmers around; but, at the same time, he should observe well the number and kind of dogs kept by each. If it be a hare farm, and consequently a coursing locality, let him set his face against a lurcher being kept, and let him have a sharp eye on the gun or guns that are paraded over the mantel-piece; and if they are seen to be every now and then disturbed, let it arouse his suspicions. Crows and magpies do not require shooting all the year round, and the gun is not charged anew each night to guard the dwelling. Is there a pheasant preserve on the manor, he must be extremely vigilant at the time they are pairing, to guard against their eggs being stolen and sent to Ireland, or into the counties where pheasantries for breeding are common, as in Buckinghamshire, Hertfordshire, &c. &c. He must also encourage the pheasants to breed near his lodge; and, to this end, he should keep them around him, by a morning and afternoon call by bell to be fed. Stacks of peas or of buckwheat should likewise be placed at convenient parts of the manor, where they can feed without temptation to stray. The prudent gamekeeper, while he is vigilant, will however never seem to be too hard on the sportings of the tenantry, so long as they are kept within proper bounds. By such indulgence every farmer will himself become a zealous and faithful keeper over the manor; and the rightful keeper, without any infringement on his own duty, will extend the interest and reputation of his master. Nor will it be at all out of place that he should now and then request of his master a day's shooting, or a day's coursing, for the tenants and their friends. It is fit that they whose land furnishes the means should also receive part of the produce; deprive them of that, and likewise of the favourable notice it betokens, and it deadens their efforts to assist in preserving the game on the land. Is a pack of foxhounds kept near your master's preserves, good keeper? Yes. Then, indeed, you have a difficult game to play; for two interests are here opposed, and sometimes three, supposing that you have the rabbits as part of your wages, a very undesirable arrangement for a master to make who has the interest of fox-hounds at heart. Let the keeper, however, remember what sport a fox affords to every class of society, and what credit attaches to the one who, in addition to good wild foxes, can show a good supply of pheasants. Above all, don't live with a double-faced master, who tells you to do one thing (preserve) in public, and another (perhaps poison) in private. When we lived at Tollesbury Manor House in Essex, where numbers of foxes surrounded us, and where consequently a leveret or two, and a few of our rabbits, were occasionally taken from the adjoining woods, and where our hen-roost might now and then suffer, yet the loss was very trifling; nor did the rabbits sensibly decrease. We therefore, in justice, could not owe this sporting trump a mortal grudge; on the contrary, when we have occasionally popped on him in the woods which surrounded our house, the rogue looked so sleek and so sly that we could not find it in our heart to break through the rules of hospitality so much as to fire at him We defy a man fond of fox hunting to be a willing vulpecide, even on his own or on his rented manor, as was the one we now notice. But where fox hunting is not pursued, and other game is cherished, we cannot wonder at the hostility of others towards him, particularly if they are not fox hunters. If no foxhound pack be in the vicinity, or seldom approaches it, although hares and rabbits may abound, and winged game may be in tolerable plenty, foxes will multiply, and under such circumstances the owner of the estate will be irritated, and we then must not be surprised should the keeper set a trap for his capture and send him elsewhere. When a fox-trap is set, we hardly need to inform the keeper that his hands must be so covered, that no human scent shall remain on either the trap or the bait.

2573. *The winged game destroyers* must be equally watched by the keeper. The dark buzzard, and that variety familiarly known as the puttock, the kite or glead also, being one and all very destructive to every kind of game, must be narrowly guarded against; for they live almost entirely on it. Ravens and crows must likewise be looked after, and either shot or taken in springes; snakes also are destructive to game and to the eggs of game; and although we have offered an instance, of our own witnessing, of the capability of the hedgehog to seize on the leveret, which may be kept in mind, yet we do not think it a common occurrence. Magpies, rooks, crows, &c. may be taken by means of stiff paper pieces made into funnel shapes. Apply some birdlime within the sides, and at the bottom of all; having also stuck a piece of flesh within each, plant these funnels into the ground sufficiently firm to support themselves against the wind: so doing, the birds in their attempt to secure the meat, fasten the paper funnel so tightly to the head, that they may be taken by hand. We hardly need to remind the keeper that he should bush the stubbles thoroughly, and the grass fields likewise, for netting is carried on by poachers over them as well as over the stubbles. Dog brambles laid lightly on the stubbles, or on the grass, by rolling with the net prevent its action, and fearfully annoy the poacher. If a partridge's nest is found before mowing, mark it by a stick, bush, or other object, that shall warn the reaper, or the watchful mother may be cut into pieces by the scythe. It would also greatly tend to the preservation of game, that the farm tenants should not *mow* their grain: neither should they remove the stubble as soon as the harvest is completed. It ought not to be done until from six weeks to two months (according to the nature of the season) has passed over. Were we to enter fully into all the duties of the gamekeeper, so multifarious are they, our niche for the subject would spread over the space allotted to that of several others. If life and strength however be left us, we will yet fill up the blank, for the subject is both an interesting and an important one.

CHAP. IV.

GROUSE SHOOTING.

2574. *Grouse shooting to the gunner* is what the chase of the fox is to the zealous hunter of beasts. It is certainly attended with less danger, but it is infinitely more fatiguing, which again is fully compensated to the lover of nature by the endless variety it presents, and to the sportsman by furnishing him with the objects he is in pursuit of. The month of August is therefore looked forward to by the fowler with extreme anxiety, and grand preparations are made by him for his visit to the moors, or muirs as they are called by the northerns. But ere we proceed further on our journey there, we must inquire into the natural history of the varieties of this interesting family we hope to meet with when we do arrive there. It appears somewhat inconsistent that we should take such pains, and go so far, purposely to destroy that which we so much admire: but when we are enjoined, as a divine command, to "Take, kill, and eat," we hope we do it without offence; for we are told that it is not the use, but the abuse, of our pursuits after animals that is to be reprobated: for to a certain extent it is not only lawful, but is also demanded of us to keep down a super-abundance of the living objects around us.

SECT. I. *The Members of the Grouse Family.*

2575. "*By the word grouse,*" says Sir William Jardine, "we, in general language, are most apt to associate our ideas with the common muirfowl. But in the technical terms of ornithology, the generic name, *Grouse* and *Tetrao,* is restricted to those bearing the form of the European wood grouse, dusky grouse of America, &c. They are the largest birds of the family, of a very round and powerful form, and frequent heathy forests in preference to the wild and open muir, perch and often roost on trees, where young shoots and tender bark also supply them with food; and although the legs are plumed with short feathers, the toes are naked. The tail is composed of broad feathers, and is proportionably long and rounded. They are mostly polygamous, and the females and young differ considerably from the males, the plumage of the former being shades of brown and tawny, with black bars and markings, the colours of the latter distributed in broad masses of black, glossy green, or steel-blue, and deep brown. They inhabit North America and Europe, those of the latter country extending into Northern Asia." (*Naturalist's Library*, vol. iv. p. 108.)

Subsect. 1. *The Wood Grouse, or Capercallie.*

2576. *The wood grouse, or capercallie* (*Tetrao Urogallus* Linn.) is known also as the *cock-of-the-wood*, and *giant grouse*, from his great size and gallant bearing. As he is seen in *fig.* 401. he might indeed be taken for a bird of prey, rather than a fowl; and his very beak, it will be seen, indicates predacity. Sir William Jardine says of this admired bird, that " He was the noblest of the British feathered game, but that the attributes of strength, size, and beauty, have proved his destruction; and, consequently, they have been for many years extinct. In ancient times they were tolerably abundant in the primeval forests of Scotland and Ireland. From the latter they appear to have been entirely extirpated at a very early period, while in Scotland the destruction was more gradual; but they gradually dwindled away there, also, by murderous hands; and the last specimen is recorded, from fifty to sixty years since, to have been killed in the neighbourhood of Inverness. There is, however, a prospect (as will appear hereafter) of the species being again introduced to the Scottish forests; and, at all events, the following interesting account of the attempts which have been made at Mar Lodge, and the habits of the female and young, will be read with interest." The accounts here noticed, as we learn from this eminent writer, were extracted from Jameson's *Journal* for July, 1832, and are too descriptive and too important to the reader generally, and to the sportsman particularly, to be omitted; and the more so, for the gleam of hope they afford, that in our day we may once more see this noble bird indigenous to our island. " I was wading," says the narrator, " down the Dee one fine afternoon, a little below Mar Lodge, and with a lighter pannier than usual, when I heard the cry of a bird to which I was unaccustomed, and my bad success in that day's angling induced me the more readily to diverge from the ' pure element of waters,' to ascertain what this might be. I made my way through the overhanging wood for a few hundred yards, and soon after reaching the road, which runs parallel with the river on its right side, I observed a wooden palisade, or inclosure, on the sloping bank above me. On reaching it, I found it so closely boarded up, that I had for a time some difficulty in descrying any inmates; but my eye soon fell upon a magnificent bird, which at first, from its bold and almost fierce expression of countenance, I took rather for some great bird of prey than for a capercallie. A few seconds, however, satisfied me that it was, what I had never before seen, a fine living example of that noble bird. I now sought the company of Mr. Donald Mackenzie, Lord Fyfe's gamekeeper, the occupant of the adjoining cottage. He unlocked the door of the fortress, and introduced me to a more familiar acquaintance with its feathered inhabitants. These I found to consist of two fine capercallie cocks and one hen; and the latter, I was delighted to perceive, accompanied by a thriving family of young birds, active and beautiful. The first importation of these capercallies arrived from Sweden about the end of the year 1827, or early in January, 1828. It consisted of a cock and hen, but the hen unfortunately died after reaching Montrose Bay. As the male bird alone arrived at Braemar, the experiment was judiciously tried of putting a common barn-door fowl into his apartment during the spring and summer of 1828. The result was that she laid several eggs, which were placed under other hens, but from these only a single bird was hatched; and when it was first observed, it was found lying dead. It was, however, an evident *mule*, or hybrid, and showed such unequivocal marks of the capercallie character as could not be mistaken. The second importation likewise consisted of a cock and hen, and arrived safely in this country in January or February, 1829. The female began to lay in the ensuing April, and laying in general an egg every alternate day, she eventually deposited about a couple of dozen. She showed, however, so strong a disposition to break and eat them, that she required to be narrowly watched at the time of laying, for the purpose of having them removed, for otherwise she would have destroyed the whole. In fact, she did succeed in breaking most of them, but eight were obtained uninjured. These were set under a common hen, but only one bird was hatched, and it died soon after. In the spring of 1830, the hen capercallie laid eight eggs. Of these she broke only one; and, settling in a mo-

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therly manner on the other seven, she sat steadily for five weeks. On examining the eggs, however, they were all found to be addled. In the early part of 1831, three apartments were ingeniously formed adjoining one another. The hen was placed in the central chamber, between these and the inclosure on either side, each of which contained a male; there was an easy communication, so contrived, however, that the female could have access to both the males, whilst they, from their greater size, could neither approach each other, nor disturb the female as long as she chose to remain in her own apartment. In May and June of that year she laid twelve eggs, seven of which were set under a common hen; of these, four were hatched in an apparently healthy state, one was addled, and the other two contained dead birds. Of those left with the capercallie hen, she broke one, and sat upon the other four; of which two were hatched, and the other two were found to contain dead birds. Of the two hatched, one soon died. Both the barn-door hen and the female capercallie sat twenty-nine days, from the time the laying was completed till the young were hatched; and Mr. Cumming called my attention to the fact, that there were birds in all the eggs of this year's laying except one. My visit to Braemar took place about the first week of last August. I think all the five young were then alive, and although only a few weeks old, they were by that time larger than the largest moor-game. I had no opportunity of handling them, or of examining them very minutely; and the general view which I had of them, at the distance of a few feet, did not enable me to distinguish the difference between the young males and females. They seemed precisely the same at that time both in size and plumage, although I doubt not the male markings must have shown themselves on the young cocks. The single surviving bird of those hatched by the mother died of an accident, after living in a very healthy state for several weeks. Two of those hatched by the common hen died of some disease, the nature of which is not known, after lingering for a considerable time. It follows, that there are only two young birds remaining. These are both females, and when I last heard of them, some months ago, were in a thriving condition. The whole progeny were fed at first, and for some time, with young ants; that is, with those whitish, grain-shaped bodies, which are the larvæ and crysalids in the cocoons of these industrious creatures, though commonly called ants' eggs. At that period they were also occasionally supplied with some tender grass, cut very short. As soon as they had acquired some strength, they began to eat oats and pot barley, together with grass and the various kinds of moss. They are now fed like the three old birds, chiefly on grain and heather tops, with the young shoots, and other tender portions of the Scottish fir. I am informed that the distinction between the sexes had become very obvious before the death of the young males. The plumage of the latter was much darker, their general dimensions were greater, their bills larger and more hooked. These characters became very apparent during November and December. The old males have never yet had access to the young birds, so that it has not been ascertained whether they entertain any natural regard for their offspring, or would manifest any enmity towards them. From the continued wildness of the old birds, especially the males, it was found difficult to weigh them, without incurring the risk of injuring their plumage. However, the male which arrived in 1829, and which then appeared to be a bird of the previous year, was lately weighed, and was found to be eleven pounds, nine ounces, avoirdupois. Judging from appearances, it is believed that the weight of the old hen would not much exceed one-half. There is, indeed, a striking disparity in the dimensions of the sexes in this species." It yet inhabits many of the forests of Europe, and it is there to be found at the present time in sufficient plenty. It is also known in many parts of northern Asia, but every where is in most abundance in the pine forests, the young shoots and cones of the pine, the catkins of the birch, and berries of the juniper, being its favourite food. Sir William Jardine says of these birds, " They are polygamous, and at the commencement of incubation the male places himself conspicuously, and attracts the female by his loud cries, resembling *peller, peller, peller*, and by his various attitudes. On hearing the call of the cock, the hens, whose cry in some degree resembles the croak of the raven, or rather, perhaps, the sounds *gock, gock, gock*, assemble from all parts of the surrounding forest. The male bird now descends from the eminence on which he was perched to the ground, where he and his female friends join company. When the females really commence incubation, they are forsaken; the males skulking among the brushwood, and renewing their plumage, while she attends to the hatching and rearing of her progeny." (P. 115.) Bewick, who is usually very correct in his ornithological descriptions, states the capercallie to be "as large as a turkey, that it is about two feet, nine inches, in length, and weighs from twelve to fifteen pounds. The bill is very strong, convex, and of a horn colour; over each eye there is a naked skin, of a bright red colour; the eyes are hazel, the nostrils are small, and almost hid under a covering of short feathers, which extend under the throat, and are there much longer than the rest, and of a black colour; the head and neck are elegantly marked with small transverse lines of black and grey, as are also the back and wings, but more irregularly; the breast is black, richly glossed with green on the upper part, and mixed with a few white feathers on the belly and thighs; the sides are marked like the neck; the tail consists of eighteen feathers, which are black—those on the sides are marked with a few white spots; the legs are very stout, and covered with brown feathers; the toes are furnished on each side with a strong pectinated membrane. The female is considerably less than the male, and differs greatly in her colours: the throat is red; the transverse bars on the head, neck, and back, are red and black; the breast is of a pale orange colour; belly barred with orange and black, the top of each feather is white; the back and wings are mottled with reddish brown and black, the scapulars tipped with white; the tail is of a deep rust colour, barred with black, and tipped with white." (P. 296.) We believe it was never known in Wales; but, in times long past, it was not uncommon in Ireland. Mr. Pennant notices one shot near Inverness as a very extraordinary occurrence; but whether it was the rarity of its southern position, or the time when it happened, is not noted. As, however, the circumstance occurred some fifty or sixty years ago, we suppose it was considered as the last of the race of that period. We nevertheless are allowed still to hope, that by the spirited exertions of the Earl of Fife, notwithstanding the disasters that have hitherto befallen them, that this second naturalisation will eventually be attended with success; and foul befal the murderous hand that shall then be lifted against them. Mr. Lloyd also, it is said, brought some of these rare birds from Sweden for the Marquis of Breadalbane, for his woods at Taymouth Castle; and common report says, they also are likely to thrive. We however fear such are the villanous propensities of the lower orders to mischief, that they will not be suffered to increase. The hen bird of the capercallie is very small when compared with the male; but it is worthy of remark, that there is not much variation, either in size or colour, between the sexes, until towards the winter which succeeds their hatching. Wild as the cock bird is in his native state, yet Lloyd in his *Northern Field Sports* (a work we have had former occasions of noting as offering a most interesting and faithful account of the sports of the field in those localities) assures us, that the capercallie is often domesticated in Sweden, and becomes so tame as to eat out of the hand. In their captivity they were fed, we are told, with oats, and with large branches of Scotch fir, which were introduced into their cages; water and coarse sand were likewise given them. We learn from another source, that of Mr. Nillson, that in the province of Dalecarlia these birds are reared in confinement, and become as tame as a domestic fowl. In a state of nature, on the contrary, this bird is famed for his wildness, and disposition to be pugnacious; Nature, indeed, seems to have intended him to be so by his powerful make, and by the form of his bill, which, like that of the hawk, bears all the signs of pugnacity about it. Its great strength, however, was required to sever the heath tops, the strong berries, and the pine cones. This account of the domesticated capercallie only confirms us in our oft-repeated assertion, that when man was made *lord* over the living objects of creation, no inseparable bar was made by the Creator between us and them; but, on the contrary, that one and all may be familiarised.

2577. *The pairing of the capercallie* commences about the spring, the sexes having kept together during the winter in packs of fifty or a hundred. When the pairing has been completed, the female, making a rude nest, lays from eight to sixteen eggs in some spot where she can sit on and hatch them in security. The young, like the farm-yard fowls, are active as soon as they are hatched; and, it is said, they are frequently seen running about with part of the shell on them.

2578. *Of the shooting of the capercallie in Britain*, we have few notices; but of the methods of taking or shooting them in Sweden, both Mr. Nillson and Mr. Grieff, gentlemen of that country very highly spoken of by Mr. Lloyd, give us the following account. We will claim a little indulgence for introducing, also, what Mr. Brehm states: — "I usually shot the capercallie in company with my Lapland dog, Brunette (a cocker), of which I have already made mention. She commonly flushed them from the ground, where, for the purpose of feeding upon berries, &c. they are much during the autumn months. In this case if they saw only the dog, their flight in general was short, and they soon perched in the trees. Here, as Brunette had the eye of an eagle, and the foot of an antelope, she was not long in following them. Sometimes, however, these birds were in the pines in the first instance; but as my dog was possessed of an extraordinary fine sense of smelling, she would often wind, or, in other words, scent them for a very long distance. When she found the capercallie, she would station herself under the tree where the bird or birds were sitting, and, by keeping up an incessant barking, direct my steps towards the spot. I now advanced with silence and caution; and, as it frequently happened that the attention of the bird was much taken up with observing the dog, I was enabled to approach until it was within the range of my rifle, or even of my common gun. In the forest the capercallie does not always present an easy mark; for dipping down from the pines nearly to the ground, as is frequently the case, they are often almost out of distance before one can properly take aim. No. 1. or 2. shot may answer very well, at short range, to kill the hens; but, for the cocks, the sportsman should be provided with much larger. Towards the commencement, and during the continuance, of the winter, the capercallies are generally in packs; these, which are usually composed wholly of cocks (the hens keeping apart), do not separate until the approach of spring. These packs, which are said to contain fifty or a hundred birds, usually hold to the sides of the numerous lakes and morasses, with which the northern forests abound; and to *stalk* the same in the winter time with a good rifle, is no ignoble amusement. Among other expedients resorted to in the northern forests, for the destruction of the capercallie, is the following: — During the autumnal months, after flushing and dispersing the brood, people place themselves in ambush, and imitate the cry of the old or young birds, as circumstances may require. By thus attracting them to the spot, they are often enabled to shoot the whole brood in succession." The manner in which this is practised may be better understood from what Mr. Grieff says on the subject: —" The capercallie is shot in the night time by torch-light. This plan, which is said to be very destructive, is, I believe, confined to the southern provinces of Sweden; for, in the more northern parts of that country, I never heard of its being adopted. In Smaland and Ostrogothland this is said to be effected in the following manner: — Towards night-fall people watch the last flight of the capercallie before they go to roost. The direction they have taken into the forest is then carefully marked by means of a prostrate tree, or by one which is felled especially for the purpose. After dark, two men start in pursuit of the birds; one of them is provided with a gun, the other with a long pole, to either end of which a flambeau is attached. The man with the flambeau now goes in advance, the other remaining at the prostrate tree, to keep it and the two lights in an exact line with each other; by this curious contrivance they cannot well go astray in the forest. Thus they proceed, occasionally halting, and taking a fresh mark, until they come near to the spot where they may have reason to suppose the birds are roosting. They now carefully examine the trees, and when they discover the objects of their pursuit, which are said stupidly to remain gazing at the fire blazing beneath, they shoot them at their leisure. Should there be capercallies in the same tree, however, it is always necessary to shoot those in the lower branches in the first instance; for, unless one of these birds falls on its companions, it is said the rest will never move, and in consequence the whole of them may be readily killed." We have before had occasion to recommend Mr. Lloyd's work on the *Field Sports of Norway and Sweden*, as among the most interesting of the modern sporting works that have appeared; and the extracts we have now laid before the reader, although but a very small portion of the entertaining and instructive matter therein, will, we hope, not only bear us out in our assertion, but will excite him to possess himself of the whole; and, so doing, we pledge ourselves he will be amply repaid.

2579. *Renewed hopes of again naturalising the capercallie.* A notice in the *New Sporting Magazine* for August, 1837, states that "Thomas Fowell Buxton, Esq. not better known as an eminent brewer, than for his readiness in lending himself and ample fortune to any laudable purpose, empowered Mr. Lloyd, above mentioned (who, having taken up his abode in Sweden, was therefore a fit *employé*), to collect in that country a sufficient number of capercallie to replace those before brought over, to form a breeding stock of them. This undertaking, at great trouble and vast expense, was effected by the exertions of Mr. Lloyd, and twenty-nine birds were shipped in Sweden for England, only one of which died on the passage; and it must be allowed that this good fortune was highly creditable to the judicious care of Lawrence Banville, the person entrusted with them. With that laudable disposition to extend every branch of useful and interesting knowledge, which marks the general conduct of Mr. Buxton, he was pleased to present the whole to the Marquis of Breadalbane, who, being known as the owner of an Highland district of vast extent, and equally well known to have been formerly inhabited by these birds, was consequently well adapted to receive and nurture them again; and thus our hopes of their multiplication and preservation are renewed. Mr. Buxton showed also a sound judgment in placing them under the protection of a nobleman not more eminent for his vast estates, than for his anxiety and exertions made to introduce improvement in the country he inhabits. We should therefore hope, that gratitude alone will prevent vile marauders from an attack on these valuable foreigners. If it should be otherwise, may signal punishment overtake the hand that does it, for mischief alone can prompt the deed; and mischief only, we should think, can injure the stock; for the extensive forests of the noble marquis offer them excellent shelter, as the trees themselves furnish the food so congenial to their tastes." It happens, however, that since the above statement was made, the proprietors of this work have received from the son of Mr. Buxton a much more detailed account of the extent and success of the attempts to again naturalise the capercallies in Great Britain, with kind permission to make what use we please of the communication. The subject, it must be confessed, is of considerable interest both to the sportsman and naturalist; and as we know that the matter so kindly handed to us is correctly detailed, we think it will best answer the purpose of our readers to give them the whole of it as it has been sent to us; not omitting the naïvely-told tale of the adventures of the gamekeeper in his journeyings to and from Sweden, and the final success which crowned his active and ingenious endeavours. Let us also hope, that under the judicious management of Mr. Guthrie the head-keeper, and the active cooperation of this valuable subordinate with those of the other assistants at hand, the spirited and continuous attempts of the Marquis of Breadalbane will finally be crowned with success, and that this noble head of the grouse family may once more triumphantly crow over the

Scottish woods. "I send you," says Mr. Edward Buxton in a letter to a friend, "all the information I can collect of the introduction of the capercallies into Scotland. About fifteen years ago my father received in Norfolk a present of a cock and hen capercallie from Mr. Llewellen Lloyd, who was residing in Sweden. They were kept in a house where they bred, and the hen brought off six young ones. They grew till they had nearly reached the size of pheasants, and then, in consequence of being exposed to the sun on a hot day, they, with the mother, all died. The cock was turned out, and lived two years in a wild state, when he was killed by accident. Several years after this my father was very kindly invited to shoot in Scotland on the Marquis of Breadalbane's moors, and he then proposed to him to make another attempt to introduce this bird into Scotland. He applied to Mr. Llewellen Lloyd to procure them, and through his great perseverance and assiduity, sixteen hens and thirteen cocks were collected at Venusburg, and sent to England in 1837. Many had died on the road; which may be accounted for, as they were collected from all parts of Sweden. Lawrence Banville, Mr. Buxton's Irish gamekeeper, was purposely sent to Sweden to bring them to Scotland, and some extracts from his entertaining journal will inform you of his adventures until his safe arrival at Taymouth Castle with twenty-eight birds. They were received with delight by the Lord of Breadalbane, who has spared neither pains nor expense to give the experiment success."

2580. *Our new journalist* now takes up the pen, and thus relates his adventures: — "Saturday, April 1st, 1837. Yesterday I took leave of my little family, started on the coach to Norwich, and stayed there for the night. To-day I set out on the Ipswich coach. I halted at this town for the night, and agreed for a boat to take me down the river. — Sunday, April 2d. This morning I set out, and arrived at the inn at Harwich about twelve o'clock: the wind in the right quarter for us to sail to Sweden. — Thursday, 6th. This day I helped to take Mr. Lloyd's things to a boat that was going to the yacht; as I was getting into it, I slipped in, and hit my leg against one of the thwarts of it. I hurt it very much. — Tuesday, 11th. This day we weighed anchor. I was sick in a few hours, as also the following day. — Monday, 17th. After a somewhat cold and stormy passage, we this day made the Swedish coast, and got on shore.—Thursday, April 20th. At nine o'clock on this day I gained the long-wished-for spot (Mr. Lloyd's house near Venusburg), and all seemed as pleased to see L. Lloyd, Esq. as I should be to see my worthy master after a long journey. There are thirteen of those great birds for me to see in the morning. — Friday, 21st. This morning I was up at an early hour, and saw the birds: they look well — only one hen, which I fear will not be long here. L. Lloyd, Esq. went to Troulhatten after the men to come to make the coops for the birds, which are about five feet in length by three and a half in breadth, with a division in each of them to enable me to clean them out on the sea if all is well. This day I saw martins. — Thursday, 27th. This morning another cock came to us: I was happy to see it; a fine bird it is. I was chiefly receiving the birds this day. L. Lloyd and his men went out to fish. — Thursday, May 4th. This day I am happy to say that there are three of the coops fit for my birds. — Friday, 5th. I got the whole command of the birds this day. One old cock died yesterday. I shall skin him. We had put the old cock in a cage by himself, and two in each apartment. This was a busy day with me, in doing all things for the birds. — Saturday, 6th. This morning I found the birds in the house were fighting; but what was the cause I knew not. I now and then put some of them into other apartments to see if it would be over; they were, however, not so easy to be put off, for one of their legs was broken. We were forced to put them in the coops by themselves. I was so sorry to see them fight, as I did not know when it would be over. We were all employed after the birds, as they seemed to be coming from the forest to us in good style. The cock that died weighed nine pounds. My leg was very painful to me. — Wednesday, 10th. This morning I did all things for my feathered tribe. The cock that I said was hurt; this day he is dead; his leg was broken in two places. — Saturday, 13th. This day I skinned two of the great cocks, and as I was dressing the skin of one of them, a drop of the stuff flew in the corner of my right eye: it is very painful to me. I keep watching every day for some of the eggs, but no sign of them yet. — Sunday, 14th. This day I was obliged to keep at home to keep the people from tormenting my little feathered family, as I had them now to attend to in this country. They all look well, with the exception of one hen. She feeds well, but did not go up to the roost.— Monday, 15th. This is a great holiday with them in this part of the world. We got a hen (black game), also some eggs. I went into the woods with a man, to see if he could show me a kind of grass the birds are fond of; but I am sorry to say it was not grown that he could find it. We again returned home with plenty of moss out of the woods to make some nests for the hens to lay in, in my houses, or to try if they would lay in them; they are all doing well, and I am happy to have it to say of L. Lloyd, Esq. that he is doing all in his power to get all he can for my master, as he says there were four or five dozen on the road, or ten, or perhaps more. Cold at night. It rained this day. — Wednesday, 17th. At this present time we have only one capercallie's egg, two black game eggs; they call them *arro* in this part. — Saturday, 20th. A man came to inform Mr. Lloyd that he had got a capercallie in a house, also a blackcock, one egg of the black game, and four of the capercallie. — Monday, 22d. This morning I was well pleased to hear the black game that were in the house playing the same as when in the wood. It is a fine bird. The capercallie cocks have played a long time, which is amusing to any one to hear them. — Sunday, 28th. I waited on my birds. It is hard work on Sundays to keep the people from tormenting my birds, and I do not like to be too hard on them. — Tuesday, 30th. I was chiefly fishing; as to my birds I had them all settled in the coops; it put me out to find at night that the housekeeper wanted Mr. Lloyd to alter the birds again; but I asked his honour for what did he want to do so? is it not an old saying, 'let well alone?' which he agreed with. Any wild creatures the more seldom they are disturbed, the better for the birds or beasts; also for them that have them under their care. — Thursday, June 1st. I stopped at home attending to my birds; they were all well except one, which was either dead or killed; but it was very much torn by the rats. I went into the woods and got trees for them. — Tuesday, June 6th. Now this was rather a day of joy to me, after, it was a day of torment to me — now all was to be got ready to put the birds into the coops also; first one thing was to be done; all in a minute, it was to get boards and nail them on the boat, so that we could put the two sets of coops in it, with them facing each other, so that I could walk between them, to feed and water them on the river. On our way to Gottenburgh, as we were to be there on Thursday at the longest, any one may think what a day it was to me, how to get all this done by the close of night. Now came the grand points. It was to put the birds in order for their long journey, which I had to do by myself. I must say I had not time to think of any thing, but run from one place to the other; but in a word all was the same. Now, at ten o'clock, I got into the house to get those wild birds; they are chiefly hens; I got them all in safety into the coops: seven of the black game and two of the others into one coop, five cocks into another, four cocks into another, seven hens in another, also four cocks: in this manner we put them — seven hens in a coop by themselves; by this I think there are thirty-six birds under the six coops this night, — I may say a wet weary night to me — up to ten o'clock the night wet and cold. I got wet through; but that was little to be wondered at, as we had to carry the six coops full two hundred yards or more. I got a drop of coffee at one; then I took a big coat and a bunch of straw to the boat for my bed; but as ill-luck would have it to be, the rain came in in all parts where poor Larry was to take up his quarters; so by that I was forced to sit under the coops in the best manner I could, and I was as cold as ever I felt in my life: but this was not all; to add to my misery, the birds that I put in the coops were flapping against the coops to that degree, that I thought by the clear daylight I should have them all dead in the coops. I was waiting for daylight to appear. — Wednesday, 7th. As soon as I could take a look at them, it may be expected I did, to my surprise the coops of two of them were almost covered with feathers and blood. I then felt what I never thought of in my life, to see them in such a state; so I took up my blinds off them, and gave them all plenty of boughs and corn; I went up and got them up at the house; I went to the bed-room of Mr. Lloyd, and informed him of the state of them on board; by that he got up in a few minutes. All things were got in order for our voyage down the river, and we left the shore. The birds by this time were become settled, unless we went near them. — Thursday, June 8th. This day we arrived at Gottenburgh. We went to the boats, then to the schooner, which was to take me and my birds to Hull. We got the birds on board; they seemed well pleased to get them, to bring the birds over to England with them, as they said it was the greatest thing that ever was heard of in this life, to see so many of the birds alive and looking well. — Saturday, 10th. This morning they run down to the castle; then we got down to the mouth of the river: the wind was so that we could not get out; but at seven o'clock they weighed anchor, and now I took my last sight of the Swedish shore. — Sunday, 11th. At twelve o'clock they were out in the main ocean fifty-four miles; my birds were all right, they seemed to feed well. — Monday to Wednesday the birds were well. — Thursday I thought one was dying, but it recovered in a short time. — Friday and Saturday all well. — Sunday, 18th. This day the birds in one coop were very angry with each other; but I put them by themselves — wild and tame will not do well in the same coop. This evening we came close under the Yorkshire coast; we were in sight of the fields and houses. — Monday, 19th. We went on shore at Hull; the birds feed well at present. — Wednesday, 21st. I got all my birds on the steamer quite safe: they are all on the quarter-deck. — Thursday, 22d. This day was a fine one; the birds were all well. Nothing happened worth notice on the passage. — Saturday, 24th. This morning I set out from Dundee with a cart and mule, with four more, to the place where the birds came; they were all in the best of health; I got them up to the inn, fed them, and put the coops all in a settled place, and then got all things ready for packing them into my small baskets, that I had brought with me for the purpose from Sweden, and started off with a great many good wishes for our safe arrival. On my arrival at Taymouth Castle I put up my birds as well as I could for the night. — Sunday, 25th. I found the birds as well as I could expect; they all fed well. I must say that there are some of the birds' heads stripped almost of their feathers, striving to get out of the small places where they are cooped up. — Tuesday, 27th. The house intended for the birds being completed, I went and put them all in it; the hens into one end, and the cocks into the other. — Wednesday, 28th. I went to see the birds; the most of them were up at the top of the house, and had eaten of the trees that were there. — Monday, July 3d. To this time the birds were well. On this day I started by the mail-cart for Inverness, where I arrived (having stopped on the road) on the following Saturday. — Thursday, 13th. After an excursion to Sir G. Sinclair's I returned, and arrived this day once more at Perth; set out for Dundee; and, on Saturday 15th, got on board the Forfarshire, from which I was put down at Sheringham in safety on Thursday, the 20th."

2581. *Mr. Buxton observes further*, that "A part of the birds were turned out in the autumn of 1837, and part were kept in a house. In the year 1838 a brace only was reared by the keeper, but two fine broods were seen in the woods. In the summer of 1838 sixteen hens were forwarded to Taymouth; so that in all thirteen cock capercallies and twenty-nine hens have reached Lord Breadalbane. In the spring of 1839, instead of attempting to rear any capercallies, Mr. Guthrie placed the eggs laid by the birds in confinement in the nests of grey hens, who hatched them and brought them up in a wild state. The following extracts from two letters from Mr. Guthrie, Lord Breadalbane's head-keeper, will show how well the experiment has answered. The first is dated Taymouth, July 4th, 1839: — 'I have now to inform you, that I have seen a brood of young capercallies in the large wood behind Taymouth Castle. I saw four young ones, but there might have been more of them, as I did not disturb the place to look for them. They appeared to me to be about twenty days old. The game-hind that looks over that wood saw another brood, with eight young ones in it about a month old. This was two miles from the place where I saw the brood. I have also to inform you that we have forty-nine young capercallies, brought out by the grey hens this season. I saw a brood of young capercallies with a grey hen on the first of this month: there were seven young ones; they were about twelve days old. I tried to rear a few out of hand, but they are not doing very well with me. I will not try them any more after this season.' In a second letter, written Sept. 15. 1839, he says, 'With regard to the capercallies, I think we shall have between sixty and seventy young ones. I am not so sure what number of old ones we have, as some of them might have left their places when turned out. We have still a few of the old ones kept in, in order to have their eggs to put under the grey hens. The most we see of them in a brood is eight or ten, and very often single ones are seen wandering through the woods by themselves.' I am sorry to add, that though Lord Breadalbane has hitherto scrupulously abstained from shooting a single capercallie, and even went so far as to forbid that any black game should be shot in the neighbourhood of Taymouth, for fear that a young capercallie might be killed in mistake, others have not been so scrupulous; two of the birds were shot in the north of Scotland last year, and a hen has been offered this season to a poulterer in Princes-street, Edinburgh. I mention this because I am convinced that these birds cannot generally be established in Scotland unless sportsmen will unite to preserve them for some years to come, and until their numbers are very much increased." In the *Penny Cyclopedia*, art. Capercallie, some notices there stated would imply, that this bird has been found much later than has been stated. We seem also to entertain an erroneous opinion on the difficulty of taming and inducing them to breed in a state of domestication. From Professor Nillson's work, which, on the authority of the Ofwer director of Uhr, states, that "birds at a forge in the province of Dalecarlia were kept together during the winter in a large loft over a barn, and were fed with corn, and got occasionally a change of fresh spruce, fir, pine, and juniper sprigs. Early in the spring they were let out into an inclosure near the house, protected by a high and close fence, in which were several firs and pines, the common trees of the place. In this inclosure they were never disturbed; and during the sitting season no one approached except the person who laid in the meat, which at that time consisted of barley, besides fresh sprigs of the kinds before mentioned. It is an indispensable rule that they shall have full liberty, and remain entirely undisturbed, if the hens are to sit and hatch their young: as soon as this had occurred, and the brood were out, they were removed to the yard, which was also roomy, and so closely fenced, that the young ones could not escape through; and within this fence were hedges and a number of bushes planted. Of the old ones one of the wings was always clipped, to prevent their flying. I have seen several times such broods, both of black game and capercallie, eight to twelve young ones belonging to each hen. They were so tame that, like our common hens, they would run forward when corn was thrown to them. They should always have a good supply of sand and fresh water." Although the learned professor is so eloquent on the domesticity of the capercallie, he yet informs us, that he never becomes so tame and familiar as the blackcock. His natural pugnacity appears to be inherent in him; and, like the turkeycock, will attack persons when in the humour. Even the wild ones in the wood, we are told by the same authority, will dispute the path of those who enter the wood.

SUBSECT. 2. *The Natural History of the Black Grouse.*

2582. *The black grouse* (*Tetrao Tetrix* Linn.). This bird is also more familiarly known among sportsmen as the blackcock, and likewise as black game, as the female is designated the grey hen. Black grouse (*fig.* 402.) are so well described by Mr. Daniel, that we shall make use of some of his notices. "It was," he observes, "abundant in the northern parts of Great Britain, especially in Scotland, but becomes gradually more scarce, owing to various causes: the great improvement in the art of *shooting flying*, the inclosure of many moors and commons, added to the mischief done by burning the heath on the moors in order to fertilise them (which, notwithstanding the *statute* to prevent such fires, it is difficult to convict upon, the *ling* being commonly set on fire in the night, and which will often extend for several miles): this burning is chiefly done in the spring; and many nests, with the old birds upon them, are thereby destroyed. Perhaps the facility of conveying these birds to the metropolis, or great trading towns, by the means of numberless wheel carriages, may likewise contribute much to their scarcity: some are met with in Wales, Cumberland, and the Moors in Yorkshire; the Earl of Uxbridge has a sprinkling in Staffordshire; the Boulderwood and Rhinefield Lodges in the New Forest, Hampshire, afford tolerable plenty. The blackcock is more a forester than even the pheasant, scorning all connection with man, and very rarely tasting the dainties of the stubble; the wild forest is his chief delight. Black game was formerly much more abundant in the New Forest than at present: the race also has the honour, which no other bird can boast, of being protected as royal game. When the chief-justice in Eyre grants his warrants to kill game in the forest, he always excepts the blackcock, together with the red and fallow deer. They are met with in Sussex, and some in Surrey, but are only sparingly scattered here and there, as one advances south; yet neither this bird, nor the ptarmigan, is at present, we believe, found in Ireland, although the red grouse are in plenty among the mountains and bogs of that country. The black grouse are fond of wooded and mountainous situations, and perch like the pheasant: heir food is various,—they eat the bilberry, mountain fruits and berries; and, in the winter, he tops of the heath: in the summer they sometimes descend from the hills to feed on corn.

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BLACK GROUSE.

2583. *The figure and proportions of the male bird are as follow:* — "Length, from one foot en inches to two feet; breadth, two feet nine inches; and in weight is nearly four pounds: he bill is dusky black; the eyes dark blue; below each eye there is a spot of a dirty white colour, and above a larger one of a bright scarlet; the plumage of the whole body is black, glossed over the neck and rump with a shining blue; the coverts of the wings are dusky brown, the greater are white, which extends to the ridge of the wings, forming a pot of that colour upon the shoulder when the wing is closed; the quills are brown, the lower parts and tips of the secondaries are white, forming a bar of white across the wing; here is likewise a spot of white on the bastard wing; the legs and thighs are covered with ark brown, mottled with white feathers; the toes are toothed on the edges, like those of he cock-of-the-wood; the tail consists of sixteen black feathers, and is much forked — the nd of the exterior feather, which bends greatly outward, seems as if cut off; the feathers nder the tail, and inner coverts of the wings, are of a pure white. The female bird of he black game is only one foot six inches long; breadth, two feet six inches; and weighs wo pounds: the eye has the dusky white mark beneath like the male; the head and neck re marked alternately with bars of dull red and black; the breast with dusky black and hite, but the latter predominates; the back, coverts of the wings, and tail, are similar in olour to that of the neck, except the red being deeper; the inner webs of the quill feathers re mottled with black and white; the inner coverts of the wings are white, and a white pot is found on the shoulder of both sexes; the tail is slightly forked, consisting of eighteen feathers, variegated with red and black; under the tail the feathers are white, marked with a few bars of black and orange. The female makes an artless nest on the ground, and lays from six to eight eggs, of a dull yellowish white colour, marked with numbers of very small ferruginous specks, and towards the smaller end with some blotches of the same hue, and hatches late in the summer. The young males quit their mother in the beginning of the winter, and keep in flocks of seven or eight until spring; during that time they inhabit the woods. In their first feathers they resemble their mother, not acquiring their full plumage till near the end of autumn, when it gradually changes, and assumes that bluish black colour which it afterwards retains." (*Rural Sports*, vol. iii. p. 101.)

2584. *It is well known that the "black game,"* like other members of the grouse family, are polygamous, and that in January, February, and March, the plumage of the blackcock assumes a glossy steel blue, which, with his carriage at this season, makes him look like a feathered warrior. Sir William Jardine observes, that "In the warmer sunny days, at the conclusion of winter and commencement of spring, the males after feeding may be seen arranged on some turf fence, rail, or sheep-fold, pluming their wings, expanding their tails, and practising, as it were, their murmuring love-call. If the weather now continue warm, the flocks soon separate, and the males select some conspicuous spot, from whence they endeavour to drive all rivals, and commence to display their arts to allure the female. The places selected at such seasons are generally elevations; the turf inclosure of a former sheep-fold which has been disused, and is now grown over, or some of those beautiful spots of fresh and grassy pasture, which are every where to be seen, and are well known to the inhabitants of a pastoral district. Here, after perhaps many battles have been fought and rivals vanquished, the noble full dressed blackcock takes his stand, commencing at first dawn; and, where the game is abundant, the hill on every side repeats the murmuring call, almost before the utterers can be distinguished. The cocks strut around the spot selected, trailing their wings, inflating the throat and neck, and puffing up the plumage of those parts, and the now brilliant wattle above the eyes, raising and expanding their tail, displaying the beautifully contrasting white under-covers, and imitating, as it were, the attitudes of a little turkey-cock. He is soon heard by the females, who crowd around their lord and master." (*Naturalist's Library*, vol. iv. p. 154.) As the season of incubation advances, the pugnacious mania of the males recedes, and they then, separating themselves from the females, seek shelter among brushwood and large fern-beds to complete their moult, leaving to the female the maternal duties. The nest is made on the ground, and usually in moist situations; but when the young are hatched and thrive, the mother and brood seek Alpine situations, not choosing much heather, but such spots as though lofty are moist, and present rank and luxuriant herbage. The food of the black grouse during the summer consists of the seeds of the herbs, grasses, and berries of Alpine plants, as the cranberry, crowberry, blackberry, &c. In the winter they feed on the fir shoots and the catkins o hazel and birch, which give a peculiar flavour to their flesh; so much so, that the epicure ca determine by the taste whether the blackcock he eats was fatted on the moist moor, or o the Alpine heights. The blackcock, though not equally grand in appearance with th wood grouse, is yet a martial looking bird; and his upper parts dressed in a rich steel blue with the pitchy black of his under parts, when joined with the anomalous form of hi forked tail, make him a very striking object. The female bird is only remarkable by th contrast to be observed between her and the male; and, as justly observed by Sir Willia Jardine, she exhibits the same unobtrusive colours, which run also through the sex in th rest of the group. In her we see, however, a chaste and beautiful arrangement of brown black, and greyish yellow feathers; and, in her likewise, the fork of the tail is slightly indicated. The black grouse will also live and thrive in menageries, but we have few, if an notices of its breeding in confinement. Bewick, who is usually so correct in his descriptive account of habits, personal proportions, and colours of animals, as well as their localities of dwelling, appears not to have been aware that in his time black game (*Tetra Tetrix*) were to be seen as indigenous inhabitants in the south of England. In Wolm Forest, we are told, in days long past, they were to be found in plenty, and still o Leith Hill, on Ashdown in St. Leonard's, in the New and in Bere Forests. They are al yet to be met with on the estates of the Marquis of Anglesea at Beau-Desert, Staffor shire, and likewise near Barnstaple, Devonshire. Sir William Jardine appears to consid that black game have greatly increased within the last few years, spite of the numero sportsmen who pursue them. Experience also, it may be well to note, seems to ha contradicted the received opinion that black grouse drive away the red grouse; and wh we take into the account the well known fact, that their breeding and feeding places a neither of them the same, the fallacy of the opinion becomes apparent. The red grouse an upland bird, and seeks the dry heather; the black grouse, on the contrary, seeks moist localities, and more woody cover, particularly he luxuriates where pine and birch a plentiful. Having full experience before our eyes of the havoc made by poachers a reckless sportsmen on the capercallie of Scotland, can we be too much on the watch prevent marauders from doing the same by the black grouse? We think we cannot.

SUBSECT. 3. *The Red Grouse.*

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RED GROUSE.

2585. *The red grouse* (*Tetrao Scoticus* Linn.) as seen in *fig.* 403. bears the same stamp of nobility with the rest of his congeners. The sporting, as well as the natural history, of these birds is so spiritedly sketched by Sir William Jardine, that we have laid by our own introductory matter to make room for his portraiture of this popular member of the grouse family, and of the delights which attend the pursuit of it, — a pleasure, the remembrance only of which thrills through us, and to enjoy which, were it not for a sense of what we owe to the public as regards this our long promised work, we would, notwithstanding our increased years, have long ere this been on the Moors of Cumberland, or have "hired a hill" for ourselves in Scotland: but to our subject: — "The light air of the early morning of a fine Twelfth," says our authority, "and the free and open, almost unbounded, prospect, exhilarate the spirits; while the boldness of the game upon discovery, erectly uttering his cry of warning to his brood — his vigorous lengthened flight, so long as to create doubts of his being again seen — carry with them a continuation of excitement, long after it is satiated with following the skulking black game, or the more rural one of walking up partridges. But, independent of this claim upon the sportsman, it has another: the red grouse is exclusively confined to the British Islands, and has never been found on any part of the Continent; and it would be much to be regretted if unlimited persecution, or want of preservation, should in after years exterminate this bird, so exclusively national." (*Naturalist's Library*, vol. iv. p. 145.) Alas! as regards this esteemed fowl, how great the change since the time when the Earl of Strathmore's gamekeeper, for a considerable bet, undertook to shoot forty brace of this game upon his lordship's moors in Yorkshire in one day, and by two o'clock of the day he had killed forty-three brace. Is it not a matter of some doubt, whether he could now kill ten brace in the same time? Nevertheless, in many parts of Scotland, red grouse are still plentiful; and there are many estates there, that every year appropriate certain portions for letting off to sportsmen, who usually locate themselves in the neighbourhood for the time being. These portions are called "hills," and each commands a certain rental for the season. We were once solicited to join a party for this purpose, which brings to our recollection a story told us by a gentleman of much respectability among the mercantile community, as was also the individual to whom the story alludes. Both these gentlemen belonged to a grousing party, who hired a hill on which they located themselves, having tents pitched, and being attended by servants, &c. &c. A Mr. K——, one of the party, was particularly fastidious as regarded cleanliness in what he ate; so much so, that not only nausea, but vomition likewise, frequently followed any unpleasant sight. It happened on one of the grousing days that this gentleman, and two others of the party, extending their walk farther than to allow of the possibility of return at the appointed time to dinner, the party entered a mountain hut, or bothy, of a poor family, and being hungry, inquired of the "gude wife" if she could find any thing for them to eat. Her reply was, that she could give them nothing but some slices, to be taken from the carcass of a mountain sheep then hanging up the chimney, enveloped in the smoke of the heather, which were to be toasted. Two of the gentlemen were well pleased to essay mastication on the mountain mutton, which perchance might be a goat. Be that as it may, the next difficulty to get over was what Mr. K——, the squeamish gentleman, was to have: nothing, however, but starvation stared him in the face, until he accidentally cast his eyes on an old hen just then appearing at the door; hope flashed across his mind, and impatiently he inquired whether the fowl ever laid eggs, and whether any were to be procured. Here again the gude woman did her best "to accommodate the gentleman," and having mustered two or three of the old hen's eggs, she consigned them to the frying-pan, which was previously, at the desire of Mr. K——, well washed out, and in a few minutes afterwards the water within it was simmering over the blazing ling, the squeamish sportsman watching most carefully and determinately that no dirt, for that day at least, should defile his stomach. Short-sighted man! how likely are our firmest resolves to be frustrated! the careful woman, although forewarned of the necessity, that whatever this gentleman could have to eat must be clean beyond the possibility of defilement, in her anxiety to know whether the egg was in an eatable state, stooped to the ground, and biting off a stem of the heather, which served as carpet for the mud floor, she first tapped the shell against the edge of the frying-pan, and then inserted the bit of heather half way down the egg, to see the state of the inside. Our friend has frequently told us it was a scene for the pencil of Hogarth. Mr. K——'s stomach turned; he stormed; he almost raved; but at last consoled himself with his own wit, in discovering that it was only in Scotland the inside of an egg could be dirtied. We were not present, but from the respectability of the relator, who was one of the party, we believe the story implicitly.

2586. *The personal description of the red grouse is as follows:* —"Length, fifteen inches; the weight about nineteen ounces: the bill is black; the eyes hazel; the nostrils shaded with small red and black feathers; at the base of the lower bill there is a white spot on each side; the throat is red; each eye is arched with a large naked spot; the body is beautifully mottled with deep red and black, which gives it the appearance of tortoise-shell; the breast and belly are of a purplish hue, crossed with small dusky lines; the tail consists of sixteen feathers, of equal lengths, the four middlemost barred with red, the others black; the quills are dusky; the legs are clothed with soft white feathers down to the claws, which are strong, and of a light colour. The female is somewhat less; the naked skin above each eye is not so conspicuous, and the colours of its plumage, in general, much lighter than those of the male." (*Bewick*, vol. i. p. 301.)

2587. *Red grouse pair in the spring*, and lay from five to ten eggs, either on the bare ground, or, as we have seen them, on a few mosses and a little heather scraped together in some indentation of the soil, and often sheltered by a bush. In many cases no concealment is attempted beyond the sprigs of heather or broken ground around, a certain proof of the original wild nature of the animal. The pairs of red grouse are more natural parents than those of the wood grouse or the black game, the cock bird of each of which separate from their respective hens, and take no more notice of the brood than our farm-yard chanticleer. The young of our present subject are, on the contrary, attended with care, and their battles are resolutely fought for them against the ground vermin and the winged destroyers, as crows, which are known to attempt the destruction of the young birds, but are even more injurious to their eggs. The poults follow the mother the whole summer after the manner of partridges, nor is the cock bird wanting in his attendance on the brood, but it is not observed to be so close. The annual burning of the ling for the benefit of the ground is very hurtful to the increase of the grouse, as it not only prevents some from laying, but also destroys many eggs already laid; and, it is said, not infrequently the hen bird likewise, when sitting hard, is destroyed also.

2588. *The grouse is not irreclaimably a wild bird;* on the contrary, it has even bred in confinement. Mr. Thornhill mentions one which, at a Mr. Grierson's, of Rathfarnham House, county of Dublin, in 1802, produced a clutch of birds. He notices also a Mr. Green, of Green Mount, county of Tipperary, Ireland, who had two brace of grouse for several years, which were so tame that it was a common practice with this gentleman (who was a famous sportsman) to bring the birds and his setters into the parlour together, and divert himself with seeing the dogs set; the birds did not pay the smallest attention to the dogs, or indicate the slightest symptom of a wish to escape." (P. 85.) When we sojourned at Hexham during the summer months, we were much on the extensive moors between that town and Alston, in pursuit of curlew and plover, which are exceedingly abundant there. In our trips it was not infrequent for us to walk up a grouse crouching from almost under our feet, and which mark of confidence produced a determination in us to deserve it, by never firing at one of them; the consequence of which was, that in a little time the grouse on these moors, notwithstanding our constantly shooting at plovers, heeded us very little. We were also equally interested with the intelligence of our dog, which was such, that he likewise left off pointing them, though equally ready to hunt and point other fowl. Sir William Jardine has an interesting remark to the present purpose, on the vast change that has taken place in the habits of grouse bred near cultivated districts; which is, that these birds have learned to depend on the labours of the husbandman for their winter's food; and that, instead of seeking a precarious subsistence during the snow from tender heath-tops, &c. they migrate towards the lower grounds, where hundreds crowd to the stooks, and as the grain there often remains out a considerable portion of the winter, so they escape starvation even in the worst seasons. The whortleberry, in its varieties of black and red, as well as the common heath-berry, are also resources for food for grouse, available during the winter months. It is therefore a great mistake to suppose, that these birds are adverse to eating corn; on the contrary, the whole family are granivorous. We have seen them in the vicinity of Hexham occasionally descend from the high grounds, and shelter themselves among the stubble, both of barley and oats; and, on more than one occasion, when we were engaged in partridge shooting, we have dislodged them from among the sheaves there called stooks, particularly when the weather has been such as to prevent an early carrying of the corn. Indeed, in all grouse localities these birds, when pressed for food, or nipped by boisterous weather, will leave the hills and come down into the strath and glen, and actually sit in rows on the mounds which inclose the fields of the more northern farmers; sometimes they even perch on the bothies, or humble dwellings, of the Highlanders. If we could influence the ardour of the sportsman when he is out, we would request of him to spare both the old cock and the hen bird of every brood. When the cheepers are almost full grown, this may be done without any great sacrifice; and if he had seen so much of the devotion of both parents to their young as we have, we cannot help thinking he would accede to our request. The very self-devotion which makes the parents so ready a mark, by the lingering flight they make to secure the retreat of their brood, should plead for them, and particularly since the sacrifice is not considerable, when the cheepers are now almost arrived at maturity, and consequently are fit prey for the shooter.

Subsect. 4. *The Ptarmigan.*

2589. *The ptarmigan, or white grouse*, as Bewick calls it (*Tetrao Lagopus* Linn.), is the last and the least individual of the British grouse family (*fig.* 404.). It is also not unknown on the American continent, but is more abundant here than there. Bewick describes it very accurately, as being nearly the size of the red grouse It has a black bill, and its summer dress is a pale brown or ash colour, the upper parts of the body mottled with small dusky spots and bars; the bars on the head and neck are somewhat broader, and are mixed with white; the under parts are white, as are also the wings, excepting the shafts of the quills, which are black. In winter it changes to a pure white, except that in the male there is a black line between the bill and the eye; the tail consists of sixteen feathers — the two middle ones are ash coloured in summer and white in winter, the two next slightly marked with white near the ends, the rest are wholly black; the upper tail coverts are long, and almost cover the tail. The white grouse is fond of lofty situations, where it braves the severest cold; it is found in most of the northern parts of Europe, even as far as Greenland. In Britain it is only to be met with on the summits of some of our highest hills, chiefly in the Highlands of Scotland, in the Hebrides and Orkneys, and sometimes, but rarely, on the lofty hills of Cumberland and Wales. Buffon, speaking of this bird, says, it avoids the solar heat, and prefers the biting frosts on the tops of mountains; for, as the snow melts on the sides of the mountains, it constantly ascends, till it gains the summit, where it forms holes, and burrows in the snow. They pair at the same time as the grouse; the female lays eight or ten eggs, which are white, spotted with brown; she makes no nest, but deposits them on the ground. In winter they fly in flocks, and are so little accustomed to the sight of man, that they suffer themselves to be easily taken, either with the snare or gun. They feed on the wild productions of the hills, which sometimes give the flesh a bitter taste, but not unpalatable; it is dark coloured, and, according to M. Buffon, has somewhat the flavour of a hare." (P. 303.) Mr. Pennant says ptarmigans were formerly to be met with on the hills of Westmoreland and Cumberland, and also on the opposite border of Scotland; but all these, except a few solitary pairs occasionally seen on the precipices of Skiddaw, appear to have vanished. Sir William Jardine notices another bird lately brought into this country, known as the *rock ptarmigan*, which, from its close resemblance in plumage, has been confounded with the common ptarmigan. At present it is extremely scarce; and, as we hear very little of it, it is probable that it does not increase. It may be known by its being somewhat smaller in size; and Sir William Jardine tells us that it may be distinguished from the common ptarmigan by the black feathers of the back being cut into upon the edges, with patches of yellow only; which, contrasted with the larger size and grey plumage of the other, serves to render it conspicuous.

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THE PTARMIGAN.

2590. *Mr. Daniel's account of this bird* must likewise interest every sportsman: — "It might be curious to investigate the internal structure of the ptarmigan, and discover the reason why cold seems so necessary to its existence, and why it so carefully shuns the presence of the sun; while almost every animated being longs for his return, and hails his approach as the source of delight, whose benign influence inspires and enlivens all nature. Must we ascribe it to the same causes which make the nocturnal birds retire from his effulgence? Ptarmigans are thinly scattered upon the lofty hills near Keswick in Cumberland, and some few in Wales; they are chiefly met with on the tops of the highest hills, of the Highlands of Scotland, in the Hebrides and Orkneys; they are found on the hill of Ben-lawers, and on Ben-more Mountain, near Loch Tag, inhabiting the very summits amidst the rocks, perching among the grey stones, and during summer are scarcely to be distinguished from them by the similarity of their colour; they seldom take long flights, and never soar aloft, but fly by taking a small circle like pigeons; they are silly birds, and so tame as to bear driving like poultry, and to suffer a stone to be flung at them without their rising; yet, notwithstanding this apparent gentleness of disposition, it is impossible to domesticate them; they refuse to eat when caught, and always die soon afterwards. So heedless are they, that it is not necessary to have a dog to find them. As an edible, they taste so like a grouse as to be scarcely distinguishable (are they not much less sapid? Editor), and keep in summer in small packs; but never, like the grouse, take shelter in the heath, but beneath loose stones. In winter the ptarmigans assemble, and fly in flocks, still preserving their stupid tameness: at that season, when they perceive any person, they remain quiet upon the snow, to avoid being seen; but they are often betrayed by their whiteness, which surpasses the snow itself. They are soon reconciled to the sight of man, and are often caught by presenting bread, or a hat is thrown before them, and a noose slipped round their neck whilst engaged in admiring this new object; or they are dispatched by the blow of a stick behind; in short, they may be destroyed by any device that may be employed against them." A note is appended to this account, too much to our present purpose to be omitted. "The only preservative," says my sporting friend, "that Nature seems to have afforded, is their alighting upon stones so exactly of their colour, as to render it difficult for the eye to discern them. I killed forty-three in one day above Loch-Laggan, which lies between Dalwinnie and Fort Augustus in this district; and also found whistling plover and dottrell; and frequently, at the tops of these mountains, are lakes full of trout and char; in one of these, called Coriadar, about a mile distant from Loch-Laggan, small trout, about three or four inches long, so swarmed, that in fishing with six flies, six of these diminutive trout were often taken at a throw." (*Rural Sports*, vol. iii. p. 114.) To this we would further add, for the consideration of the more philosophic of our readers, what also has been offered by one of that stamp in illustration of the *harmonies of Nature* evinced here: — "Perhaps the changes of plumage in none of the feathered races are more worthy of attention than those which the ptarmigans undergo. Their full summer plumage is of a yellow, more or less inclining to brown, beautifully barred with zigzag lines of black; their winter plumage is pure white, except that the outer tail-feathers, the shafts of the quills, and, in our species, a black streak from the eye to the beak, is apparent. Under these showings, let us first examine the reasons for their change of plumage, and next the mode in which it is conducted. The brown patches of heath on the rocky sides of the mountains assimilate well, in their broken and blended tints, with the summer livery of the ptarmigan; and as concealment from the observation of enemies is one of the laws of Nature, this end is, so far, well answered. But when the mountains are covered with snow, when the whole surface of the country is one wide waste of dazzling white, the brown ptarmigan can only escape the notice of its foes by adopting a corresponding dress; so that, while crouching in the snow, it will scarcely attract the glance of the Iceland falcon, or the snowy owl. Nevertheless, it will appear that the safety which arises from its change of plumage, is neither the sole nor the principal motive for that change. This motive we consider to be the provision against the intensity of the cold accruing to the bird by the transition in question; for it not only happens that the plumage turns to white, but it becomes much fuller, thicker, and more downy; the bill is almost hidden; and the legs become so thickly covered with hair-like feathers, to the very ends of the toes, as to resemble the legs of some well furred quadruped — the hare of the same wild regions, for instance. It is well known that *colour* greatly influences the rate at which bodies either reflect heat, or acquire and part with it; and that objects which do reflect heat the most, part with it the least: now, it has been observed, that "reflection takes place most readily in objects of a white colour, and from such, consequently, heat will radiate with difficulty."... "If two animals, one of a black colour and the other white, be placed in a higher temperature than that of their own body, the heat will enter the one that is black with the greatest rapidity, and elevate its temperature considerably above the other."... But when "these animals are placed in a situation, the temperature of which is considerably lower than their own, the black animal will give out its heat by radiation to every surrounding object colder than itself, and speedily have its temperature reduced; while the white animal will part with its heat by radiation at a much slower rate. The winter colour of the ptarmigan, therefore, in conjunction with its increased fulness of plumage, tends to limit the expenditure of the vital heat generated in the system: some expenditure, however, must and does take place, beyond that of summer; to meet which, the energies of the system are taxed to increase the ratio of its production. This power in the animal system of generating heat, is the principle upon which all animals are enabled to withstand the effect of cold, and to preserve life and health in a low temperature." (*Penny Magazine*, 1835, p. 329.) We ourselves beg to observe, that it has been disputed whether this change was the effect of a moult, or whether the feathers themselves underwent a change; but the matter is now set at rest, and it is proved that Nature goes the shortest way to work, and that also most convenient to the animals; for, as it appears, it is the colour, and not the feathers themselves, which change. Had it been otherwise, it would have left the poor birds exposed to the cold, as well as to their pursuers. A partial moult may take place, but it is known to be but a partial one, from continuous observations made to determine this point. We therefore continue the following extract from the *Penny Magazine*, as probably that most in accordance with truth: — "Recent experiments have proved beyond doubt, that the change is that of the colour, not of the feather (as stated above); at least, the plumage does not undergo a general moult for that purpose. The moult of those birds, which, like the ptarmigan, change their livery, appears to be gradual, in order that the system may not be taxed too much, seeing that it has already to struggle with the debilitating effects of cold. Besides all this, it is scarcely reasonable to suppose that the young ptarmigans should have the brown plumage of their parents to moult, when they have only just assumed it. The rationale then appears to be thus: as the winter approaches the summer dress loses its colour, and gradually passes into white; while, at the same time, an addition of new white feathers increases the fullness of the plumage to keep up vital heat. On the approach of spring the older feathers of the past year are thrown off, their place being supplied by coloured ones; while the white ones that sprang up as the winter set in, gradually gain the hue which was then denied them. Hence, in spring, ptarmigans are seen in a livery irregularly party-coloured, the new feathers having been developed, while the white ones that endure are as yet uncoloured; these having acquired their tints will be moulted in autumn, so that no individual feather undergoes more than one mutation. It will be seen from this, that the moult is never simultaneously performed; but that a partial loss and accession of feathers, except in the depth of winter, is almost constantly taking place." (P. 330.) We claim indulgence from the reader for engaging him so long; but we would fain hope his own wish for investigating the principles on which Nature acts in these cases, will lead him rather to thank than to blame us. We would have every sportsman be a naturalist also; and we would equally wish that the accomplished ornithologist should likewise, in every instance, be a sportsman as well.

2591. *Ptarmigan* are of the intermediate size between the partridge and grouse. "In winter," writes Mr. Dunbar, of Loch-Inver, "they are snow white, with the exception of the quill-tail feathers, which are black. In February they begin to get a few reddish mottled feathers, intermixed with white, which changes more dark every day till the middle of June. The cock is then a speckled black; the hen very much resembling the hen red grouse, except in the quill feathers of the wings, which, in both sexes, differ from the red grouse, as they are always found white. In July the birds undergo a regular moult, and male and female appear with the young in the same dress, which is a spotted blue slate colour. August finds them almost in the same costume. In September they begin to get somewhat lighter in colour. All the blue feathers begin to get white at the tips, becoming every day whiter until they are pure white, which they will be in December. The male may at all seasons be easily distinguished from the female by his having a black streak from eye to bill. On all the high hills in the north of Scotland these birds may be found. For some years back the ptarmigan seem to have suffered as much from disease as the red grouse. Those that I examined had the appearance of disease in the intestines. Since the introduction of sheep in the Highlands, grouse of all kinds have become more scarce; and as a proof that the sheep are injurious to grouse, I know some moors where the grouse have become as plentiful as ever since the proprietors have taken off the sheep. The smearing of sheep, especially with poisonous drugs, no doubt tends to create disease amongst the game. After sheep are smeared, they lie on the heather, and leave that heather saturated with smearing matter. Here the grouse feed, and the tar and other poisonous materials no doubt cause disease of the bowels." The Hudson's Bay ptarmigan, or white partridge, is particularly entitled to notice from the immense numbers which are taken, and also to afford an opportunity of remarking the extra plumage which Providence has allotted it; for in winter every feather, except those of the wings and tail, becomes double, a downy one shooting out from the base of each, which affords an additional protection against the cold of their winter lodging; and this is the only species of grouse, in North America, to which that warm covering for the feet has been given. These birds make their nests on dry ridges on the ground, and lay from nine to eleven eggs powdered with black. Every morning they take a flight into the air directly upwards, to shake the snow from their wings and bodies; they feed morn and eve, and in the middle of the day bask in the sun, which they seem not to dread, like our ptarmigan, calling to one another in the morning with a loud but interrupted note, feeding in the intervals, and then resuming their call. In the beginning of October flocks of two hundred or upwards assemble, and live much among the willows, the tops of which they eat, and thence take the name of *willow partridge*. About the beginning of December they appear less plentiful, retiring from the flats about the settlements on Hudson's Bay, to feed on the berries in the mountains, where, in that month, the snow is less deep than on the low lands, in consequence of the winds sweeping the snow (which, owing to the intense cold, appears like fine powder) from the uplands into the plains. Their flesh is much esteemed by the Europeans at Hudson's Bay; they are as tame as chickens, especially in a mild day: in their wildest state, by being driven about and fired at with gunpowder, they grow so weary by those short flights as very soon to be tame. If the hunters see the birds unexpectedly likely to take a long flight, they imitate the crying of a hawk, which so greatly intimidates them that they instantly settle. Nets twenty feet square fixed to four poles, and supported in front in a perpendicular direction with sticks, is the usual mode adopted to take them; a long line is made fast to these props, the end of which a person holds, who lies concealed at a distance: several people are then employed to drive the birds within reach of the net, which, when pulled down, often covers fifty or sixty. At this time so plentiful are they, that ten thousand are taken for the use of the settlement, from November to the end of April. In former days they must have been infinitely more numerous. Sir Thomas Button relates, that in the winter of 1612 he took eighteen hundred dozen of these and other fowl. This capture may astonish us, but the success and appetite of M. Jeremie and his companions will astonish us still more, who asserts that there were taken and eaten in one winter, between himself and seventy-nine others, 90,000 grouse and 25,000 rabbits, being about 1125 grouse and 312 rabbits per man." (*Ib.* p. 114—118.) It is by viewing the products of Nature in these extended points of view, that our opinions of them are enlarged. It is thus we are taught, that animals of every kind are rendered subservient to the purposes of man, who, by his intelligence, has gained such a dominion over them, as enables him to bend them to his purposes; not, be it observed, by his bodily but by his mental powers; which considerations should teach him, in all cases, so to act as to equalise the waste and supply.

Sect. II. *The Practice of Grouse Shooting.*

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GROUSE SHOOTING PARTY.

2592. *Brother sportsmen,* what think you of our localisation on one of the Scotch grousing hills? (*fig.* 405.) Taking, however, the precaution of the old soldier, who seldom intimates the direction the enemy has taken to other than one of his own party, we do not name the exact spot; but, be assured, if you will but do as we did, — make your way to Edinburgh, and expend a few pounds among the gunmakers, newsvenders, writers (*i. e.* stewards), &c. &c., your inquiries of *grouse shooting quarters,* often called *Hills,* will be satisfactorily answered. Regard our *snuggery.* No! we cannot in honesty call it so; for, according to our united wishes, it opens on a broad expanse of sky, earth, and water; where our whole "renting" can be seen, and thus intruders warned off. If our beds are not in themselves soft, our labours make them so; and if our cooking is inferior to what might be obtained at the Mansion-house, or a West-end club-house, our bracing exercise makes our repast sweet, as the mutual comparison of our walking notes of the day gives a zest to the whole. From our tented canopy some of us in the evening also again stray in pursuit of sport, with a relay of fresh dogs, and on our return our game bags attest that our stroll has been attended with pleasure and gain to ourselves, but with loss and pain to the birds. Another of the party, to vary the scene, probably wends his way to the burn below, and with his rod, line, and fly, secures a dish for the morrow's wants. Dusk arrives — the outer tent coverings are let down — our lamps are lighted — our cigars and our materials for moistening our mortal clay are spread before us — and who is so happy as we? Next year, good reader, if you will apply to our town quarters, we shall be happy to have you as one of the party!

2593. *The Twelfth of August — auspicious day!* says many a sanguine gunner; how fortunate also, says another, that it occurs on a Monday, thereby giving us six days of uninterrupted sporting! True: for ourselves we have nothing to fear; but it may be far otherwise with many a staunch sportsman, who has neglected to secure to himself the privilege to shoot over some preserved ground; for it is ten to one but that, on all the large moors in the vicinity of coal or lead mines, the miners have already been many days out, and, ere this, have sent off to the markets some score dozens of the birds you are in pursuit of, *i. e.* the red grouse. The extensive track of moorland, that lies between the town of Hexhan in Northumberland and Alston in Cumberland, now properly protected, forms a vast preserve for grouse; but as much of it is occupied by coal and lead miners, it follows, we are sorry to say of course, that it furnishes a superabundance of able marauders, who would destroy most of the birds some days before the appointed time. We were on one occasion at Alston two days before the 12th of August, and by favour were shown in an upper room of an inn upwards of a hundred brace of dead grouse intended for the London market. We presume we hardly need observe, that of all shootings that of grouse shooting is the most laborious to both master and dog. As to himself, he can be some judge what he can do; but we would take this early opportunity of remarking, that if he means to pursue the sport ardently, he should be furnished with two brace of dogs at least, whether of setters, pointers, or spaniels: but of this more anon.

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SCOURING THE MOORS.

Subsect. 1. *Grousing Localities.*

2594. *Grouse shooting localities.* The black grouse used to be common in the New Forest in Hampshire, and in some parts of Devonshire, Derbyshire, and Staffordshire; but we doubt whether any of the red breed are now to be found in either of these places. Yorkshire is the nearest English locality where this bird is yet in tolerable plenty; but the ravages of the lead miners have here likewise much lessened the number; and although great pains have been taken to restrain these gentry, they have continued to evade them all. It is true that the strenuous attempts of some noblemen and great landowners have occasionally, for a time, checked the practice; but it has never been entirely put a stop to, and it is very doubtful whether it ever will. On one occasion, we are told, a party of miners came in contact with Lord Stanley at Mucor; and against one of the number, a notorious character, his lordship had instituted some legal proceedings. This fellow, addressing his lordship, observed, that if the proceedings were immediately stayed, they would abstain from trespassing on his lordship. And this was no sooner agreed to than the whole party passed over to the moors of Legh Keck, Esq., where, after shooting for some time, they were met by that gentleman, who was also shooting. They had the daring effrontery to ask him to furnish them with a little gunpowder, as their own was exhausted: nor did they stop here — they even picked up the birds which he shot; and at length marched off in triumph, carrying with them one hundred brace of grouse perhaps, or more. The following story, likewise related in the *Annals of Sporting*, now discontinued, offers an amusing anecdote of the Yorkshire grouse poacher, where the individual here alluded to might truly in the end sing, "Yorkshire! Yorkshire! but I be Yorkshire too!"—"A short time prior to the commencement of the grousing season, a police-officer from London took up his abode in the neighbourhood of Bowes in Yorkshire, in the character of a sportsman, having several pointers, which he exercised on the moors, as is usual on such occasions. He made it his particular object to become acquainted with the poachers, with whom, by the 12th of August, he was on terms of particular intimacy. It had been agreed between the officer and the poachers that they should shoot together on the 12th, should convey their game to Manchester, and divide the illegitimate fruits of their expedition. When the appointed time arrived, the officer appeared with his arm in a sling, unable, of course, to shoot, but offering the use of his horse and gig to convey the illicit merchandise to its destination. One of the poachers was accordingly dispatched, and was followed by the officer and an assistant. By some means the latter reached the inn at Catterick Bridge before the poacher and the grouse-laden gig, without being aware that they had passed their object; and on inquiring of the landlord, they concluded that he had already arrived, and had retired to bed. Full of this idea, the officer and his assistant betook themselves to comfortable repose, intending to rise before their prospective prisoner, and secure him at the moment of starting. Shortly afterwards, however, the identical poacher did arrive; and having, from some circumstance or other, had his suspicions awakened, he continued his journey, and distanced his pursuers. The latter proceeded to Manchester in time to fix an innkeeper or two with the penalties; but the principal culprit, the main object of their attention, got paid for the game, eluded their pursuit, and took refuge in the bosom of his friends, amidst the lead mines of the north." (Vol. ii. p. 79.)

2595. *Wales presents some grousing country.* The range known as the Black Mountains, which divides the counties of Hereford and Brecknock, affords some tolerably good spots for this sport, particularly near to their junction with Monmouthshire. The Skyrrid Vawr or Holy Mountain, and the Blorenge, used to offer very good grousing, but the approaches to the best grounds are sometimes very difficult to reach, and indeed are only practicable by following the excavations made by mountain torrents, which, forcing their way through the calcareous strata, leave paths by which the hardy and determined sportsman may attain his prey. Having in early life passed some years in Wales, with a maternal relation, we naturally feel pleasure when we meet with any interesting matter connected with this locality, be it of what kind it will. But when it points not only at the picturesque beauties of the country, but also details scenes connected with subjects so much to our taste as grousing, we cannot pass it by without some notice; and the less, as the matter here detailed presents a faithful picture of what is enacted annually on the night previous to the joyous morn which ushers in the lawful attack on the red grouse. Our narrator, it appears, was one of a party destined to meet in the Court-house of the old village of Michael Church, which, those who know it, must be aware is an ancient elevation, raised during the reign of Elizabeth, having the fantastic roof of that period, together with the pointed gables and quaint windows, from which, when a peep could be obtained through the tall trees, not yet stripped of their verdure, might be seen a faint outline of towering Gadda — a vast prominence which even overlooks the Black Mountains. Our sportsman having made his *entrée*, and having been most kindly received into his quarters, and introduced to the party he was to shoot with the next day, he tells us that, sportsmanlike, after a little parley he at length, excited by curiosity, left his company, and stole to the great kitchen, where, as he expected, he met with a group of the subordinate actors engaged for the forthcoming morn. One who enacted the varied parts of gamekeeper on his master's account, and farmer on his own, particularly engaged our traveller's attention. He being questioned as to the prospect for the morrow's sport, replied in the true Welsh accent — ''t will be a famous day, Sir; there be much plenty of birds, and I was never remember them so strong — only one pack of cheepers on the hills.' "Pleased with this information," continues our narrator, "but more so with the man, after taking a look out upon the night, which was beautifully clear, carefully putting together my gun, and looking that all the paraphernalia of grousing warfare was ready against the morrow, I retired early, and quietly committed myself to sleep. It had been already arranged that the party should be assembled at breakfast by one o'clock on the following morning; and, that every thing might be 'in keeping' upon the occasion, we were to be awoke, not by the ringing of a bell, but the discharge of a double-barrelled gun by the keeper in a walled court behind the house, the reverberations of which proved almost deafening." On hearing this, as may be supposed, our hero sprang up, and was, according to his own statement, the first of the party down; and after having made an excellent breakfast, topped by a little *eau-de-vie*, was soon mounted for the field, and a ride of five miles carried him and his friends to the shooting ground. "Here," he says, "the old hill-keeper, who had so much interested us the evening before, saluted us with 'Good morning, gentlemen! the birds have been crowing for you this long time.' He likewise now became our guide for a considerable distance, sometimes up hills, at others in narrow tracks, which ran diagonally along the sides of these hills, until having reached the summit of the whole, our party were surprised to find a broad table-land as far as the fog permitted them to see. Having held a short but animated conversation whilst loading our guns, &c. we divided into small parties, the direction of our respective ranges being apportioned, and the place fixed where we were to meet after the first beat." (*Sporting Magazine* for August, 1838, p. 311.) Our intention being now fulfilled, which was that of showing some of the difficulties that the ardent grouser must expect to meet with, we stop, not only because our end is gained, but also in justice to the worthy proprietress of the work quoted from: but the reader, in justice to himself, should not stop here; but if at all interested in the subject, should apply to the original, for one of the most descriptive and faithful pictures of grousing at the commencement of the season to be met with.

2596. *Ireland also is a grousing country*, as Mr. Thornhill tells us; and we can bear testimony to the full correctness of his statement. We passed a twelvemonth there; but it being during the Rebellion, we were more engaged in making preparations to shoot the rebel natives than the native grouse; but although we saw very little of this game during our sojourn there, we heard much of it. From Mr. Thornhill we learn, however, that the numbers are few compared with those of England and Scotland; in proof of which he has, he tells us, seen more of them on the mountains about Langholm in Scotland in one day, than ever he saw in Ireland in twenty, although he has been on the best preserved mountains in that country, which belong to the Earl of Kingston; they are on the south side of the great Galty Mountains, near Mitchell's Town, in the counties of Cork, Limerick, and Tipperary, and are allowed to be the best for grousing in Ireland. These large mountains run sixteen miles from east to west, being the property of several noblemen and gentlemen, and are all good for shooting. Lords Massey and Cahir own part of them; but the Honourable Massey Dawson's part, on the north side, is by far the best for grousing. The sporting lodges belonging to him and the Earl of Kingston are worthy of notice, and therefore our informant thinks a description of them will not be unacceptable. "The Earl of Kingston's ground is situated in the centre, and quite enveloped by the Galty Mountains; and at the foot of it a house, named Galtymore; being in the heart of the mountains, it shows that the late Lord Kingston, who built it, was not only a man of great taste, but a great farmer. It lies on the edge of a winding hill, to which there is a fine road, that cost an immense sum of money, as it runs through bogs and morasses. Under the house there is one of the best trout streams in the world; the hills all round are planted with fir, beech, oak, and other trees; and, astonishing to relate, the ground adjoining, which a few years back was but heath, bogs, and rocks, is now as fine meadow ground as any in the low lands. The sportsman is delighted on breaking in on this beautiful and highly cultivated retreat; and the more he views it, the more he is astonished." Mr. Thornhill being, after his fashion, very circumstantial, tells us that he has been at this box with the late Lord Kingston, and while sitting in the parlour, has seen grouse within twenty yards of the window; it then consisted of one large parlour, two bed-rooms, and every other requisite. "As it was intended for shooting parties only, the beds were admirably contrived, as they folded up into large arm-chairs, with covers to them, and had wheels to roll them upon from one room to another; they were very convenient, for often, after too much claret (which was pushed briskly about after the day's sport), the sportsman, if he chose, might sleep in them as they were. These chairs were all run into the rooms at night by each gentleman's servant, and were made up into beds in a few minutes. On the north side, in the beautiful glen of Aherlow, stands Ballinacourty, where almost every kind of game abounds: the fallow deer go at large in great numbers, and red deer, stags, hinds, grouse, hares, and partridges, are in the greatest plenty: there is not a spot in Ireland so remarkable for cock shooting, with the addition of a capital river for both trout and salmon, within a stone's throw of the house: the greatest part of this beautiful glen belongs to the Honourable Massey Dawson. It is in this part of the world that the finest pack of buckhounds in Europe were kept by Lord Massey, who has some of them to this day: but they have much dwindled in their size within these last few years: they were the largest, to appearance, that were ever seen; and to view them, and suppose it would be possible for such brutes to run a deer down, would be almost ridiculous; but the compiler, who was for many years in the habit of hunting with them, can assure his readers that he has been at as severe hunts with them as with his own foxhounds: their noses are so uncommonly fine, that the late Lord Massey used to run a stag for the whole day; and, at the advance of night, has been known to drive a stake into the ground, and draw off the hounds, and coming next morning to the same place, has laid them on, which went off at full cry, and ran into him towards the middle of the day. These dogs, if going at their *top* speed, and in full cry, could be stopped by the sound of the horn, or a crack of the whip, when within hearing of either. The Kerry, Wicklow, Clogheen, Nenagh, and all the north country mountains, have plenty of grouse on them, and are in general well preserved." (P. 85.) Here also we can bear witness to the truth of Mr. Thornhill's report by numerous testimonies, but particularly by an account given us by a sporting gentleman of property of the county of Wicklow, with whom we became acquainted by meeting each other when salmon fishing on the banks of the Boyne. He being, like ourselves, passionately fond of sketching, was warm in his praise of the coast scenery of Wicklow, which he described, in glowing colours, as presenting lofty mountains, divided by fertile and richly wooded glens, &c. &c. Particularly, he dwelt on the sublimity of the Powerscourt Waterfall (*fig.* 407.), where the vast sheets of descending waters fell from a height of 360 feet, amid hanging hills; and where, in the vast basin below, most excellent trout fishing presented itself; nor was he less eloquent on the mountainous tracts above, where, as he stated, the grousing and woodcock shooting in their seasons afford the sportsman most abundant diversion. Ireland is indeed the country for field sporting of every description; and although we will not say that poaching is not practised there, it certainly is not carried on with the audacity which characterises it in some parts of England. No miners sweep off the grouse by hundreds in a day; nor are there irresistible confederacies formed to destroy all before them. By birthright and by early practice Pat is something of a sportsman, for he is a child of Nature, and every living being is Pat's brother as long as the two think alike; when they differ the chances are, that they go to loggerheads, fight as long as they can, and then shake hands, having thrashed each other into perfect good fellowship. If Pat were as inclined to listen to reason, as he is determined to have every thing his own way, he would be a very pleasant companion.

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POWERSCOURT WATERFALL.

2597. *The grousing of England, Wales, and Scotland*, is however vastly superior to that of Ireland, even according to the admission of this gentleman, as well as that of Mr. Thornhill, who says, " The extent of mountains you may range on in Westmoreland, belonging to Lord Lowther, is immense: you can walk for thirty miles without getting off his moors; and often, if you have not a guide, you stand a good chance of not only losing yourself, but remaining on the moors all night. It is, therefore, frequently requisite to have a pocket compass, to enable you to find your way; for although the morning you go out in may be a fine one, yet, in the course of a few hours, you may be enveloped in a fog, and sometimes so suddenly, as not to allow you time to get home before you are lost." (*Shooting Directory*, p. 88.) Mr. Thornhill enlightens us also on the methods of preserving grouse when shot for the table :—" If you wish to send your game to any distance, never draw it, particularly a grouse; that is, do not follow the usual directions of taking out the entrails. The best mode is not to pack them until they are perfectly dry. First of all procure bladders, and put a brace or more in one, if the bladder will contain them; tie the bladder tight round the neck, and seal it with sealing-wax, to prevent the air from getting in; and in that state, if they are put into boxes, they will keep for three weeks, if required. The compiler tried this experiment last year, and found that it answered better than any mode he had ever before made use of: he sent a gentleman some game to London from Cumberland, packed as described; and the gentleman not being at home, it lay in the box until his return, which was fifteen days after its arrival; and this gentleman assured him that he was surprised to find, on eating it, that it was as good as if killed only the day before, and was perfectly sweet, although the distance it went was nearly three hundred miles." (*Ibid.*) Colonel Hawker, if we mistake not, says, " To send grouse any distance, put some pepper to the parts where they have been shot, as well as into their mouths, and then pack them, carefully separated from each other, and kept as air-tight as possible in boxes of hops." (P. 161. 7th ed.) Having made this *détour*, we will now recross the island towards some of those champaign counties where Nature is alternately wild and cultivated, its more barren tracts being the resort of still wilder winged tribes, and particularly of grouse. It is such localities, when strictly preserved, that yield endless stores of amusement to the sportsman, and where alone may yet be found grousing sufficient for most of the English who migrate from the southern parts of our island.

2598. *English shooters in pursuit of grouse*, and not having invitations to any particular grousing grounds, usually direct their course towards some of the northern counties, from Staffordshire to the Tweed, or from Whitby to Whitehaven. In our own shooting days, we well remember that much of the country between Barnard Castle and Appleby was open ground, and was then well stocked with grouse, indeed far more so than at the present time. Not but even then poachers committed devastations; but, in later times, the miners from both the coal and lead mines of Teesdale and Weardale have regularly congregated in great numbers, and for several days before the legal time have destroyed so many as to leave little sport for others. Nor is there, in these lawless times, much reason to expect it will ever be otherwise; on the contrary, eventually, the grouse will be wholly destroyed, as has happened in other counties, where a lawless population and extensive cultivation have left little room for any other animals than man and his kind. A writer in the *New Sporting Magazine* for September, 1832, informs us, that about three years before the period at which he writes, "he met a body of eighteen upon the moors between Arkindale and Tanhill, to the west of Keeth, who were proceeding as coolly and as carelessly as if each had his certificate in his pocket. They had been in that neighbourhood for two days preceding; and the day after they advanced about ten miles farther south, to the grounds of the Duke of Leeds, and actually besieged his Grace in the house where he was staying, and stipulated for two days' uninterrupted sporting, under a threat of frightening all the birds from the moors should their demand be not complied with." The same writer remarks that, "It is said of late years, since the miners in some parts of Durham and Cumberland have not been fully employed, several of them have received leave of absence from their regular occupation about the commencement of grouse shooting, in order to follow, for two or three weeks, the more profitable trade of poaching. If this be true — and it has been confidently and currently reported, with the name of the manager who indirectly, if not openly, encouraged the men to absent themselves — gentlemen who own or rent those moors, and who expend considerable sums in the preservation of the game, should make representation to the owners of the mines of the shameful conduct of their agents, who thus lend themselves to the demoralisation of the workmen." (*Ibid.* p. 347.) It is much the same also in other northern localities, from Staffordshire to the Tweed, and from Whitby to Whitehaven. Some years ago much open ground was to be found in this extensive sweep, and much good shooting likewise. Stainmore is a vast tract, much of which belonged to Lord Thanet, an amiable nobleman, who, preferring friends to foes, was by no means strict. The intervening portions also of this extensive range are many of them accessible by application to the principal owners, consequently vast numbers of sportsmen resort to the circumjacent towns and villages, among which Bowes was then considered as a principal head-quarter. In this extensive beat likewise, we may observe, for the benefit of the wearied, the lame, and the lazy, that much of the ground can be ridden over, which, to the aforesaid, is an important feature in the prospect. Kirby Lonsdale, Brough, Bowes, Sedbergh, Kirkby Stephen, and the Old Spittal, are also sporting locations for the grousers to domesticate themselves in. Proceeding northwards, many excellent preserves still present themselves, a few only of which are open ground; but a suitable introduction will, in most instances, insure the applicant one, two, or more days' shooting, according to circumstances. As this locality has so long continued a favourite resort of grousing devotees, we would recommend to those interested in the matter, a reference to the sporting periodicals for more full and authentic information than our limits will allow us to give. In the *Old Sporting Magazine* are some amusing accounts of the perils, the toils, and the delights, which have been experienced in this northern tour. Nor is the *New Sporting Magazine* behind its competitor in the entertainment and instruction which it offers on the same head, as will be seen by a reference to No. xvii. where the reader will find seven pages well worthy his attention, if he has any inclination to grousing travel. One piece of information it gives, which will be peculiarly interesting to many:— "In the immediate neighbourhood of Bowes, the privilege of shooting over the common there has been let for these three or four last years to fifty subscribers at 10*l.* each." On this spot, in 1829, the same informant tells us, a gentleman, after three almost blank days, bagged eighteen brace on the fourth; which fact every young grouse shooter should keep in mind, which will prevent him making up his mind as to his probability of success from the first, or even the second, day's shooting.

2599. *Hexham in Northumberland* is a large town, watered by the noble river Tyne, and is surrounded by grousing grounds that are tolerably productive; at least they were so when we resided there. Leaving this, and stretching westward towards Cumberland, and crossing into Durham, we find moors that are in the hands of different proprietors, among whom we may notice the bishop, Dean and Chapter of Durham, Mr. Beaumont, &c. &c. These grounds, as far as our experience goes, vary; and generally they are well preserved. Mr. Hollond, the gunmaker of London, rents some of the Dean and Chapter of Durham, over which shooting is let by ticket (1857). As it was only on two occasions that chance led us in this direction, and at which times our stay was confined to two or three days only, we do not pretend to give any correct account of the actual state of grousing here; but should any further information be sought for as regards these particular localities, we would recommend the reader to a very excellent, and, as we believe, authentic account in the *New Sporting Magazine*, vol. ii. p. 99., which is rendered further interesting by the history of a self-devoted hermit, who resided, or rather vegetated, in an excavation (for it can hardly be called a hovel), not far from the road-side leading to Edmonbyers.

2600. *Scotland as a grousing locality.* — There is no question about the super-excellence of Scotland over every other part of Great Britain for the breeding and rearing of grouse. In the Highlands the lairds let their hills for grouse shooting; and such is the rage for this sport, that they are enabled to exact from sportsmen very considerable sums for shooting quarters, particularly from the more monied Southerns. Railways, and the example of the

Prince Consort, with specious advertisements in the newspapers, have drawn many down who have paid very dearly for their whistles, and if the owners wish to maintain their rents they must keep their grounds better stocked with game than many of them have been of late years. Their shepherds should be strictly cautioned to prevent, as much as lies in their power, the sheep from treading on the eggs, which they are apt to do when in their browsings they dislodge the old birds when close sitting, which, though it is not very easy to do, so bent are they on incubation, yet we do know it is done. They must, above all, strictly enjoin each shepherd, under penalty of losing his situation, that he back-break his dog. By back-break (a term we learned from an old shepherd favourable to grouse), we mean, to teach them never to worry the cheepers, which they are too apt to do, and having caught one, a slight but fatal gripe is given, and the dog sets off to serve others of the brood in the same way. The poults can take care of themselves. We should say to the mountain lairds, be assured that large sheep flocks and well-stocked parks of grouse are never likely to exist together, but more from the disturbance of the shepherd than the sheep. For several seasons past we have met with zealots in grouse shooting, who have relinquished the Highland hired shooting for these reasons, because the landlords did little to preserve their grouse, and therefore they would do nothing further to line their pockets. The small farmers, likewise, should protect the grouse, individually and generally, and not shoot them in masses, by raking them with a long heavy gun as they sit on their hills, or cluster among the corn stooks.

2601. *Now that steam has annihilated distance*, and a sportsman can breakfast in London and dine in Edinburgh, a moor or a share in a moor or forest in the Highlands has become a sort of fashionable necessity, which the development of Scotch railways further fosters. Steamers, too, aid the progress of those who are nautically inclined, and coaches further assist the inland route. Here nature is found in her wildest, grandest form, and the feathered tribe, and fishes also, in the greatest perfection. Ptarmigan, grouse, black game, white hares, and other wild animals rare to Englishmen, are to be met with, and accommodation and facilities of communication are improving every year. In Cromartie, both red and black grouse are to be met with in plenty. Here, should any circumstance deprive the traveller of grousing sport, he may still amuse himself by shooting the rock pigeons which abound among the crags. Summer birds also of other descriptions will offer themselves to his notice; even the eagle will occasionally present himself, and the falcon of true nobility may be seen bearing away his prey to his young : nor will the Alpine hare refuse to cross his path, with other northern animals of various kinds. Still let not ingenuous youth embark in any Scotch ventures without due caution and inquiry. Neither let him embark in the more limited risk of a season ticket on a moor, the capabilities of which he is unacquainted with.

2602. *We would recommend the novice never to visit any extensive moors* for the purpose of grouse shooting without a companion, or a guide who perfectly understands the nature of the locality to be visited, and the required preparations to be made for it, in the way of dogs, guns, ammunition, and personal appointments, &c. &c. One who does not do thus, often meets with many mortifications and disappointments in his high-raised expectations. We have heard of one who, by some recommendation, having determined to fix his shooting quarters at a village in the precincts of the grousing grounds of the Bishop of Durham, was joined by another grouser, equally experienced and intelligent. The following memorandum of the united efforts of both, as we suppose, was found on the return : — "Retired to rest at eight in the evening, rose at half-past twelve, and having breakfasted, set off by starlight to our grounds; but, as when we arrived there it was still starlight, we sat down on the heather, flattering ourselves that as soon as it was light, our strength being recruited, we should be the better prepared for the work of destruction we contemplated. A dense fog, however, succeeded the dawn, which hid every object from our sight, although our ears were tantalised not only with the chattering of the birds, but with the sound also of many shooters in pursuit of them on the other side of the mountain, less obscured by fog. Their guns, as we distincly heard, were in full practice; but we knew too little of the country, and were too tired, to follow them ; so we returned to our quarters, purchased a few young grouse (poults we suppose) at a great price, packed up our traps, sent away Ponto by the waggon, and took ourselves off by the coach,—*risum teneatis amici.*" In the detail of red grouse, black grouse, and ptarmigan shooting, which follows, the reader will be presented with many pictures, which bring him into more minute acquaintance with this romantic district. Here Nature appears to wear her sternest features, yet here the sportsman revels in the joys of the chase; for here the lofty precipices swarm with ptarmigan, whose snowy pinions rival the snow itself. A little lower down, on the same mountain, he meets with the blackcock; and, if very far north, he may see the red-deer stalked, and the roebuck pursued. The eagle and the hawk will hover around him ; and, if he be fond of the sublime, he may here indulge himself in viewing Nature in her wildest dress, and look with veneration on that Providence who has given even to these regions charms sufficient to call the southroon from his home to visit them.

Subsect. 2. *Red Grouse Shooting.*

2603. *Red grouse shooting* (*fig.* 408.) is one of the highest marks of the sportsman's ambition; and as by law as well as custom he can follow the red grouse some days before he can attack the black grouse, we will accompany him, in our mind's eye at least, to scenes we have often witnessed, and over spots where our memory delights to dwell. We will suppose our sportsman, even if it be his first trip to the moors, to have taken care to be well provided with all the materials necessary for the war he is going to carry on against the winged tribes. His guns will have been his first consideration; we say guns, for we have seen more than one instance where the sportsman's joys have been seriously interrupted by the breaking of the stock in a fall; the fracture of a spring now and then occurs; and it has happened that a barrel has burst; which misfortunes can be best guarded against by carrying two guns; and, we would say, take a double and a single one. We indeed, as a prudent precaution, say, take duplicates of all your materials, particularly if you are going to cross the border, where the distance to resupply yourself may take some days ere such supply can reach you. It is not every shooting ground that can be ridden over; indeed, the average is against it in point of number, and still more in point of safety. We rented some grousing grounds near Brough in Westmoreland, the ascents to some of which were so precipitous, that we could only make our way up the gullies and watercourses for more than three miles to our point. As we were too enthusiastic in the sport, particularly in the first part of the season, not to be every day engaged in it, we employed a mule in carrying us up to our ground; and the same plan we would strongly recommend to other sportsmen thus situated; for mules, it is well known, are hardy and remarkably safe. Our dogs we sent onwards even before it was light, without any other breakfast than half a pint of thick water-gruel, they having had a substantial meat supper the evening before. Some flesh pellets and oaten cakes were also taken by our attendant, for their occasional refreshment on the ground; for unless you have a relay of dogs to divide into the morning and afternoon shooting, you must husband the strength of the brace or leash you hunt. When three dogs were employed, our attendant used to take one up, while we ranged with two, which are amply sufficient for any two or three gunners; and not more than that number should be on one beat. Be it remembered by the sportsman shooting on open ground, or moors much frequented, that unpleasant collision in beating can hardly be avoided, as we have often experienced; and nothing but inherent good feeling and true politeness can smooth down the irritability, and sometimes the consequences likewise, engendered thereby. It was to steer clear of these disagreeables that we, in most cases after our first grousing excursion, either begged liberty to shoot, or hired ground for it, purposely that we might enjoy our sport without the interruption of strangers.

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RED GROUSE SHOOTING.

2604. *On the subject of the dogs used in grousing*, Mr. Lascelles, an ingenious writer and an excellent sportsman, personally known to us, and known also to others by his *Familiar Letters on Sporting*, which work, although it was cut short by untoward circumstances, yet, as far as it went, was highly creditable to him as a writer; and had it been continued throughout, would have established his credit as an author, as well as somewhat remunerated him by its returns. This gentleman, a downright zealot in grousing, was a very good judge of sporting dogs; and, when we knew him, he possessed some very crack English pointers, which we are not surprised that he should use on the moors: but it does somewhat surprise us, that he should have, in his *grousing tour*, become so enamoured of some Russian pointers he met with, which he tells us he considered as the most excellent grousing dogs he had ever seen. As his account of these dogs, and his opinions of their qualities, do not tally either with our own or that of others, we offer what he says on them to the reader's notice. Mr. Lascelles, we believe, almost every season made some sporting engagements on an extensive scale. It was on an occasion of this kind, when taking possession of the grousing quarters which himself and friends had just entered on, that the scenes and matter which follows arose: — "We are situated," he says in a letter to a friend, "in the very heart of good shooting, and within twenty yards of the door may be found nearly as many broods of moor game. From the elevated position of our quarters, we have an almost uninterrupted view on every side, over ten miles of country; so that no poacher, or other unlicensed intruder, can possibly trespass unobserved, as, by the assistance of a good glass, we can at any time make the discovery. We have two regular keepers and four under ones, and I believe they are all as honest as circumstances will admit of; the two former live in the house, and are each of them mechanics enough to repair a gun in case of necessity; for this purpose they have a small forge, with the usual apparatus adjoining. The four under-keepers live at some distance, and in opposite directions, and come every morning to attend us for the day; in the evening, after shooting, they return; and by this means we have always a person on the look-out for the detection of marauders. On three sides of ours, the neighbouring manors are carefully protected; but that on the fourth is an open one, which of course necessarily requires more immediate attention; for this purpose one of the head-keepers always accompanies the party who shoots in that quarter, that, in case of necessity, his authority may be more immediately applied; the other remains at home to attend to the dogs, which are also left there, and have the food and every thing else ready for the reception of the others which are at work. In our way here, we stopped one night at ——, and as our landlord was something of a sportsman, he thought it necessary, I suppose, considering the quality of his guests, to dilate more than usual upon his favourite topic. There is generally one inconvenience attending a conversation of this kind, that, as you perhaps pay very little attention to what is said, you give a person every cause to believe that all he advances is perfectly consistent with reason and rule, till he feels so certain of the infallibility of his own doctrine, as to oblige you, probably much against your real inclination, to become a subscribing witness to his maxims. It was thus in the present instance; for, after running on an hour, without a single interruption, about the excellence of his pointers and spaniels, we at length agreed, *carpere viam*, to attend him with the former on the following morning. It was seven when we started, and the distance to the nearest good moors at least eight miles; so that the sun had risen considerably in his orbit, and made our host appear much warmer in the cause than he had originally intended. I own I had little hopes of being gratified, for the dogs were all of the Russian breed, and with coats longer than any I had seen; their condition was also much against them, considering the heat of the weather. But experience is the best proof of excellence, and I was not only agreeably but gladly surprised, for I immediately purchased a brace: they are perfectly steady, with good noses, and high rangers, and feel less inclined for water than any smooth pointer I have. It seems a very erroneous idea, and it is one also which gains daily belief, that this dog should suffer more from heat than our native breed, merely because the opinion is warranted by appearance. The effects of constitution are here very strikingly displayed; the cold and warmth of Russia are equally oppressive; and Nature has, with a munificence truly wonderful, given to the most humble of her creatures the rare power of sustaining the severity of the one, without, in any material degree, suffering from the laxative effects of the other. It is on this account that emigration has so little effect upon the good qualities of a Russian pointer; for probably, whilst another dog would sink beneath the influence and change of climate, he rises superior to restraint, and braves, with equal indifference, the snows of Zembla and the balmy zephyrs of Peru. I must however, notwithstanding all these rare qualifications, still incline to my favourite breed; and only in the absence of my two rivals, Flirt and Fop, already spoken of, would I be merely content with the services of Bumper and Bacchus. Names more decidedly appropriate to the calling of our host could not have been imagined; and it was, perhaps, a fortunate circumstance for us, that he had not better consulted *the honour* of his deity. In one instance these dogs bear some resemblance to the Spanish breed, being able to hunt without water; but in others, particularly voracity of appetite, they widely differ. A friend of mine, a great sportsman, who possesses a real Don, has been kind enough to give me a description of his properties, which for your satisfaction I will now transmit to you. His remarks, you will perceive, are dictated partly by the object of my question, viz. What resemblance he bore to Woollett's celebrated engraving of the same species of animal? — 'In his colour,' continues Mr. Lascelles to his friend 'he is spotted, as you have seen Danes, with this difference, that where their spots are black his are similar to those of a tortoise-shell cat: on his body they are of various sizes, but on his head very small and numerous, the ground of all being white. His nose not black, but of a flesh-colour; his skin delicate and very soft to the touch, more resembling very fine wool than hair, and probably the result of a warmer climate; his stern not quite so fine, as if he possessed some distant cross of a setter. His head by no means resembles the general idea o a Spanish pointer, heavy, like a bloodhound, but is particularly light and fine, showing al the breeding possible, especially in his ears. In height he stands twenty-two inches; from the nose to the end of the stern, which I think has been shortened, three feet three inches and from that point also to the setting on of the latter, two feet two inches; thus you wil perceive that he is rather a small dog than otherwise, without the least lumber; he has excellent bone, with round, even, and sound feet. I do not recollect him ever foot-sore. His shoulders are somewhat faulty, being too upright, and he appears in consequence to gallop rather wide before; but I have observed him to hunt longer, and bear more fatigue, than any dog that I have been in the practice of hunting with him, never having been deprived of his services, after once broken to the gun, for a single day, frequently riding, at no easy pace, six miles to my ground, and this in September, for several days together; indeed, I never fancied sport without Madrid. His pace, which is fast, he seldom varies; and he is always at work, carrying his head in one position, lofty; his action when pointing is perfectly upright; his stern straight and extended, and his head a little higher than when ranging; he never raises a foot, nor in any degree approaches the ground with his body; this attitude, which is altogether handsome, I do not recollect him ever deviating from. His nose is certainly superior to that of any other dog in my possession, and still more so in warm weather; but where I find him most useful is, in his being able to hunt without water, which he will do through the hottest day. He was never on the moors; but, from his preferring rather a wide range, and being an excellent footer, I think he would be serviceable. I one day last summer shot four couples and a half of young wild ducks to him, all of whom he pointed. I believe he stood at the first bird he found, but from the violence of his temper he was difficult to reduce to order, always flying at the face of the person correcting him; but, when once shot over, gave no further trouble: he is still savage towards strangers and other dogs, and a most voracious feeder, being seldom satisfied: I have occasionally fed him on potatoes only. It is difficult what answer to give respecting his offspring, as much depending upon the one side as the other: two of my own, however, which I shot over the last season, have fully answered my expectations, as I understand has been the case with another which I gave away; these are all which have been tried. They exceed their sire in size, but nearly resemble him in colour. I had one very curious (dead) black, blue, and white. I have one now brown, white, and black, and another blue and black. My brother, who brought him from Gibraltar, said his breed was considered scarce, and that it was called the Regent's breed, bespeaking more perhaps the Portuguese than the Spaniard.' Such," says Mr. Lascelles, "is a description of the Spanish pointer of the present day; and I have no doubt but the breed may be considerably improved by skilfully crossing it with our own."

2605. *The two greatest defects of the Spanish pointer* are a savage temper and an enormous appetite; climate may correct the one, but nothing, except the most judicious attention, can finally diminish the other. A little onwards Mr. Lascelles writes, "We have been here five days, and (four of us) in that time have killed one hundred and eighty-five brace." What follows is so practically useful, particularly as regards breaking dogs to the moors, that, coming from a source we have much confidence in, we shall stand excused by the reader, and by the author also we trust, for introducing it; and the more, as no hope exists that he will resume his labours. "An English atmosphere," he observes, "is generally much more favourable to this diversion than a Highland one, as, from the innumerable lochs and the immediate vicinity of the ocean, the mountains are so concealed in the vapours arising from them, as at all times to render a day's sport extremely precarious. A very little wet soon causes a grouse to become wild and unassailable, and the chance of pursuing him to any advantage is very uncertain, until perhaps in the middle of the day, when the sun may establish a temporary influence. His habits are exceedingly regular, always taking his food and water at particular times, the latter at noon: he will then retire to the sunny side of some bank, and beneath the cover of high furze, bask in all the delight of imagined security. If a good shot suddenly come upon a brood in this situation, he may very frequently annihilate the whole, for they will immediately separate in different directions, and each bird get up singly, so that he has nothing to do but restrain the ardour of his dogs, and, in some measure also, that of himself. The impetuosity with which many sportsmen, and young ones in particular, travel over their ground, is one great reason why they meet with so little game: they no sooner find a brood, and gain one shot, than they give up every idea of further pursuit, without ever marking the progress of their flight, or that of an ndividual, which may perhaps be induced to shorten or vary his from the infliction of a wound. From the circumstance of heath presenting so continued and smooth a surface, and the little variation in every object upon it, it is more difficult to mark down a grouse with certainty than a partridge; but by following the course of him carefully with your eye, and afterwards trying in that direction, you will seldom fail of gaining his retreat. It should be a maxim with all sportsmen, never to leave a yard of ground untried which is ikely to harbour a bird; by this means you will sooner learn the nature of game of all descriptions, teach your dogs a better system of duty, and give yourself a very decided advantage, indeed, over every other person who pursues a different method. According lso to the number of dogs you hunt, at the same time will be your chance of sport: where you possess such a latitude of range, a greater scope is open to your exertions, nd as the fatigue of moor shooting is much more severe than that of any other amusement, you should endeavour by every means to reduce its effects. Two brace of good steady dogs are, in my opinion, the number best calculated for this purpose; and they will work as long as any gentleman ought to continue out. The plan which many sportsmen adopt, is to shoot with one brace of pointers till the time of lunch, and then take a brace of fresh ones for a couple of hours in the afternoon, working the four alternately, morning and evening. The method suits very well with such a system, but there are few men who feel inclined to renew their endeavours after a cool and comfortable repast; and a good fire then becomes a luxury, which we are seldom willing to make so immediate and voluntary a resignation of. Provided every dog be tolerably steady, you can, if you like, hunt several together; but where there is a want of discipline, or where it is totally disregarded, it would be absolute folly to use more than one. The opinion which is held by many, of the advantage attending a dog's running up to his game, appears to me a strange subversion of every principle of profit or satisfaction; it totally ruins that cool and even conduct which should characterise a good shot, and excites a contention, generally terminating in mutual discontent. The danger also is in many respects not the least objectionable feature; for, in the anxiety of the moment, you may forget to uncock the second barrel; and, should you stumble, which is by no means an improbability, its contents may be lodged in the first object that unfortunately intervenes. I have known an instance also where, in the struggle for possession, the thumb of the sportsman had nearly been sacrificed to the consequence of disappointment in his dog.

2606. "*There is yet another objection to this mode of breaking,* which is perhaps still more serious, and that is the alarm that is given, not only to a single bird, but frequently to a whole brood or covey, which instantly take wing and deprive you of the chance of retarding their flight. I had a dog once sent me which had been broken according to this system, and as there is something rather extraordinary in the mode I pursued to teach him better manners, I will relate it:—He had been shot over two seasons, was particularly handsome and well bred, with one of the finest noses I ever knew, and as fleet as a foxhound. In the morning, when I first had him, which was in September, I took him out alone, and had the good fortune, for it was a very scarce country indeed for game, to find a covey almost immediately; he pointed a moment, and then ran in, but the birds separated, and the first I afterwards shot at fell within thirty yards, on the opposite side of a wall. I was, perhaps, long in getting over, for when I did, Beau had not only swallowed the bird, but the feathers also. To begin a new system of discipline would, I thought, then be premature, as we were scarcely acquainted, and I had the rest of the birds all marked down. I got five more single shots, and killed four, luckily in ground where we were upon more equal terms; the fifth, which went away wounded, he followed with all the impetuosity of unrestricted desire, and actually took a gate flying, and gave tongue like a spaniel; in truth, I never in my life saw more determined lewdness. At that moment I was very much in want of a pointer, or I should not, most likely, have taken the pains with him I did: for the remainder of the month, and the whole of October, I took him out at least five days in every week, with one single steady old bitch, that would do any thing I bade her: he never was in the least degree tired or distressed: no country was too dry for him, nor any covert too strong; and he gave such decided proofs of natural excellence, that I used every endeavour to restore its lustre. I began with severe measures, for he was grown too old in iniquity to hope any success from mild treatment. I tried excessive flogging for a fortnight, but that had no effect whatever: in addition to this, I made use of a long trash, which a boy laid hold of whenever I fired, and who not only checked his impetuosity, but corrected him well at the same time for displaying it: so long as he was under this immediate restraint, he was more cautious of offending, but from the instant it ceased he resumed his former habits. I next tried a very sharp-spiked collar with the cord attached to it; and to have him at all times within reach, I loaded him with shot, by hanging about two pounds around his neck, so that he might be said to be in a constant state of coercion: finding, however, that all this was mere trifling, and that, after reducing the length of the cord to about two yards, and fastening the end to the middle of a good strong hazel, which had the effect, at any extraordinary or improper exertion, of pulling him completely over, I had not the most distant prospect of remuneration, I was at the point of yielding to necessity, when a circumstance happened which gave me an opportunity, once more, of trying how far this insubordinate spirit might be reduced: the old bitch began to show symptoms of approaching desire, and, during the period of their amour, I allowed him a perpetual and unlimited intercouse with her, keeping him, at the same time, low in flesh, and taking them both out together as usual. In the course of a couple of days I found so decided a change for the better, that I persevered more diligently in the plan of reduction, which, at the end of a fortnight had so completely succeeded, as to leave me in possession of an animal which, of his kind, was the very best I ever saw: the produce also of that litter were invaluable, and required less breaking than any dogs I ever was master of." (*Letters on Shooting,* let. v.)

2607. *Mr. Daniel is in favour of the setter for grouse shooting;* and though, according to the nature of fashion, his writings having been long before the public, they cease to create the interest and attention they merit, yet we shall not hesitate to present our readers with some of his practical remarks on our subject. He was a sportsman of no ordinary stamp, and if only a few of the good things, which have been showered on the unworthy, had descended on him, he need not have pined out his latter years in a prison. We knew him in his palmy days when he was an Essex neighbour, and a more hospitable entertainer, a more kind-hearted and friendly acquaintance, it would have been difficult to find. He was an enthusiast in all sporting matters; his dogs were better than those of most around him — his spaniels particularly (as we have elsewhere observed) were super-excellent, and were sold at enormous prices. But we must not linger, although the subject even yet interests us, as it must every one who knew him. "In shooting the red grouse," he observes, "the old English spaniel, or setter, is preferred to the smooth pointer; they have better noses, and their feet are defended by their long hair from the ling, which, in dry weather, cuts like wire; they also are, for the most part, highe‍ı mettled, and hunt with more courage: the only objection to their general use is, that they require such plenty of water, and without which their speed and steadiness are frequently called in question. Upon the moors there is seldom a want of this article, and they there undoubtedly show themselves superior to the pointer. Upon the hills, where a horse can travel, grouse shooting is a noble diversion: to be undertaken otherwise, demands constant and hard labour; for the shooter is, during the course of the day, ascending, that is, if he finds a brood on the top of one eminence, they will sweep over the valley until they reach the summit of another, up which the sportsman has to climb. In pursuing these birds, when the dog stands, should the grouse erect their heads and run, it is a sign, either from wet or some other cause, that they will not lie well that day, and the sportsman has small chance of getting a shot but by running and heading them. The grouse soon become putrid; they should, when shot, be immediately drawn very clean, and stuffed with heather: should the plumage be bitten, or torn by the dogs, it must be wiped as dry as possible when put into the game bag; and before packing, to be forwarded to any distance, they should be again wiped, and laid within the moderate heat of the fire, to render them more perfectly dry. To show the abundance in 1801, a gentleman in Invernesshire shot fifty-two brace of moor game in one day, never killing a bird sitting, or more than one bird at a time." Mr. Daniel, in his researches, notices a fact which is not much in favour of the good taste of the epicures of former days. His words are, "Neither this nor the blackcock was at the famed feast of Archbishop Nevil, which is somewhat surprising, especially as both were found in Yorkshire: perhaps they were unaccustomed to the taste of them, or did not in those days consider them a dainty: they are now highly esteemed, and are sent as presents to the south, both fresh and potted. The expedition of the mail coaches has, at least, enabled the Londoners to receive their moor game sweeter than formerly: and the best mode of packing is to put them in boxes, with partitions; a single bird, or at most a brace, in each partition." (*Rural Sports*, vol. iii. p. 309.) We fear we have dwelt too long on this attractive variety of sporting; neither should we have borrowed so much from other sources, had it not been that, although we have seen much grousing practice, yet we are fully aware that there are others who have seen much more; consequently, for our reader's sake, we, to make our subject as practically useful and as generally descriptive as possible, have thus sought for assistance from other writers; indeed, from all that have presented themselves of known authority. We shall now, however, offer some further remarks, selected from notes of our own on the subject, made several years ago, when we sported widely and continuously.

2608. *In shooting of red grouse* it is well to consider their numbers and their state, as regards size, &c. which is greatly dependent on the nature of the season. A wet and cold one retards the pairing, and is also unfavourable to the hatching of the broods, which, like our domestic poultry, under favourable circumstances run merrily about as soon as they emerge from the shell, and then assume the name of *cheepers*, which as they advance in growth they change for that of *poults*. As to their habits we have usually found them, morning and evening, on their feeding grounds; after which, having satisfied themselves, we have commonly observed that they take a flight, and then settle down on some favourite spot, if fine, for basking; if otherwise, they will drop where overhanging banks or sheltering ling will protect them. Such a spot, if suddenly approached up wind, often occasions an immediate dispersion of them, and of course a favourable opportunity for a successful shot. The sportsman who first enters the grousing field should do it with hope of success, but not with too sanguine an expectation of it, so many are the circumstances that may intervene to mar his hopes. Fogs and rain are among those most likely to occur: being either too early or too late in the field are likewise drawbacks on the certainty of sport. If too early the mist obscures the sight; if too late, others, having been before him, have killed some and disturbed the rest, and the only chance left is to determine whether the flight they took was one mile or only half a one, and whether there is not an awkward ravine between him and them. Happy it is for him, in such case, if he be a lover of Nature, for then the wide expanse above him, the rolling of portentous clouds, or the struggles between the sun and the mist for precedence, are objects of pleasing reflection. We have often found sufficient pleasure in these prospects, and the mental associations resulting therefrom. We indeed lived in the vicinity, and when the morning was inauspicious, we solaced ourselves with the hope that the next might be better. But to come two or three hundred miles to meet nothing but disappointment, is any thing but pleasant. Nevertheless, brother sportsman, see the clouds break, a slight breeze is springing up: rest you awhile; and, if you can wait until the afternoon, the birds will be on the feed, and your sport certain. But do not leave the ground, otherwise it will be soon occupied by others, which will insure to them the advantange that at present awaits you. A true grouser will never give a chance away; and if he leave his ground without actual necessity, he bespeaks disappointment. On the contrary, if you stay quiet a while in some sheltered spot, your dogs will be fresh, your own sinews not unstrung, and your strength undiminished.

2609. *When unaccompanied, and new to the locality,* which way you shall direct your course will perhaps be your consideration on taking your ground. We say, unless you have a great many hours before you, do not extend your stretch too far, but rather try your ground, if likely, over and over again; for should the grouse take wing out of bounds, they seldom fly so much as half a mile, particularly if there be inequalities in the ground, but will drop probably on the first slope. Beat your ground therefore well, and, if there be any wind, try the lee side of the slope with every hope of success, and do not forget, that where the ling is strong, particularly if the bottom is mossy, a grouse that has been disturbed in the fore part of the day will lie very close there, although at other times they do not affect this kind of cover. Wherever the berries of the ling are prominent, the birds will be likely to be found. On some days every sportsman knows that grouse of each kind are more inclined to lie than at others; and, without any manifest difference of circumstances, the next day perhaps not a bird will lie to your dog. When they will not, but run immediately, it is recommended, that, leaving the dog on the point, if he be steady and obedient, you make your way round and head the birds; and, provided two persons are out, who are accustomed to each other's shooting, they by this method, may get some excellent sport, and by this unexpected manœuvre may enthral a brace or two. It avails little to beat the moors in the middle of the day, particularly if the sun be strong; the enthusiastic sportsman will however sometimes risk the chance, and now and then succeeds; and when heavy mists have curled around during all the early hours, there is little time left but the middle of the day. As a general rule, however, during what is considered the grousing season, which with some ends in October, and with others continues much later, the sportsman will do well to take his chance of success, in these respects, wherever and whenever he can. When grouse have fed heartily, they usually take flight to some favourite haunt, which the sportsman of the neighbourhood, who follows them continually, is well apprised of, and profits by it. These retreats are either hollows, sheltered by overhanging banks, or knolls, directly open to the solar rays. Here they appear to be either sleeping or preening their feathers, and, if the ground be dry, scratching and rubbing themselves in the loose earth or sand. At such times they may be often surprised by chance, for it is no less true than strange, that the dogs will hardly scent them, particularly if what little wind is stirring be directed from the dogs, and not towards them. We have many times observed this inaptitude to give off the particles of scent at these particular times, as though it were an ordination of Nature to prevent their being surprised by foxes, stoats, &c.

2610. *The time of the year has much influence on the habits of grouse;* in frosty weather the shooting of them is often very good, as they appear benumbed. Wet and windy weather in the cold months makes the sport very slow, and indeed it will be altogether useless to try high grounds, for they now seek sheltered situations at the bottom of the hills, and the lee side of prominences. It is, however, well to remark, that it is equally necessary even now that you carry hope in your bosom, and determination on your brow; and as we have often experienced, when we least expected it, we have found a pack huddled together, that yielded remuneration to each barrel. When you are unaccompanied by any other sportsman, and it is towards the end of the season, take a handy boy with you. We did so, and found our advantage in it. As soon as we perceived the dog or dogs feathering in a likely situation, and had reason to expect not only from the locality, but more particularly from the nature of the weather as being unsettled, that they would not lie, we used to send the boy round with one of our dogs in hand, directing him to walk carelessly, as though he was doing any thing rather than hunting. This *ruse* frequently disarmed the birds of all caution, and we were left to take our choice, by leading up to the birds, which, so soon as they discovered they were outflanked, almost invariably rose and towered, offering an excellent mark for both barrels as they wheeled round, and frequently they fell not singly but doubly, as they crossed each other. It is only the zealot in sporting that will continue his shooting throughout November and December, although very good sport may be obtained in those months. It is true that both red and black game are then wild, but when provisions become scarce and frosts nip the energies, they approach the lower and more sheltered grounds; and even, as we have already noticed, may be seen in the fields of the Scotch farmers. In deep snows they draw still nearer to the houses and yards of the husbandmen, and have been seen ranged in numbers along the stone walls which surround the dwellings, &c. of the Alpine farmers. It is now that they get raked fore and aft, and were it not that the black game are especially preserved by law from slaughter after a more early time than is allowed to red grouse shooting, they would be annihilated.

2611. *The flight of a grouse* renders it not quite so easy a mark as some suppose, for it occasionally rises almost perpendicularly, and then directs its course straight forwards at an elevation of from ten to twenty yards. When it makes the turn onwards, it may be pulled down with considerable ease; but it must be done as pence are hit by the gunner, at the moment of the pause from the perpendicular to the rectilinear. Some shots are particularly dexterous at the skimming grouse, and others again very seldom hit them, from flurry, at the change of position. Both red grouse and black game, when they have bred freely, begin to congregate, when the poults are strong towards the end of October or the beginning of November. When this occurs in a plentiful country for them, they collect in large masses of a hundred or more, in which case they are with difficulty reached, having sentinels posted, and are not to be neared within a hundred and fifty yards. In the dead of the winter, on the contrary, when from extreme cold and scarcity of provision they approach the habitation of man, they are all then as tame as they were before shy.

2612. *Colonel Hawker is very trite and short in all his instructions on shooting;* sometimes, as we and others think, he is too much so, considering the value and the source they spring from. We have covered several pages with hints or small shot, for we will not call them by any other name, being in company with those of this great gun, who, with one fire of sixteen grape shot, — we beg pardon, reader, you would call them lines (and very emphatic ones they are), thus describes the practice of grousing: — "For shooting grouse select a fine sunshiny day, from about eight till five in August or September, and from about eleven till three at the later periods of the season, as they are then extremely wild, and will only lie tolerably during the few hours which are favoured by a warm sun. Unless the weather is very fine, you will see them running and getting up five hundred yards before you. In this case, let one person take an immense circle, so as to head them; while the other remains behind, to press them forward when he is ready; and, above all things, you should, for killing them at this time of the year, use either No. 1, 2, or 3, shot, in the largest single gun that you can possibly manage; or, what is better, a good stout double gun loaded with Ely's cartridges. Grouse take a harder blow than partridges, and do not fly quite so regular and steady." (P. 160.) We cannot conclude our practice of grouse shooting, without a hint to the sportsman, that this delectable amusement may be extended to the latest months of the year, when, if the birds are become less numerous, they nevertheless lie much better, unless they have had no respite, which seldom happens; for the keen edge of the generality of sportsmen who visit the moors wears down as the birds become scarce, the moors wet, and particularly when other objects, as pheasants and woodcocks, engage their attention. It is now that the resident sportsman may take his walk undisturbed. Mr. Lascelles has some thing so much to this point that we cannot refrain from introducing it: — "In October the weather, though generally in this country (the northern moors) fine and open, is yet not so oppressively hot as in the two preceding months; the autumnal breezes impart their invigorating assistance, and give a new life to every object around: the earth retains a greater portion of refreshing dew, and no longer presents an obstinate and unprofitable surface: all game are then on the move, and we are no longer obliged to search for them in places as impenetrable to the sportsman as the overpowering heat from which they have escaped. Grouse, partridge, pheasant, hare, nothing comes amiss, and all are attainable: for the first mentioned bird, if he has not been disturbed since August, will now lie as well on a fine day as he would at the commencement of the season; and, in point of excellence, there is no comparison. The common weight is about twenty-three ounces, though I have killed them as high as twenty-six; and I know an instance of one being shot in Yorkshire, which, even after it had travelled to London in the hottest weather imaginable, weighed thirty ounces. They continue to increase in size and fullness of feather until November; and then, in my opinion, have a nobler appearance than any other description of game whatever: to pursue them, however, with any chance of success so late in the season, your method must be entirely altered, and you cannot go about it too quietly. A good stout barrelled gun, that carries a large charge, and one steady old dog, will be the most effective; and to have a still greater advantage, you should select the middle of the day, when the sun is in his full power, and the morning of which has been frosty. There is every excuse for a person in this case using all the means which ingenuity and experience may suggest: you will see perhaps a pack of grouse running from you, at the distance of five hundred yards, and it would be the height of imprudence to follow them up, under the idea of being able to get a shot; probably, at the next step you took, they would all rise together, and fly for a mile, and would invariably serve you in the same manner if in a similar way pursued. There are," he continues, "various stratagems made use of, both to draw them to you, and to induce them to lie till you can come within shot. To attain the first, you are either to go by a circuitous route and secrete yourself behind a wall, or in a pit, in the exact line they are running, and await their approach; or you are in this situation to endeavour to hasten it, by imitating the noise they make, and calling them to you; but in this case there should always be another in company, to remain in or near the place you first went from, that their attention may be principally confined to him, and taken off from you; and, in order to make them lie, your dog must bear the principal part; for, upon seeing them on foot, if he goes round and stands in the face of them, they will stop instantly, and four times out of five allow you to get within shot." (Letter x. p. 213.) Every stratagem is said to be fair either in love or war, and we fear that this licence is extended in many instances to shooting also; and were not the birds very wily at times, we should think the practices we have just detailed, and that we are going to notice, rather bordered on the confines of poaching. We find it also stated, that, "when grouse are wild, from wet or other circumstances, a perforated bullet fired amongst them will sometimes cause them to drop and lie very close. The bullet should be perforated with two holes intersecting each other in the centre; the whizzing noise frightens the birds, which it is supposed to do by bearing some resemblance to the whizzing of a hawk." We think the effect likely to happen, but we have had no experience of it. Grouse shooters accommodate the size of shot used to the time of the year, state of the birds, &c. Our own practice was, to begin the season with No. 3. for both barrels: as the grouse became wilder, we used No. 3. for the first, and No. 3. and 2. for the second, barrel. When the size and length of flight required it, we employed No. 2. for the first barrel, and No. 1. and 2. for the second. If a single gun be employed, we recommend that you charge it as you would the first barrel of the double gun.

Subsect. 3. *Blackcock Shooting.*

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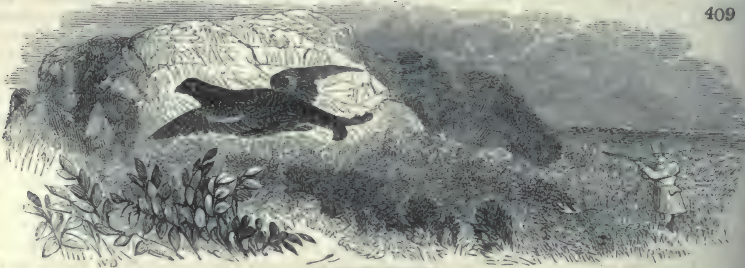

BLACKCOCK SHOOTING.

2613. *Shooting black game* (*fig.* 409.). We presume that we need not inform the reader that the shooting of black grouse had been long, by law, fixed to commence on the 20th of August, as regarded the northern parts of the kingdom; but the Earl of Caernarvon, who had some black game preserves in the west of England, had sufficient interest to get a bill passed to limit the shooting of these birds *in England* from the 1st of September to the 1st of December; and he well deserves the thanks of every rational sportsman, as well as every lover of his country, who wishes still to see it adorned with these and other winged gems. The high standing of this bird is evident by its protection as *royal game*, an honour never, so far as we know, conferred on any other winged game. It is well, indeed, that it should have such protection, for it is not well fitted to resist the attacks of artful poachers, nor indeed of enterprising sportsmen, consequently it is fortunate that its principal breeding place is Scotland, from whence it can be procured to restock the preserves of the English counties. Black game are pursued much after the same manner as the red grouse; indeed they are often found in the same locality, although it is said, that red grouse affect heather with water at hand, and that black game seek their habitation among woody tracts, which, if true, we think weakens the opinion entertained by many, that any situation that the black grouse occupy is unfavourable to the breeding of red grouse, such inveterate hatred (as it is said) have the black game to the red. This information, however, we must receive with caution, for there are so many spots where both are found together, as our own experience can testify, as to make the statement doubtful. We make no denial to some pugnacity on the part of the black game to the red; but we do not hesitate to say, from all we have heard or have seen of them, that this source of destruction of the red grouse is not greatly to be feared. The blackcock, as regards his intimacy with man, is an uncertain bird, for he may sometimes be approached very near, and at others he is altogether as shy. We however have found him to lie close enough on most occasions, when he could shelter himself under tall ling, particularly if bottomed with brackens. Under the banks of a ravine thus furnished, he is almost certain of being with his family, particularly towards the middle of the day, and if a brisk and nipping wind be blowing. We have ourselves often profited by this observation; and although black grouse at other times avoid tall ling, they now appear to seek its protection.

The young ones, until they have moulted, are by no means very wild, and when harbouring in low brush-wood, they may sometimes be almost kicked out before they will fly, which alone is unquestionably against their thriving in numbers. As they assume the full male dress after their moult, they become both wiser and stronger, and the sportsman must use his best wiles, either to deceive or to reach them.

2614. *Of the methods of attacking black game*, the following is one practised by Mr. Dunbar: — "When black grouse become wild, which they do in October and November, you may follow them a whole day, and not get a single shot at them. The best way then is, in order to bag a few, if you know of any birch woods where they frequent, to get a small pony who will stand firing from his back. No dog is required. The black game you can see at some distance. If on the ground, they will allow you to get within shot, and you may have a fair chance of securing one or two. But early in the morning, just at daylight, they may be seen sitting on the tops of the birch trees, feeding on the catkins, and they will then allow a horse with its rider within a few yards of them. I have known, in one hour in the morning, and another hour in the evening, those being their feeding-hours, as many as ten pair secured in this way. In fact, any person may secure more in those two hours than he would in three days by following them, for so wary are they, and so easily scared, that they take flights of some miles. On the other hand, with a pony, they take short flights, and alight again seemingly stupified."

2615. "*In Russia*," the same informant observes, "the shooting of the black grouse is conducted in the following way: — Huts full of loop-holes, like little forts, are built for this purpose in the woods frequented by these birds. Upon the trees, within shot of these huts, are placed artificial decoy birds, commonly made of black cloth, with the marks of the natural fowl painted: as the grouse assemble, the company fire through the openings, and so long as the sportsman is concealed, the report of the gun does not frighten away the birds; several of them may, therefore, be killed from the same tree. If by chance three or four are placed on branches one above another, the sportsman has only to shoot the undermost bird first, and the others gradually upwards in succession; the uppermost bird is earnestly employed in looking down after his fallen companion, and keeps chattering to it till he becomes the next victim. During winter, in Siberia, the inhabitants take these birds in the following manner: — A certain number of poles are laid horizontally on forked sticks in the open forests of birch; small bundles of corn, by way of allurement, are tied on them; and, at a short distance, certain tall baskets, of a conic shape, are set with the broadest part uppermost; just within the mouth of the basket is placed a small wheel, through which passes an axis so nicely fixed as to admit it to play very readily, and on the least touch, either on one side or the other, to drop down and again recover its situation. The black grouse are soon attracted by the corn on the horizontal poles, first alight upon them, and, after a short repast, fly to the baskets, and attempt to settle on their tops, when the wheel drops sideways and they fall headlong into the trap, which is sometimes found half full. In Little Russia the price of a pair, cock and hen, is 1*s.* 6*d.*; a brace of partridges 10*d.*; and a hare 7½*d.*" (*Rural Sports*, vol. iii. p. 106.) Black game require full sized shot and a full sized gun, and we recommend a single-barrel in preference to a double. We may also remark, that it is not thought fair sporting of black grouse unless the hen is mostly spared. The shot employed should be the same as is used for red grouse. The black game commonly prefer localities below those of the red grouse: ptarmigan inhabit higher ground than either.

SUBSECT. 4. *Ptarmigan Shooting.*

2616. *Shooting the ptarmigan, or white grouse.* These birds were, in times not long past, to be met with on the lofty precipices near Keswick in Cumberland, and a few also were, since our remembrance, to be found in Wales. The highest hills of the Highlands of Scotland are, however, their chief resort at the present time, and likewise the Hebrides and Orkneys. On the summits of Ben-lawers and Ben-more they may be found perched among the surrounding fragments or stones, with the colour of which they so closely harmonise in their own tints, that it requires a very quick and also a very practised eye to discover them. Mr. Daniel's account, gained from an intelligent friend who had been engaged in grousing in these localities, represents the ptarmigans as seldom taking a long flight, and never soaring aloft but flying low, and making a small circle like pigeons. The shooting of the ptarmigan is marked by a singular tameness of character in unison with the nature of the bird itself. It may be flushed, and it will rise and present its snowy pinions, and is easily brought down when, perhaps, another lies among the white crags immediately before the sportsman, but concealed by the similitude of colour to the spot it reclines on. Even the dogs do not scent them well: there is neither enterprise in flushing them, nor credit in bringing them down from their short flight. They are however, in the early part of the season, a little more on the alert, and affect more covert localities, and then they offer moderate sport; but still it is very inferior to red grouse shooting. Hardy spaniels are the most proper dogs to employ, but they must be under very good command. Colonel Thornton in his *Sporting Tour* cursorily notices their numbers in the lofty summits which frown over the neighbourhood of Glen Ennoch and its loch; and, according to his own account, he shot several brace there. He also observes that, although in the farther parts of the cairngorms they are tolerably numerous, yet there they actually swarm.

SUBSECT. 5. *The Natural History of the Partridge.*

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THE PARTRIDGE.

2617. *The partridge of Britain* (*Tetrao Perdix* Linn.) is of two kinds, one known as the grey or common partridge (*fig.* 410.), and another much less commonly met with, and known as the red-legged, and by some as the French partridge (see p. 88.), from its abundance in France. The English partridge, as it may truly be called, has much claim both to our regard and our admiration; and although he is to be met with in almost every part of Europe, he can hardly be said to appear in such plenty any where as here. In France and some other continental countries, although the partridge is to be found, yet it is comparatively scarce; the red variety predominating so much there, which, although it is somewhat larger, is nevertheless much inferior in flavour. As an article of food our partridge is very highly prized, and therefore is costly when purchased. The partridge is under the protection of the law; and we cannot agree with Mr. Daniel, who seems to consider "this interference as contrary to the spirit of English legislation." "Were these birds," he says, "solely nourished on those grounds that belong to the person whose entertainments they improve, the man who fed might claim them with some show of justice; and, like a peacock or a turkey, they might then be ranked as private property. However, the law has taken partridges (wild as they are) under its protection; and the only difference now is, that one is fed upon the farms, the other in the yards; these are contented captives — those are servants that have the power to change their master by changing their abode." (P. 70.) We again state that we view this matter somewhat in a different light. If any one has an inherent right to them, and to the other wild animals which are common to our grounds and our forests, it must be the owners of such grounds; and although the partridge, the pheasant, the hare, and the rabbit, are not strictly confined to one field, yet they are very commonly localised within the limits of one estate, on which they are begotten, reared, and remain as life tenants. Has not, therefore, the owner of the tract on which these animals are bred and reared as much right to them as he has to the geese, ducks, and fowls, which once were as wild as partridges, pheasants, &c. &c. are now in the remotest districts? Were also a legal guard and a particular provision not made for the protection of these animals, they would in the first place be exterminated, and in the next there would be little inducement for great landowners to live on their estates, and by their presence to encourage civilisation, and a desire for mental cultivation among their tenantry, which begets a community of interest between them both. But to return to the partridge, our immediate subject. Regard his trig and plump shape; filled out at all points he looks like a feathered Bacchus with a bay crescent adorning his breast; and, thus adorned, say whether he does not claim to rank if not with our most brilliant winged tribes, yet as one of the most neat and dapper amongst them? Bewick describes the partridge as "about thirteen inches in length. Bill light brown, eyes hazel, the general colour of its plumage is brown and ash, beautifully mixed with black; each feather streaked down the middle with buff; the sides of the head are tawny; under each eye is a small saffron-coloured spot, which has a granulated appearance, and between the eye and the ear a naked skin of a bright scarlet, which is not very conspicuous but in old birds; on the breast there is a crescent of a deep chesnut; the tail is short and drooping, the legs are greenish white, and furnished with a small knob behind. The female has no crescent on the breast, and her colours in general are not so distinct and bright as those of the male. The moult takes place once a year. Partridges are found chiefly in temperate climates, the extremes of heat and cold being equally unfavourable to them: they are no where in greater plenty than in this island, where, in their season, they contribute to our entertainments. It is much to be regretted, however, that the means taken to preserve this valuable bird should, in a variety of instances, prove its destruction: the proper guardians of the eggs and young ones, tied down by ungenerous restrictions, are led to consider them as a growing evil, and not only connive at their destruction, but too frequently assist in it. Partridges pair early in the spring; and, once united, it is rare that any thing but death separates them. The female lays from fourteen to eighteen or twenty eggs, making her nest of dry leaves and grass upon the ground. The young birds run as soon as hatched, frequently encumbered with part of the shell attached to them. It is no unusual thing also to introduce partridge's eggs under the common hen, who hatches and rears them as her own: in this case the young birds require to be fed with ants' eggs, which are their favourite food, and without which it is almost impossible to bring them up: they likewise eat insects, and, when full grown, all kinds of grain and young plants. The affection of the partridge for her young is peculiarly strong and lively; she is also greatly assisted in the care of rearing them by her mate: they together lead them out in common, call them together, gather for them their proper food, and assist in finding it by scratching the ground. They frequently sit close by each other, covering the chickens with their wings like the hen. In this situation they are not easily flushed; the sportsman, who is attentive to the preservation of his game, will carefully avoid giving any disturbance to a scene so truly interesting; but should the pointer come too near, or unfortunately run in upon them, there are few who are ignorant of the confusion that follows: the male first gives the signal of alarm by a peculiar cry of distress, throwing himself at the same moment more immediately in the way of danger, in order to deceive or mislead the enemy; he flies, or rather runs along the ground, hanging his wings, and exhibiting every symptom of debility, whereby the dog is decoyed, in the too eager expectation of an easy prey, to a distance from the covey: the female flies off in a contrary direction and to a greater distance, but returns soon after by secret ways; she finds her scattered brood closely squatted among the grass, and collecting them with haste by her jucking, she leads them from the danger before the dog has had time to return from the pursuit." (P. 348.) Colonel Montague, however, corrects an apparent error in Bewick's description, which is very generally received has a fact. "It has been," says this esteemed ornithologist, "long an opinion amongst sportsmen as well as naturalists, that the female partridge had none of the bay feathers on the breast like the male. This however is a mistake, as we have proved by the unerring rule of dissection; for, happening to kill nine old birds one day, with very little variation as to the bay markings on the breast, we were led to open them all, by which we discovered that five of them were females; and, by re-examining the plumage, found the males could only be known by the superior brightness of colour about the head, which alone seems to be the mark of distinction after the first or second year." (P. 355.) The partridge may be considered as essentially a granivorous bird, and although the grouse, both black and red, may be found among the stooks or corn sheaves in the north, when pressed by hunger and inclement weather, yet they do not, like the partridge, principally confine themselves to cornfields, or other grain-yielding spots. As a mother the female partridge merits our unqualified approbation. Her nest is a very rough one, it is true; but it answers all the purposes of incubation and nidification. It is made on the ground in grassfields, in cornfields, in clover, in furze, and sometimes, though not often, on the top of a ditch. May is the month in which the eggs are usually laid; and from the latter part of it to the middle of June are the extremes of time for the hatch, the setting occupying three weeks. In all these cases it is the almost general opinion, founded on observation, that the male bird assists also; and, when the young are hatched, it is well known that his solicitude in leading the brood abroad, and in searching for ants' eggs and larvæ of numerous other insects, is great. Some sportsmen, however, deny that both parents lead out the young broods in common; but which we are, from personal observation, disposed to think is the case. The call of the hen bird is not the same with that of the cock; his is more sharp and severe — her call is lower and softer. In fact they have several calls, all intelligible to themselves. One very important one, and to the practised sportsman readily recognised, is their *jücking*, when they settle down together for the night. A similar distinction between the call of the cock and that of the hen of our domestic poultry may likewise be remarked. Mr. Lascelles tells us he has watched them by the hour, and has detected the cock bird in every instance to be, in his own words, the principal in office. We also have watched a covey of partridges, and observed the cock to appear to be the chief in office; and as long as the young are unable to fly, he is most assiduous in his attentions to them; but as soon as they can rise on the wing, however imperfectly, his paternal care slackens. It is not so with the hen; her watchfulness continues, and indeed increases; she is never far from them, but searches for food for them, and leads them abroad to their scratching ground, and, when they tire, gathers them around her. In fact her attentions last until they are within a third as large as herself, by which time they can shift for themselves. Such are the conclusions we have drawn from observations made on every convenient opportunity. Consequently, although we agree with Mr. Lascelles in part, we dissent also in opinion in the degree we have pointed out. We have no hesitation, however, in asserting, that both the paternity and maternity of partridges are interesting proofs of the care implanted by Nature in birds, — first to propagate, next to incubate, and then to foster to maturity the young committed to their care.

SUBSECT. 6. *Partridge Shooting.*

2618. *Partridge shooting* (*fig.* 411.) August 31st. — "Well! brother sportsman, what auguries for the coming morn? Fair weather or foul? a wind or a calm?" "Well! my good friend, I must in reply say, you have anticipated me by two steps and a half, for I was at that distance from you when I was going to cry out, Fair or foul! — However, I suspect we shall both agree that the skies, though lowering, are not apparently surcharged with water; and farther, that the mists which hung over our hills for the last two or three mornings have all rolled upwards, and left us a bright sky." "Bravo! excellent signs! I shall therefore go home and give Basto and Juno a good meat supper, which will carry them through the day's sport I anticipate; so, until to-morrow's peep-o'-day, adieu!" September 1st, four o'clock. — "All right!" says our master sportsman to himself, "What a glorious morning! although at present I can hardly see my way across the meadows for the fog:" yet, being confident that the sun would be ready to break out very soon after he reached the forty acre field, he was most anxious to be gone, for he had, for weeks past, assiduously watched the safety of five coveys of birds that had been hatched and feathered there. Our anxious sportsman, however, waits a few minutes longer for his companion, every now and then showering down a negative blessing on him for being so tardy. "Come along! come along!" he cries, as he espies him; and off go the pair towards the forty acre field, Basto and Juno bringing up the rear, for their master was much too good a judge to allow dogs so likely to be actively engaged the greater part of the day to waste their strength in running a long way ahead, that they might have the same distance to run back again. As they moved along the companion inquired of his friend, what he thought about early morning shooting? "What do I think? why, as almost every sporting body does, go out by sunrise to it, that must be the right time; and unless you can afford to have sharp lookers, how can you hope to prevent your birds being killed off before you get to your ground?" "True," replies the other; "but I read last night in a book written by Colonel Hawker, who seems to be the great gun of all gunning sportsmen, that much game as he has known killed in September, he did not recollect ever having seen great execution made among partridges before breakfast." "True," replies the other; "but, without putting ourselves to the expense of sending two or three sturdy fellows to warn off intruders, if the birds have escaped being killed by that time, they are certainly dispersed abroad; and the advantage of our knowing their feeding and their basking grounds is nullified." We ourselves are disposed to place much dependence on the opinion of Colonel Hawker in all sporting matters connected with the gun, and we think he is not wholly mistaken in the opinion he has formed on the subject; but when we consider the irresistible stimulus there is in the breast of almost every sportsman to be up and on his ground early in the morn of the 1st of September, and when, with our friend just quoted, we consider the certainty, that, unless you are in a situation to have watchers on your grounds to prevent the birds from being disturbed, your chance is a bad one; and that however true it may be that a dewy morning may not yield many birds, we nevertheless would recommend the sportsman by all means to be on his shooting ground in proper time; that is, not only in such time as would bring him into collision with the game, but that which will likewise prevent intruders from marring his sport and ruffling his temper. We hardly need observe, that it is also a great advantage to the sportsman, if he have already made himself aware of the number of coveys in each field, the extent of their usual flight, and the spots they principally use as feeding ground, where they water, where they bask at noontide, and where they preen, scratch, and gravel. The well practised hand likewise who shoots near home, makes himself acquainted with all this; and when a cockney, or less expert friend, comes to shoot with him, he is astonished at the tact he sees displayed. Previous considerations are likewise useful in calculating the probable chances of success, and at least they add to the reputation of the sportsman. Foreknowledge will teach that the birds may be expected to

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be scarce when the breeding season was wet. A heavy fall of rain, although not of long continuance, will do much injury when it occurs at the hatching time, for the water probably either drowns the callow brood, or the cold engendered chills the vitality of the eggs. We have some reason for thinking that a heavy thunder-storm will do the same. Neither is the proximity of meadow-land in large quantities favourable to sport, and consequently many attempts have been made to prevent partridges from breeding in grass fields, but in most instances without effect, for grass bred birds will incubate in grass meadows, and corn-land bred birds will commonly choose such spots for their nidification. Hunting, beating, and other disturbances to the meadows, steadily pursued as long as the crop of grass would allow it, and even roping of fields, have all been found to fail as preventives to such breedings. Propagation is the grand work at that time, and the utmost vigilance that tends to prevent a suitable place being chosen to rear the young will be eluded, although we have always been averse to meadow-land for partridge shooting, however much we have esteemed large grass tracts for our coursing sports.

2619. *Arrived at the ground.* It is agreed between the friends, that they shall be distant from each other about thirty yards, more or less, according to circumstances; and it is also understood that, in beating the ground, a straight course is not to be pursued, but rather that it be traversed crossways, giving the dogs the whole or a side wind, as appearances might dictate, but by all means beating it so carefully that no outlying bird can escape. And see, they now advance — Juno soon throws up her head and feathers; Basto takes the lead, and in less than a minute is a fixture. Good dog! escapes from the master in an under tone. Whirr! both sportsmen fire; bang! bang! sound the guns, and a bird drops to each. Our well practised hands keep their places, marking down the covey which luckily does not leave the field, but settles at the further extremity. Seek bird! is now pronounced, and the well broken animals hie away, each to their respective bird; and, to show their sagacity, each brings that of their side to the sportsman who killed it. Reader, this is a tale, but no fiction. It was enacted as we have related it, and it occurred when we lived at Norman House near Bishop Stortford, we acting the part of the friend of the owner of the forty acre field. It is, however, not always that the sportsman is so fortunate in his dogs as in those we have just noticed; on the contrary they are often young; and, not only young, but are not yet quite steadied. In such case, we say, avoid letting them lead up to the birds, or mischief may ensue; but we repeat, that with well broken dogs it is not a bad practice, and perhaps few sights can be more gratifying than to see one go well up to his game. In an instance of this kind the partridge will skulk and crouch to the dog, but before the gunner, if there be the means, they will run fifty or even a hundred yards, and will then rise out of gun-shot. Footing of partridges, though a very essential qualification in pointers, is one of the last things they are taught, and it should be so; for they are not to be trusted at it until they are made fully aware that it is not expected of them to catch the bird, all that is required of each being only to act up to the name of *index*, or *pointer-out*, of the presence of the bird on or about that spot. We will take this opportunity of observing, that partridges will commonly lie better to dogs that wind them, than to those that track them; the reason of which is, when they are winded, the dog does not go straightforwards towards them, but follows the scent left by their devious course. When birds see a dog thus trace their footsteps down wind they will be off, for he cannot take the scent until very near them. Some sportsmen also, we beg to remark, and even such as we should not expect it of, look for the same conduct from their dogs on the moors as in the stubbles, which is certainly erroneous, for the breaking of the dog for grouse shooting and for partridge shooting is not and ought not to be the same. The grouse being strong, and each being disposed to act more independently than partridges, which is as much as they can *pack* in the true sense of the word, it follows, that if you find one you find all, and if one rises all rise. Grouse on the contrary, when they are on the point of losing their name of poults, will often separate; indeed it will almost assuredly be so with the old cock, who, leaving the pack, will run with incredible speed, often down wind, to elude you; and in fact the whole brood, when well feathered, will disperse, and the sportsman then must either follow them, or must set his dog, and going round by himself may reach them. In this case the dog must also be extremely well trained, and indeed we have seen this game so pursued by the pointer in the stubbles with success.

2620. *The time of the year in partridge shooting* influences the practice of the sportsman. The weather, the relative domesticity of the birds, and the degree of hunting they have had, should all be taken into consideration. By domesticity we mean, whether they have heretofore confined themselves to the limits of a fertile farm in a corn country, as Essex or Hertfordshire, or whether they have been used to take an extensive range over the Norfolk, or such like open lands. The flight of a covey in these diversities of ground varies greatly, and consequently it very much alters the extent and mode of pursuing it. In the one case a détour of a quarter of a mile, perhaps a furlong, or even the passing of a hedge, will again bring you on your covey; in the other a stretch of a mile, or even more, is necessary to enable you to reach them. Some excellent sportsmen prefer the employing of setters in partridge shooting, and certainly they cover the ground quicker than pointers, and they also carry with them somewhat of an air of high pretensions. For ourselves we have always preferred pointers to setters for this sport; but it is probably habit rather than deliberate examination and experience that has occasioned this predilection. A steady pointer however, it is known, will go out the first day of the season, and perform as well as he did the last day of the season past; and this is what is wanted by many persons. A setter, on the contrary, unless old and in constant practice, is apt to be a little too eager the first day. We shall say little about the number of sportsmen that go out on this occasion, nor on the attendants that accompany them. We propose to describe a scene of legitimate partridge shooting, in which two gunners and two dogs are engaged. Be it however observed, that we have no objection if the means and the wishes of these gents tally with it, if so be that a marker and keeper with a led dog be added to the *coterie*. Nor are we adverse to a shooting pony for the use of the lame, the lazy, or elderly shooter, making one of the party. Tastes differ very widely. We do not enjoy a battue which others delight in; but we confess that, in systematic grouse and partridge shooting, the number of real shooters should be limited; the attendants however, provided they keep their proper distance, may be *ad libitum*. We ourselves having reached the grand climateric, although still enthusiastically fond of gunning, with all its appliances to boot, are not ashamed to avow that, when alone, we had rather shoot to one dog than to two; and we believe the steady shooter will kill more birds to one than to two, at least he will do it more pleasantly to himself. When two sportsmen are engaged, be they old or young, then, certainly, two dogs offer more chance of sport than one. It often happens that a disturbed covey purposely breaks pack, and then one dog may be seen pointing at one angle of the field, and the other at another; and, when so disgregated, the farthest dog will not gain blame or lose cast by not backing his fellow dog; but, on the contrary, will be justified in acting independently, and steadily point his own game. Colonel Hawker is very concise on shooting, but he is pithy in what he does say. He recommends that, when birds are expected to be in high stubble, turnips, and as we should suppose in coleseed and in mangel-wurzel also, that to avoid noise the sportsman should lift his legs well up, and with light steps advance quickly, and in a stooping attitude, which will prevent the birds from seeing him so soon. A caution he likewise gives with regard to birds in hedges is extremely judicious: we will give it in his own words: — "If a dog stands at a high hedge, go yourself on the opposite side, and let your servant be sent where the dog stands. When he hears you arrive opposite, let him call to you; and when you are ready for him to beat the hedge, give a whistle; because the bird, being less alarmed at a whistle than a man's voice, will most likely come out on your side. Some people heigh the dogs in: this, I need not tell a sportsman, is the way to spoil them, and to prevent them from being staunch on such occasions. It sometimes happens that there is a close twisted hedge on the opposite side, so that the birds, in order to extricate themselves, must face the dog; and it is for want of cunning to do this that young birds are so often caught in hedges, to the great delight of ammunition savers and pot-hunters. In the latter case keep with your dogs, and send round your man to poke the hedge with a stick." (P. 147.) The prudent sportsman will not mar his own diversion by following the birds in the same track every day. If he be bent on shooting thus often, let him hire an extensive manor, but by no means selfishly harass any one locality. Much difference of opinion also prevails on the subject of partridge shooting in windy weather. We knew a gentleman who professed to think no weather but that which was accompanied with a gale was fit for this sport. He was very eccentric in every thing; we would not therefore cite him as an authority: and whether it was that the wind blew away what he shot, as well as what he did not shoot, we cannot tell; but it was seldom that his friends could get a sight of any proceeds from his windy excursions. Indeed boisterous weather can only be favourable under one view, and that is because birds do not so readily hear the approach of the sportsman. However, be it observed, that in a wind they seem themselves panic-struck, and will sometimes lie so close as to afford excellent sport; but for one windy day that they will lie like stones, as the expression goes, they will prove ten days as wild as hawks, particularly if with the wind there be some showers. We have found them, under this latter case, take to the woods and to furze; coleseed is likewise likely to harbour them in windy weather: in Ireland a high wind sends them among the potatoes. Under such circumstances one might also expect to find them among turnips; but we have not usually found them there in boisterous weather if accompanied with rain. In windy weather we hardly need remind the sportsman, that he should take the windward side of his beat, otherwise he will be likely to drive them off the land, and into the very hands of other parties abroad.

2621. *Midday shooting next claims our attention.* As the day advances the birds leave their feeding-places about ten o'clock in September and eleven in October, during which month they become less regular in their habits, and less and less so as the season progresses, influenced as they are by so many operating causes, as wind, rain, sleet, snow, gleams of sunshine, and also by contending disturbances from coursing as well as shooting parties.

Our statement of the feeding and basking times, however, must not prevent the sportsman from trying the stubbles in the middle of the day. The partridge is not only himself, perhaps, changeable in disposition, but is liable to be acted on by so many accidental causes, as enemies real or imagined putting him and his charge to flight. As the day progresses, according to the time of the year, the birds regularly visit their feeding grounds, which are principally the stubbles, as long as grain is to be found, and fine weather has kept it parched; but when it is become sodden by much rain, it is not so well relished by them. In an inclosed country, their flights are not usually very long, unless a ravine or deep valley is near, when a sense of safety will induce them to cross it, as we have repeatedly seen. On one occasion we directed a friend and visitor to cross over to such a ravine half a mile distant, and post himself a furlong beyond on a slope, we ourselves remaining in a stubble field which skirted a wood of our manor. For more than an hour we got shots by the passing and repassing of this covey, by which we each picked up birds at single shots. In the latter part of the season small woods, thick hedge-rows, furze covers, broom, fern, beetroot when left out, and coleseed not cleared off, harbour partridges. We therefore recommend the industrious sportsman to try every place likely and unlikely; such, for instance, as sitting on a stile, and surveying all around him. Nay, frown not, good reader; nor smile you who are sarcastic; for we can assure you that as fine a cock bird as ever wore the bay horse-shoe fell to the lot of a lazy sportsman who lingered on a stile in a bad scenting day. A shot not far off was heard, and in a few seconds the partridge we have specified fell within a few yards of him. The partridge had been struck by a hawk, who on sight of the gunner mounted with his prey, and in his flight received the contents of the sportsman's gun, which brought both to the ground together: the shooter not appearing, the ***stil-ish*** sportsman bore off both birds.

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2622. *Shooting in the after part of the day is good practice.* When coveys have been pursued in the morning, they should be allowed some respite. You, brother sportsman, require it for yourself; spare it also to the poor birds, who, thus eternally hunted out, will seek a new locality and frustrate your views: pursue them but fairly, and they will yield you amusement for the whole season: remember, there is a wide difference between the fair shooting of game and destroying it by wholesale. After-dinner shooting is often very productive of sport, and, when pursued by the humane and fair sportsman, is much to be recommended. It is not the use of the gun, but the abuse of it, that we would condemn. We are, however, not so set against morning shooting as Colonel Hawker, who thinks it almost waste of time. Perhaps the gallant colonel courts the morning pillow; but we think not even his precepts, much as they are respected, will keep the ardent sportsman out from the field in the mornings of September and October. He, however, instances a fact, which tells in favour of his opinion, which is, that a sportsman of his acquaintance killed twenty-three brace of birds in one day, three only of the number being killed before nine o'clock ; and he adds, that the sportsman he alludes to was himself of opinion, that he should have killed at least seven brace more, had he, instead of starting at daylight, waited until half-past seven or eight o'clock. (See p. 155. 7th edition.) The colonel, in common with every good judge of the matter, is favourable to having good markers; and three such, he observes, are not too many if the country be open and the company numerous. He likewise would have the birds dispersed, and then the dogs headed by taking an extensive circle. "Try," he says, "the hills first, and drive the birds into the vales to kill them." The colonel has quite gained our suffrages by the benefits which he says are likely to arise from trying the fallows on a cold raw day. On such a day in Essex, Hertfordshire, and Northumberland, the principal scenes of our sporting adventures, we always turned our steps to them, and we never recollect having reason to repent it. When we were in Ireland we fell in with two sportsmen, not very crack ; they, however, did us the honour of requesting our company to a turn among the spent stubbles and the potato grounds. We represented the fallows as the most likely haunt for birds at that time of day, and to them we directed our steps. Nor shall we ever forget how soon after we entered the field we could plainly discover, by the glistening of the melting moisture of the hoar frost, the forms of three or four birds crouched among the clods. In vain we pleaded the propriety of springing them. No, these gents would not lose an opportunity but seldom gained; both fired, and both, to our great delight, missed his bird as it lay: but be it observed, that unfair sporting is not the true Irish character, and our friends were young.

2623. *A preponderance in the number of cock birds* is supposed to occur in the breedings of each season, in consequence of which the hen partridge is so tormented by a number of males, "that she drops one egg in one place and one in another, until there remains for her but one cock and no nest. The best mode," we are told, "to destroy the superabundance of cocks is, during the first three weeks of the season, to net the covey, and destroy all the old cocks, leaving as many young ones as hens, or even one less; for it is certainly better that the hen should look for the cock (which she undoubtedly will find), than a number of cocks for a hen. It should be recollected that, where old birds are left, they will at the pairing season drive off the young ones, and prevent their breeding; for let any sportsman declare if ever, on finding a single brace of partridges in the shooting season that have not bred, and are termed by sportsmen a gelt pair, he has found a covey near the same place where he found them; which can be only accounted for by the old birds driving the young ones from the ground, and preventing their breeding there. It is therefore a wrong notion, that some birds should not be killed every year; and those gentlemen who have manors will find, by not allowing some to be killed, that in a short time their grounds will be entirely destitute of game. The late Earl of Kingston had a great quantity of grouse on his mountains in Ireland before they were preserved; but he thought by leaving them quiet for a couple of seasons that he should have had a much greater abundance; he therefore did not allow a shot to be fired on those mountains for two seasons, and it is well known they were carefully preserved during the whole time. On collecting, however, a large party the third season, and going out to grouse, many of the gentlemen who had been in the habit of shooting there prior to its being preserved were surprised to find a great scarcity; the reason of which was, certainly, that the old birds drove the young ones off; and all the mountains adjoining the Earl of Kingston's were swarming with game, although they had not been preserved. It is the same with partridges; the late Col. Hyde of Castle Hyde, county of Cork, Ireland, who wished much to increase the breed of them on his grounds, pursued the following plan which proved successful: — His gamekeeper, in the early part of the season, netted a number of birds, reserving all the young ones with some old hens, and after destroying all the old cocks, he turned the young birds into a large place he had built purposely for them, and let them go again on the 1st of February following; and he had, in consequence, a great abundance about him. If, therefore, this method answered so well, it would certainly be worth any gentleman's while to adopt the same plan. There are many sportsmen who have so keen an eye as to be able to ascertain, when the partridges take wing, the difference between a cock and a hen; if so, it is to be wished every sportsman would kill the cock in preference to the hen, and then the breed of partridges would be greatly increased throughout the kingdom." (*Shooting Directory*, p. 102.) We presume the following stratagem, related by Mr. Daniel, of a careful mother among these birds, as being in a locality known to both him and ourselves, is without doubt entitled to our full credence, and is worthy of notice on account of its interest: — "Upon the farm of Lion Hall in Essex, belonging to Colonel Hawker, 1788, the following extraordinary incident of a partridge depositing her eggs was known to many persons. This bird chose the top of an oak pollard to build her nest; and this tree too had one end of the bars of a stile, where there was a footpath, fastened into it, and by the passengers going over the stile before she sat close, she was disturbed and first discovered. The farmer, whose name was Bell, apprised Mr. Daniel of the circumstance, which he laughed at as being the report of his workmen, and saying, that it was only a wood-pigeon they had mistaken for a partridge; but Master Bell, who had killed some hundreds of partridges, so positively affirmed his having beheld the bird upon the nest on the tree, and also at another time having told the eggs to the number of sixteen, that Mr. Daniel was persuaded to ride to the spot, where the partridge was seen sitting: in a few days she hatched the sixteen eggs; and her brood, scrambling down the short and rough boughs which grew out all around from the trunk of the tree, reached the ground in safety." Partridges are subject to the same mutations of clothing as other birds; they have been seen entirely white. "A covey of nine partridges," this same author tells us, "were bred upon a farm of the Hon. J. Olmius, at Sandon in Essex, four of which were pure white, and three of the others were mottled. In 1804 a partridge was killed by Mr. B. Dudley's keeper, that had half the longest feathers in each wing of a milk white, and the skin of the centre claw of both feet was of the same colour. In 1796 at South Cave," he also informs us, "that at Mr. Barnard's, near Market Weighton, was a covey of eight partridges; four of them were the most beautiful clear white, three were pied; the eighth bird escaped from under the net, by which the other seven were secured; they were kept alive in the mew, and considered as great curiosities." (*Rural Sports*, vol. iii. p. 75—80.) We have already observed, that it is sometimes fair to net partridges, that we may select the cocks, whose average increase is about one-third beyond the number of hen birds. This disparity, which we believe we have already noticed, is best kept down by tunnelling them, that is, by taking them in what is called a tunnel net, and then destroying the superabundance, so as to make the number of cocks and hens equal. We would also embrace this opportunity of aiding Mr. Thornhill in his laudable endeavours to increase the breed of partridges, by stating that where circumstances occur to destroy a hen partridge when incubating, such as by her being trodden on, rolled over, or cut by the mowers, that the eggs should be immediately placed under a sitting hen, where they will be assuredly hatched, provided that care be taken, when the hatch takes place, to alternately moisten and dry the egg shell with warm water, not allowing more than half a minute for each process. This moistening is requisite to dissolve the gluing effects of the greater heat of the body of the hen of the barn-door fowl over that of the hen partridge, which is such in most cases as to stick the feathers of the young partridge to the shell so tightly, as to prevent its liberation unless assisted by such a careful moistening of the shell as shall dissolve the adhesive attachment without injuring the bird.

2624. *Grass-bred birds,* — do they require any particular method of pursuit? We reply, very little; for as soon as the young ones can fly they follow the mother to the field, who, until they were able to do this, had fed them with ants' eggs and insects, by which they gain strength to fly, perhaps greater even than at their early state they could accumulate from grain. A covey of birds shot into a very few times teaches them instinctively to disperse for safety; but at first they reassemble very quickly, and the call that is made is easy to be heard, and the flight also to be distinctly seen in a level country. After some time however, when the birds have been much pursued, they do not assemble so quickly, but still they communicate, and, if we mistake not, we ourselves are the first who have remarked on this call of communication, as being one essentially different from that of the call or *juck* to unite the disgregated covey. The *call of communication* is first made in an under tone; it has nothing sharp in it, but if the sportsman has a good ear, and is within a suitable distance, but concealed from observation, he will find it is not given in vain, but will be responded to by the young birds in a tone soft and something like the call made by the parents. That it is a call of communication only, as "how be ye?" "where are ye?" is evident, for we do not remember in any one instance its being followed by a junction or flight of the birds. We would recommend this to the sportsman's particular notice, not only as a curious fact in the natural history of this bird, which we think it will prove to be, but likewise as furnishing a practical notice that may be turned to account.

2625. *The domesticity of the partridge is not great,* and we are sorry that we cannot say any thing favourable of this high prized bird in this respect. Partridges reared under a hen even will not bear strict confinement, however at first they may seem to thrive and to own the foster-mother that feeds them, they gradually become wild, and eventually altogether estrange themselves from her who had seemed to have been regarded by them as their protector. If, in such a case, they are attempted to be permanently retained, we believe they one and all invariably die. One reared by the Rev. Mr. Bird, we are however told of, which long after its full growth, though not entirely domesticated, would yet attend at the parlour window to receive its breakfast, and would also occasionally come within doors, and in cold weather it has been seen to stretch itself out on the hearth to collect the warmth by basking.

2626. *Broken coveys yield the best sport.* While the young birds have the old ones with them, they are, as the gamester would say, "up to every move on the board." Deprived of them they are truly discomfited, and do not know how to act. It is now that the well practised sportsman with steady dogs ferrets them out, as we might say, from places likely and places unlikely; for we know hardly one, except it be within a stopped bottle, that a stray bird may not be driven into when urged by fear to seek for safety. Search therefore, brother sportsman, closely, and you will pick up many a stray shot, the very exertion of doing which, when attended with success, will make the bird doubly prized. How elated is Ponto when a missed bird is recovered; and how well he knows when you are in pursuit of a particular one, and how eagerly he tries to further your views, by devices extra-instinctive; indeed they are rational. We have hitherto advanced no recommendation on the subject of the gun, whether it should be a double or a single one. Unless the shooter is sufficiently an adept to bring down a bird with each barrel, he may with much propriety avoid the trouble, fatigue, and risk, attending two barrels. The risk, however, is now much reduced by the safety stop. If the smoke does not prevent the shooter with a double gun, we would advise him not to take it down, but, merely altering his point, to take his second shot. As many as eight and ten successive double shots have been fired without a miss or a mishap. Our own plan was, when we went out for partridge shooting on our own ground, to use a single gun only; because we had the means on our own manor of keeping off intruders, and, as sometimes our walk was extended to a considerable distance beyond the limits of our own manor into other friends' grounds, both for ease to our arms and for decency of appearance, for double guns were thirty years ago regarded rather as a poaching than as a fair sporting article. We repeat, we then carried a single gun only, and a single one we would recommend to the steady shooter who can go out whenever he lists. He will with this not be remarked on as a murderer, but will receive two invitations for one to shoot on other grounds than his own: but, be it observed, this remark is intended for the more humble gunner, and not for the *élite*.

2627. *Should any inquiry be made as to the size of the shot employed in partridge shooting*, we would reply, that as the season advances the size of the shot should advance also. Nos. 5. and 6. if the shooter has lost the unnecessary prejudice against mixed shot, will answer his purpose for the first fortnight: he may after this use No. 5. only, or Nos. 4. and 5.; and in October he may (if he shoots over a very open country where long flights are taken) with propriety charge with No. 3. These hints are general only; but we know them to be substantially correct, allowance being made according to the size of the gun, whether single or double, &c. &c. (See this subject fully discussed at p. 780.)

Subsect. 7. *The Red-legged Partridge.*

2628. *The red-legged or Guernsey partridge* (*Tetrao Rufus* Linn., p. 88.). Extended as our sporting travels have been, we however have not seen many of these birds, and we have pursued still fewer. We will therefore introduce Mr. Daniel's account of them, as being one of acknowledged accuracy and much interest: — "This bird, besides his names of Guernsey and red-legged, is likewise known to many as the French partridge from his abundance in France. It is larger than the grey, and the bill and irides are red; the forehead is grey brown; the hind head is rufous brown; the chin and throat white, encircled with black; added to which is a band of white over each eye to the hind head; the fore part of the neck and sides of it are cinereous, with two spots of black on each feather; the hind part of the neck, rufous brown; the back, wings, and rump, greyish brown; the breast, pale ash-colour; belly, sides, thighs, and vent, rufous; the sides marked with lunular streaks of white, black, and orange; quills, grey brown, with the outer edges yellowish; the tail composed of sixteen feathers; the four middle ones, grey brown; the next on each side, the same, but rufous on the outside; the five outer ones, rufous on both sides; the legs are red, and the male only has the blunt knob or spur behind them. It is a common pastime in the Isle of Cyprus to use these birds as we do gamecocks, for the *rational* amusement of butchering each other. It is abundant in various parts of Europe, Asia, and Africa, in many parts of Italy and France, and also in the islands of Madeira, Jersey, and Guernsey, and is so plentiful in the Isle of Nansio, as to be the pest of the inhabitants, who make it a rule to collect as many eggs as possible every year in order to lessen the breed, which in some seasons have totally eaten up the fruits of the harvest. These eggs, which are taken by thousands, are prepared with different sauces, and supply the islanders for many days. According to Tournefort they are so tame in the Isle of Scio, that they are driven to seek their food in the fields like so many sheep, and that each family entrusts its partridges to the common keeper, who brings them back in the evening, and he calls them together with a whistle, even in the daytime." Another account states, that "in the country round Trebizond a man was seen leading above four thousand partridges; he marched on the ground, while the partridges followed him in the air, until he reached a certain camp, three days' journey from Trebizond; when he slept, the birds alighted to repose around him, and he could take as many of their number as he pleased." In Provence persons have acquired the art of assembling numerous flocks of partridges, which obeyed the voice of their conductors with wonderful docility; and they most probably were birds of this species which Willoughby thus notices—"A certain Sussex man had, by his industry, made a covey of partridges so tame, that he drove them before him, upon a wager, out of that county to

London, though they were absolutely free and had their wings grown." These partridges would, in all probability, have beaten Lord Orford's geese: that nobleman, in 1740, made a considerable bet with the late Duke of Queensbury, that a drove of geese would beat an equal number of turkeys in a race from Norwich to London. The event proved the justness of his lordship's expectations; for the geese kept on the road with a steady pace, but the turkeys, as every evening approached, flew to roost in the trees adjoining the road, from which the drivers found it very difficult to dislodge them: in consequence of stopping to sleep the geese beat their competitors hollow, arriving at their destination two days before the turkeys."

2629. *The red partridge* is said to be fond of mountainous situations, well covered with wood; and it seems as if this species alone was known to the Jews, since in the first book of Samuel it is represented as an inhabitant of the mountains; in David's appeal to Saul, "The king of Israel is come out to seek a flea, as one would hunt a partridge on the mountains." The flesh of these birds is white, and by some considered of higher flavour than the grey: in France they are made into pies, and highly esteemed. In two points the red differ from the common partridges, — in being found in flocks, whereas among the latter only those belonging to the same covey herd together; the red are also observed to perch on trees, &c. which the common partridges never do, and perhaps have not the faculty to do; yet, in roosting upon the ground, they are not indifferent to their own preservation, for, through apprehensions from polecats, stoats, &c. they never trust themselves to coverts, but nestle together in the midst of large fields, far removed from hedges and coppices, which they love to haunt in the daytime, and wherein they lie more secure from the attacks of rapacious birds. So far back as the time of Charles the Second, several pair of these red-legged partridges were turned out about Windsor to obtain a stock; but they are supposed to have mostly perished, although some of them, or their descendants, were seen for a few years afterwards. The late Duke of Northumberland preserved many, in hopes of their increasing upon his manors; but the late Earl of Rochford and Marquis of Hertford have been at the most expense and trouble to establish them in this country: both these noblemen had not only numbers of the birds sent over from France, but also imported many thousand of their eggs, which were hatched under hens, and set at liberty at a proper age; by this means there is now plenty of the red birds upon the latter nobleman's estate near Orford in Suffolk. They did not breed numerously at St. Osyth (Lord Rochford's), the soil was not so favourable; yet even here they increased, and now and then a covey of them was found some miles from his lordship's domain. Mr. Daniel tells us that he, "in 1777, found within two miles of Colchester a covey of fourteen; they were in a very thick piece of turnips, and for half an hour baffled the exertions of a brace of good pointers to make them take wing, and the first which did so immediately perched on the hedge, and was shot in that situation, without its being known what bird it was; a leash more was at length sprung from the turnips and shot; and, two days after, a brace more of them was killed by another person. From that time until November, 1799, he never shot one; he was then out at Sudbourn, with a gentleman, who was particularly anxious to kill some of these red partridges, and hunted with a brace of capital pointers for them only; the instant the dogs stood the red birds ran, and always took wing (notwithstanding all the speed exerted to head them) at such distances as to be out of the range of the shot from any fowling-piece. Upon the same grounds, and on the same day, they laid until the springing spaniels (with which the compiler was shooting) almost touched them before they arose, and in a short time he killed two brace and a half. Whether the questing of the spaniels caught their attention (having never before been attacked in that mode), or that, from being frequently found by pointers, they perceived and immediately ran from their enemy as the dog became stationary, the gamekeepers, who knew their habits and were not a little surprised at seeing the circumstance, could not determine. They have one peculiarity, that, when wounded, they will go to ground in the rabbit burrows." (*Rural Sports*, vol. iii. p. 195.) We have seen enough of these birds to justify us in asserting that, as a table guest, they are greatly inferior to our native partridge, and equally so for their sporting qualities in the field. They are everlasting runners, never lie well, and seldom rise within gun-shot. We believe they are or were in great plenty on Mr. Vernon's manor at Aldborough, and at Lord Huntingfield's, Heveningham Hall. They are, in fact, sprinkled about in many places, rather for ornament than use; however, as perchers, they vary the sporting scenes. When we were in France we saw plenty in the market, but we do not remember having seen them either perched or on the ground in all our travels there. Indeed, we would appeal to our countrymen generally, travelling through France on any of the great roads of communication with the capital, whether they were not struck with the almost total absence of animals. It is true that even human passengers are not in general very thickly spread on the roads as with us; but who has had the felicity here to see a covey of partridges skim over the road from one side to the other? Even a rabbit is a rare sight; and we never saw a living hare, although they were to be obtained in the market, together with poultry and game, in plenty. It is the general dulness of the prospect to the sportsman who sees so few animals in his journeyings, that we complain of; therefore the sportsman, at least, can contradict the saying, "That they manage these things better in France."

SUBSECT. 8. *The Natural and Sporting History of the Quail.*

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THE QUAIL.

2630. *The quail* (*Tetrao Coturnix* Linn. *fig.* 413.), according to Montague, "is about seven inches and a half in length; bill dusky; irides hazel, in old male birds yellow: the crown of the head is black, transversely marked with rufous brown, down the middle is a yellowish white line; above the eye, passing backwards, is another line of the same colour; on the chin and throat is a black mark, which turns upwards to the ears; the rest of those parts are white; the hind part of the neck black; scapulars and tail-coverts are rufous brown, the middle of each feather streaked with yellowish white, surrounded more or less with black; sides the same, but have not so much of the white streaks; breast light ferruginous brown; shafts white; belly paler; wing-coverts pale rufous brown, streaked like the back, but more minutely; quills dusky, the outer webs more or less mottled with yellowish white; tail dusky, tipped with white, and consists of twelve short feathers hid by the coverts." (*Ornithological Dictionary*, p. 394.) The hen bird is distinguished by having little or no black on the chin or throat, a dusky mark passes from the ears downwards; some dark spots also are seen on the chest, and the coverts of the wings are barred with yellowish white streaks. The quail is a bird of almost universal distribution: it is, however, said not to be known in America. Its great resemblance in figure, colour, and habits, have gained for it with some the name of the dwarf partridge. "These birds," says Mr. Daniel, "resemble each other by being both pulverulent, having short wings and tail, and running very swiftly; they feed, copulate, build their nest, and raise their young, nearly in the same way; both are salacious, inordinately lustful, and the males quarrelsome: but, numerous as are the points of resemblance, they are more than balanced by a number of disparities, which render quails a distinct species; for, omitting the peculiar incident of their migration, quails are universally smaller; they have not the bare space between the eyes, nor the figure of the horse-shoe impressed on the breast of the males, as in the partridge; the quails' eggs are smaller, and of an entirely different colour; their notes are unlike; the flesh of the quail is also of a different flavour, and more loaded with fat; the period of their life is shorter, for the quail does not live more than five years. They are less cunning than the partridge, and much more easily ensnared, especially when young; their dispositions are not so gentle; and it is extremely rare to see them tamed. Quails seldom form themselves into coveys, except when their wants unite the feeble family to their mother, or some powerful cause urges at once the whole species to assemble, and traverse together the extent of the ocean, holding their course to the same distant land; but this forced association does not subsist after they have alighted, and find in their adopted country that they can live at will. The appetite of love is the only tie, and even this is momentary; so soon as passion has spent its force, the male abandons his mate to the labour of raising the family: the young quails are hardly full grown when they separate; or, if kept together, fight obstinately, and their quarrels are terminated only by their mutual destruction." (*Rural Sports*, vol. iii. p. 189.) In many parts of Europe their increase is extraordinary: in Britain, England, Wales, and Scotland, their number is very limited; we have, however, met with them in greater numbers in Ireland than elsewhere. In the neighbourhood of Drogheda we used to find them very frequently; indeed, we were accustomed to say, it was only to look over a hedge or a stone wall, and to find the plant hellebore there, to be certain of finding one or more quails; but this plenty was not constant but sessional only.

2631. *The quail is essentially migratory;* so much so, that those that have been home-reared and kept in confinement for years, nevertheless retain the instinctive desire to migrate; and as the feverish excitement which denotes it is usually exhibited in the evening, it has given rise to a very probable conjecture, that they journey by night. Pliny bears evidence to this: — "They alight," he says, "in such numbers on ships (and which is always in the night), by their settling on the masts, sails, &c. as to bear down barks and small vessels, and finally sink them, and on that account the sailors have a great dread of them when they approach near the land." In the autumn immense flocks cross the Mediterranean from Italy to Africa, alighting as well when they go as when they return on the numerous islands of the Archipelago, in such numbers as almost to cover the country. In Alexandria the supply is so great, that we are told that they may be bought at the rate of a farthing each. The crews of the merchant vessels have, in some instances, been so fed on them as to occasion complaints to be made at the consul's at Alexandria, that they were the only food allowed them. Quails assemble in autumn in the northern shores to emigrate southward; and it is observed that they delay their departure until a north wind arises, when towards sunset the whole body take wing, and are so expeditious that they traverse fifty leagues by break of day. Sir William Jardine tells us that, "On the coast of Italy and Sicily, and all the Greek islands, they arrive at certain seasons in immense numbers. A hundred thousand are said to have been taken in one day. They are run after during the flight like the passenger-pigeon of America, and a harvest is gathered when the numbers are greatest. In Sicily crowds of all ages and degrees assemble on the shore. The number of boats is even greater; and enviable is the lot of the idle apprentice, who, with a borrowed musket or pistol, no matter how unsafe, has gained possession of the farthest rock, where there is but room for himself and dog, which he has fed with bread only all the year round for these delightful days, and which sits in as happy expectation as himself for the arrival of the quails. Ortygia was named from them; and so abundant were they on Cupri, an island at the entrance of the Gulf of Naples, that they formed the principal revenue of the bishop of the island. From twelve to sixty thousand were annually taken; and one year the capture amounted to one hundred and sixty thousand. In China, and in many of the eastern islands and Malacca, they are also very abundant, performing regular migrations from the interior to the coast." (*Naturalist's Library*, ORNITHOLOGY, vol. iv. p. 97.)

2632. *The fighting propensities of the quail have immortalised him.* Henry the Third, king of Castile (as reported of him by Mariane the Jesuit, lib. iii. cap. 7.), was much taken up with catching of quails, as we suppose for the purpose of matching them to fight, and also as well to pursue them as a sport; for we are told that the Castilians hunted them morning and evening. Scaliger likewise reports that the Italians have gardens purposely to hunt them in, and which gardens are fitted up at great cost, and where, with their quail-pipes, they pursue the quail as a great amusement. Tycho Brahe even, with all his gravity, would seem to have been a lover of this diversion, as well as of fishing. Indeed, innumerable ancient and modern records bear testimony to the native pugnacity of the male quail. The Athenians esteemed a quail fight among their highest treats: the Chinese also encourage pitched battles among them, after the method of our cock fightings, and large stakes are lost and won on the battles. The Afghans to this day, as we are informed, spend much of their time in matching their quails against each other; and so pugnaciously inclined is this bird, that it is but seldom that he is not as ready to fight as the Afghans are to look on. The Greeks and Romans were great quail fighters, and a known conqueror was very highly prized. Nay, in such estimation was one held which had thus signalised himself, that Augustus is said to have put to death a prefect of Egypt, who had such a conqueror brought to his table to be eaten. Burnes, in his *Travels in Bokhara*, tells us that he "arrived at the season of the quails, when every one who could escape from his other avocations was engaged in hawking, netting, or fighting, these courageous little birds. Every Tuesday morning the chief had a meeting in his court-yard to encourage this sport. He used to send for us to witness it: it is by no means destitute of amusement, whether we regard the men or the birds; for chief, servant, and subject, were here on an equality, the quails being the heroes not the men. They are carried about in bags, and enticed to fight with each other for grain, which is sprinkled between them. When the quail once runs he is worthless and immediately slain, but they seldom made a precipitate retreat. Nothing can exceed the passion of the Afghans for this kind of sport; almost every boy in the street may be seen with a quail in his hand, and crowds assemble in all parts of the city to witness their game battles." Ere we conclude, it cannot be inconsistent with our account of the natural history of the quail, to notice its habits in every quarter of the globe. In India these birds are very abundant, and are much prized, not only for their edible but also for their pugnacious qualities, consequently they are entrapped, by various methods, by the shecarries among the Hindoos. Johnson tells us in his *Indian Field Sports*, that these people "equip themselves with a frame-work of split bamboos, resembling the frame of a paper kite, the shape of the top of a coffin, and the height of a man, to which green bushes are fastened, leaving two loop-holes to see through, and one lower down for their rod to be inserted through. This frame-work, which is very light, they fasten before them when they are in the act of catching birds, by which means they have both hands at liberty, and are completely concealed from the view of the birds. The rod which they use is about twenty-four feet long, resembling a fishing-rod, the parts are inserted within one another, and the whole contained within a walking-stick. They also carry with them horse-hair nooses of different sizes and strength, which they fasten to the rod; likewise birdlime, and a variety of calls for the different kinds of birds, with which they imitate them to the greatest nicety. They take with them likewise two lines, to which horse-hair nooses are attached for catching larger birds, and a bag or net to carry their game. Thus equipped, they sally forth; and as they proceed through the different covers they use calls for such birds as generally resort there, which from constant practice is well known to them, and if any birds answer their call they prepare accordingly for catching them: supposing it to be a bevy of quail, they continue calling them, until they get quite close; they then arm the top of their rod with a feather smeared with birdlime, and pass it through the loop-hole in their frame of ambush, and to which they continue adding other parts, until they have five or six out, which they use with great dexterity, and touch one of the quails with the feather which adheres to them; they then withdraw the rod, arm it again, and touch three or four more in the same manner before they attempt to secure any of them." (P. 21.)

2633. *Quail shooting.* We have already stated that the principal English quail shooting we have seen has been in Essex, but that we saw still more of it in Ireland; in which latter country this bird is far more common than with us. As in England, so in Ireland also, the principal flight arrives in the spring, but some few remain in both countries the whole year, and a few breed in them likewise. In England they appear to have no fixed places of residence, yet are certainly more usually met with in those localities which border the sea than in any others; thus in Kent, in the Isle of Thanet, and on the whole of the Essex coast, as well as in Cambridgeshire, we have met with them occasionally. In Suffolk and Norfolk they are likewise now and then found in the same covers as partridges, *i. e.* cornfields, coleworts, gorse, or furze. During the month of May, which hails their appearance from the opposite coast, they may be sometimes met within any of those localities. When we resided in Essex, we every now and then dropped suddenly on one, two, or more, in the corn patches throughout the Thurstable Hundred, and occasionally in the St. Osyth Marshes; but the occurrence was rare. The bevies we met with in most English localities have seldom exceeded seven or eight, and, when a large number appeared, we had reason to believe that the adventitious birds were the remains of another bevy, the old birds belonging to which had been shot off. This packing of quails, we have reason to think, is not unusual; and as the period we refer to was more than thirty years ago, when quails, although never abundant, were more plentiful than at present, so it increased our opportunities of observing their habits and habitations. Mr. Daniel however, who resided in the same neighbourhood with ourselves, but much longer, says of them, "With us they are birds of passage, some entirely quitting our island, others shifting their quarters, as it is said, from the neighbouring inland countries into the Hundreds of Essex, in October, where they continue all the winter. If frost or snow drive them out of the stubble fields and marshes they retreat to the seaside, shelter themselves among the weeds, and live upon what they can pick up from the *algæ*, &c. between high and low water-mark: their appearance in Essex coincides with that of their leaving the inland counties; and this same observation has been made in Hampshire. The quail, like the partridge, makes no nest, except a few dry leaves or stalks scraped together may be so called, and sometimes a mere hollow in the bare ground suffices; in this the female lays six or seven eggs of a whitish colour, marked with irregular rust coloured spots. Mr. Holland, of Conway, once found a nest with twelve eggs, eleven of which were hatched; and the compiler of this account has seen a bevy of nine young ones." (Vol. iii. p. 195.)

In France and Italy they lay from fifteen to twenty eggs, and in still warmer climes the number may be even greater; indeed, we know they do lay even more than this number, and this prolific increase can alone account for the almost incredible numbers to be met with which we read of. As some sportsmen profess to have seen young bevies of quails in September we conclude, that these were the produce of a second hatch, which will still further illustrate how prolific they are. A very interesting, and almost an isolated, account of the quail and its habits, including also the means of sporting for it, may be met with in the *New Sporting Magazine*, No. xxv. vol. v.; and we would recommend the reader's attention to it, not only as bearing us out in our statements, but likewise as increasing some of the points of information we have offered. The Isle of Thanet the writer particularises as a favourite resort of quail; and that at all times, he tells us, they may be found there. "This place was formerly so famous for them, either from its vicinity to the French shore, or the quantity of grain which is cultivated, that people came from great distances for the express purpose of quail shooting; of late years, however, their numbers have considerably decreased, but still the sportsman, in the beginning of September, may commonly kill from two to three brace a day. Along the banks of the Thames, below Purfleet, several farmers and sportsmen have assured me, that about the beginning of November, a time at which the departure of the main body has taken place, a small number of quails make their appearance and continue during the winter, always at a short distance from the river's edge; these are evidently the young birds of the second bevy, who, for some reason, seek that particular situation after the migration of the rest of their species." (P. 27.) We also agree with him, that the quail is far from being without scent; our own dogs, whenever we met with them, have challenged them continually, and stood to them staunchly. We have always met with them, with most certainty, when we were early out, and most frequently they were to be found in stubbles, occasionally only they were met with in the long grass of the country hunted; but we more often found them in their evening feed in the cornfields, when we were on the look-out for partridges. They form rather an unpleasant game to follow, and indeed ought never to be hunted but with a thoroughly steady dog, and the older the better, so very irregular are they in their habits, at one time lying like stones, and at another running like lapwings. As we usually came upon them unexpectedly, so we used to kill them with common partridge shot; but where the sportsman is on the look-out for them only, we would recommend that he does not use a higher number than seven.

Subsect. 9. *The Natural History of the Pheasant.*

2634. *The pheasant genus* owns in particular two sporting varieties naturalised amongst us, and some others which are kept in a state of confinement in our menageries. We shall not bewilder our readers with the nice distinctions and restrictions of naturalists with regard to their station; suffice it to say, that it is now agreed by them that it ought to be separated from the gallinaceous tribes with which it was so long connected in ornithological descriptions. Be it however understood, that we have two distinct *sporting varieties* of the pheasant. One, rather larger than the other, is the *Phasianus Colchicus* Linn. (*fig.* 414.), which it will be seen is not collared like the small or ring necked pheasant, *Phasianus Torquatus* of Temminck. Both however interbreed, which might lead to a supposition, that accident more than design had occasioned this variation between them, were it not that the difference observed in their relative sizes still remains with the progeny of each. In a sporting point of view the pheasant is very important to the lovers of shooting. The naturalist also admires it for its beauty, and is particularly interested by a consideration of its extensive geographical distribution; nor can look, but with some surprise, at the ease with which it becomes naturalised in a country opposed in so many particulars, as is our portion of the globe, to its early birth-place. We shall therefore, as we hope, stand excused by our readers of all classes, if we dilate somewhat more than is our usual custom on the natural history of these objects of general regard and admiration. Although the genus *Phasianus* is now restricted by modern naturalists, it nevertheless contains other splendid varieties besides those already hinted at, two of which are frequently met with among us in aviaries. One from the south of China, known as the golden pheasant, and by Mr. Swainson called *Nycthemerus Pictus*, figured at p. 20. is a beautiul example, and not uncommon in our aviaries, where it is fed with grain in varieties, as rice, hemp, wheat, and, as we should recommend, Indian spices produced in pods. It likewise eats vegetables of various kinds, aromatic herbs, fruits, raw and preserved, and insects in vast quantities, the want of which cuts off very many of them. The other variety is the silver pheasant, *Nycthemerus Argentatus*, which, if less showy than the last, is to the full as elegant, and has been longer domesticated in our aviaries. It is more hardy than the golden pheasant, being a native of the north of China, and may be brought to propagate here with little trouble, so that without doubt we shall yet see it ranging the open country with our common pheasants. It makes its nest in April, and lays from eight to fourteen eggs, which are of a reddish yellow, varied with white, and sprinkled with small brown spots. Mr. Swainson tells us their young are hatched in twenty-six days. Mr. Castang, however, enumerates six different varieties of pheasant, exclusive of the common: as the gold, the silver, the ring-necks, the white, the pied, and the Bohemian; but some of these are as strictly exotic.

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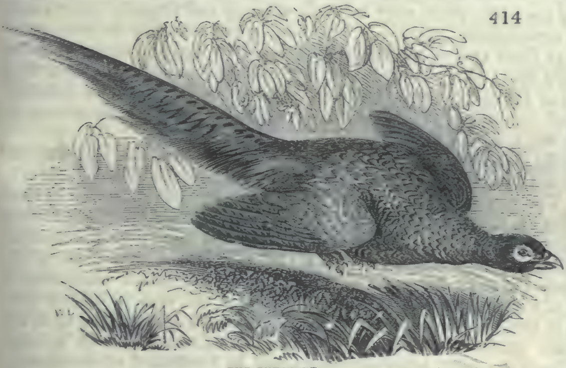

THE PHEASANT.

2635. *The common pheasant* is described by Bewick as being "two feet eleven inches in length. The bill is of a pale horn colour; the nostrils are hid under an arched covering; eyes yellow, and surrounded by a space, in appearance like scarlet cloth finely spotted with black; immediately under each eye is a small patch of short feathers of a dark glossy purple; the upper parts of the head and neck are deep purple, varying to glossy green and blue; lower parts of the neck and the breast reddish chesnut, with black indented edges; the sides and lower part of the breast the same, with pretty large tips of black to each feather, which in different lights vary to a glossy purple; the belly and vent are dusky; back and scapulars beautifully variegated with black and white, or cream colour speckled with black, and mixed with deep orange, all the feathers edged with black; on the lower part of the back is a mixture of green; the quills are dusky, freckled with white; wing-coverts brown, glossed with green, and edged with white; rump plain reddish brown; the two middle feathers of the tail are about twenty inches long, the shortest on each side less than five, of a reddish brown, marked with transverse bars of black; legs dusky, with a short blunt spur on each, but in some old birds the spurs are as sharp as needles; between the toes there is a strong membrane. The female is less, and does not exhibit that variety and brilliancy of plumage which distinguish the male: the general colours are light and dark brown, mixed with black, the breast and belly finely freckled with small black spots on a light ground; the tail is short and barred somewhat like that of the male; the space round the eye is covered with feathers. In many gentlemen's woods there is a kind as white as snow, which will intermix with the common pheasant. The common pheasant, however, is the only one of its kind that has multiplied freely in our island. Pheasants are generally found in low woody places, on the borders of plains where they delight to sport; during the night they roost on the branches of trees. They are very shy birds, and do not associate much together, except during the months of March and April, when the male seeks the female; they are then easily discoverable by the noise which they make in crowing and clapping their wings, which may be heard at a considerable distance. The hen makes her nest on the ground like the partridge, and lays from twelve to fifteen olive coloured eggs, which are smaller than those of the domestic hen; the young follow the mother as soon as they are freed from the shell. During the breeding season the cock pheasant will sometimes intermix with our common hen, and produce a hybrid breed, of which we have known several instances." (*British Birds*, vol. i. p. 321.)

2636. "*It is now generally admitted*," says Sir William Jardine, "that the pheasant was originally introduced into Europe from the banks of the Phasis (now the Rioni), a river in Calchis, in Asia Minor. The Greeks, in the ascent of the stream, were attracted by their beauty; and the bird being so easily domesticated, a valuable addition to the luxury of themselves and the Romans was soon secured, and rapidly extended itself over the southern countries of Europe. They appeared at the expensive and superabundant repasts of the ancients, and for a time bore the palm for novelty; and Heliogobalus in his ostentation is said to have fed the lions of his menagerie with them. The pheasant may be said to have been originally restricted to the Asiatic continent, extending over the greater part of it, and reaching to China and the confines of Tartary." (*Naturalist's Library*, vol. iii. p. 190.) It is at the present time, however, much more extended; and its hardihood of constitution is such as to fit it for almost every climate. It is abundant in Siberia, and it has some few years since been introduced into North America. The period of its introduction into Britain is not certainly known: "the price they bore," says Mr. Daniel, "according to Echard's *History of England*, A. D. 1299 (being 27 Edward I.), was 4*d.*" It should however be remembered, that at this time the value of a mallard was 1½*d.*; a plover, 1*d.*; a couple of woodcocks, 1½*d.*; wheat was sold for 1*s.* 8*d.*, and at some places for 1*s.* 4*d.* per quarter, or 4*s.* of our money. A fat lamb, from Christmas to Shrovetide, 1*s.* 4*d.*, and all the year after 4*d.* Pheasants were not originally inhabitants of America; their wings being short, they are ill adapted for long flights; therefore it is more probable that they have been purposely sent to every place which they now inhabit, than that they came there by chance. This is ascertained by their complete imprisonment in the Isolo Madre, in the Lago Maggiore, at Turin, as they cannot fly over the lake; and, unless picked up by the boatmen, are always drowned when they attempt it. Sonnini relates, that the pheasants of some of the northern islands of the Archipelago, and which come thither from the woods of Thessalia, are larger and handsomer than those of other countries; and that it is an amusement for the rich Turks of Salonica to fly at them birds of prey, which they carry on their fist. "When the pheasant takes its flight, the bird of prey which they let loose, hovering above, compels it to perch on some tree; he then places himself on another branch over its head, and keeps it in such terror, that it suffers itself to be approached, and easily taken alive. This fact," continues Mons. S., "sufficiently develops the mystery of fascination." (*Rural Sports*, vol. iii. p. 33.)

2637. *A gastronomic hint* of Mr. Daniel cannot be passed over. "These birds," he says, "are no less salutary than beautiful. When the ancient physicians spoke of the wholesomness of any viands, they made their comparison with the pheasant. The hens are certainly more juicy, and every way preferable; still the real sportsman feels a twinge whenever he sees a hen pheasant destroyed. They are best roasted, and the most eligible mode of dressing an old cock is (after being kept a proper time) to stuff him with the lean of the inside of a sirloin of beef cut into pieces the size of dice and well-seasoned; the gravy issuing from the beef gradually diffuses itself through the flesh, and renders it less dry and hard than when destitute of this supply." (*Ibid.* p. 35.)

2638. *The ring necked pheasant* is not, as Bewick would seem to insinuate, a mere variety of the common kind; but is an individual breed, native to China. It however associates with the common pheasant? But whether or not it breeds with it, is a question not yet decisively settled. Bewick's description of this bird is, that the only difference between it and the common pheasant consists in its white ring. But it is necessary to state, that correct as Bewick usually is, he is at variance, in this instance, with some modern authorities, who aver that these varieties do not interbreed. Were that the case, we should see half-collared, part-collared, and, indeed, an endless variety of markings, which Bewick, however, says he has seen. We hope this subject will yet occupy the full attention of experimentalists. Let us refer to Sir William Jardine. "The ringed pheasant," he says, "chiefly inhabits the forests of China, where the common species is also abundant; but in this natural state they never breed together. The eggs of the ringed bird also differ,—they are of a pale bluish green, marked with small blotches of a deeper tint; while those of the common pheasant are of an olive white, and without any spots. The ringed pheasant in its wild state is always of a lesser size; the extreme length never exceeding two feet five inches, and the tail itself is much shorter in proportion to the body. The head is of a whitish fawn colour, tinted with bluish green; and above each eye there are two white lines, forming a sort of eyebrow. The markings on the back are different and smaller, and the rump feathers show the same peculiar tint which the mixture of fawn and greenish blue exhibits: and, lastly, the white ring is broadest upon the sides of the neck, which is a mark which never can be mistaken. The female also differs in her lesser size and comparative length of the tail. The ground colour of the plumage is brown. There are no dark spots upon the breast, and the barring of the tail is very distinctly marked; but what Temminck has observed to be the principal distinction in the female is, a little band of thick and black feathers, which runs a short way under each eye, and which he thinks is wanting in the other." (*Naturalist's Library*, vol. iii. p. 193.) The complete individuality of either the common or the ring-necked pheasant is, nevertheless, not completely established, since we find Sir William Jardine thus continuing the subject:—"The pheasant sometimes also crosses with the domestic fowl. Temminck mentions this as requiring great attention to accomplish; but where poultry is kept upon the borders of a wood abounding with pheasants, it occasionally happens, and would do so perhaps more frequently, if favourable opportunities occurred; a specimen in our own possession, exhibiting all the mixed characters, was procured in a wild state. M. Temminck also records a solitary instance of a mule between the female common pheasant and male golden pheasant, which exhibited a curious but splendid mixture; all his endeavours, however, to procure a second specimen were ineffectual. The common pheasant breeds, also, freely with the ringed bird, and the offspring is productive. This has been considered by many as a proof that these two birds were identical; but in the whole of this order, and its corresponding one among quadrupeds, this law has a much more extended modification, and can scarcely be taken as a criterion, except in very opposite instances." (*Loc. cit.* p. 198.) Time however, and more extended experimental inquiry, will eventually settle the question; which, though important to the naturalist, is not so much so to the sportsman.

2639. *The preservation and increase of pheasants* are in many points of view important considerations with all sportsmen, all holders of manors, and indeed with the public at large; but the natural antipathy these birds evince to become domesticated like others of the gallinaceous fowls, has tended much to prevent their increase, and even to lessen their numbers. Were the pheasants, like the turkeys, to be so domesticated that they could be housed at night, and driven out by hundreds to feed in the morning, their number might be unlimited. But the spirit of independence in this race, unless long domesticated, is such, that under any restraint neither will the hen lay her usual proportion of eggs, nor attend to her young when hatched; and hence it is that the eggs are usually consigned over to the common hen. Mr. Waterton of Walton Hall (than whom few are more deeply read in Nature's works) offers on this subject some interesting remarks:—"Notwithstanding," he says, "the proximity of the pheasant to the nature of the barn-door fowl, still it has that within it which baffles every attempt on our part to render its domestication complete. What I allude to is a most singular innate timidity, which never fails to show itself on the sudden and abrupt appearance of an object. I spent some months in trying to overcome this timorous propensity in the pheasant, but I failed completely in the attempt. The young birds, which had been hatched under a domestic hen soon became very tame, and would even receive food from the hand, when it was offered cautiously to them They would fly up to the window, and would feed in company with the common poultry. But if any body approached them unawares, off they went to the nearest cover with surprising velocity. They remained in it till all was quiet, and then returned with their usual confidence. Two of them lost their lives in the water by the unexpected appearance of a pointer, while the barn-door fowls seemed scarcely to notice the appearance. The rest took finally to the woods, at the commencement of the breeding season. This particular kind of timidity, which does not appear in our domestic fowls, seems to me to oppose the only, though at the same time an insurmountable, bar to our final triumph over the pheasant. After attentive observation, I can perceive nothing else in the habits of the bird to serve as a clue by which we may be enabled to trace the cause of failure in the many attempts which have been made to invite it to breed in our yards, and retire to rest with the barn-door fowl and turkey. Though a preserve of pheasants is an unpopular thing, still I am satisfied, in my own mind, that the bird cannot exist in this country without one. At the same time, I am aware that a preserve may be overdone. Thus, when pheasants are reserved for a day of slaughter, under the appellation of a *battue*, the regular supply of the market is endangered, and the diversion has the appearance of cruelty, and no good end seems to be answered. It exposes the preserves of pheasants, in general, to the animadversions of an angry press, which are greedily read, and long remembered, by those whose situation in life precludes them from joining in the supposed diversion. However ardently I may wish to protect the pheasant in an ornithological point of view — I say ornithological, for its flesh I heed not — still, I am fully aware that the danger to be incurred, and the odium to be borne, are mighty objections. We read, that the ancients sacrificed a cock to Æsculapius: perhaps the day is at no great distance, when it will be considered an indispensable act of prudence, for the country gentleman to offer up his last hecatomb of pheasants at the shrine of public opinion. The more we look into the habits of the pheasant, the more we must be persuaded that much more attention ought to be paid to it than is generally paid to other kinds of game. The never-failing morning and evening notice which it gives of its place of retreat, together with its superior size, cause it to be soon detected and easily killed. The tax, too, which government has put upon it, enhances its value as an indispensable delicacy at the tables of those who give good cheer. In fact, few are the autumnal and winter dinners of the wealthy where a roasted pheasant does not grace the second course.

"The poacher's means for the destruction of pheasants are various. The report of a gun, or a clap of thunder, during the night, will often cause the pheasant to begin to crow, as I have already stated; and this greatly endangers their safety. When once they are frightened from their roost, they never perch again during the remainder of the night, but take refuge among the grass, and underneath the hedges, where they fall an easy prey to the cat, the fox, and the stoat. A poacher, armed with a gun, finds a cloudy night fully as good for slaughter as one in which the moon shines; and, if larch trees grow in the wood, to these he resorts, knowing, by experience, that the pheasant prefers this kind of tree to any other. The larch suits pheasants admirably, on account of its branches growing nearly at right angles from the stem: this renders the sitting position of the birds very easy. I consider the smoking of pheasants, while they are roosting in a tree, as a mere idle story. I myself ought to be a pretty good hand at poaching; still, I am obliged to confess that I have never been successful, in one single instance, in the many attempts I have made to bring down the pheasant from his roost by the application of a smoking apparatus. Indeed, when we reflect that the mouth of the bird is always shut during sleep, and that both it and the nostrils are buried in the dorsal feathers, we are at a loss to conceive how the smoke can enter them, and cause the bird to fall in stupefaction. If smoking were a successful method, depend upon it the poachers would never be such noodles as to use a gun, the report of which is sure to bring an attentive keeper up to the scene of their night's diversion." (P. 309.) We hope to stand excused for making so long an extract, but we consider the importance of the subject, and the high character of the author required it. Nor are we well pleased that our limits will not allow us to give the whole of the account connected with the increase and protection of this favourite bird, but which may be met with at large in Loudon's *Magazine of Natural History*, vol. vi. p. 308., a reference to which we pledge ourselves will repay the reader's trouble. We would likewise strongly recommend Mowbray's *Treatise on Breeding and Rearing Domestic Poultry* for a very judicious code of instructions on the breeding and rearing of pheasants, in which it seems the author was much assisted by Mr. Castang, formerly proprietor of the well-known menagerie in the New-road, whose long acquaintance with the subject must have greatly enhanced the value of the information he gave. It is in the spirit of approval of the labours of Mr. John Lawrence, that we would propose to him that, in the next edition of this useful manual, he should drop the soubriquet of Mowbray, its own sterling merit being such, that its real author need not be ashamed of such a bantling, and the encouragement of the public being also such, that they deserve to know to whom they are so much indebted. Mr. Daniel likewise, in his *Rural Sports*, enters very fully into the methods of breeding and rearing pheasants, both by natural and artificial means, as will be seen by a reference to that useful and amusing work. We may take this opportunity of remarking on the aptitude observed in the gallinaceous birds to destroy and, as it appears, to devour serpents and other venomous reptiles. The Hon. and Rev. Charles Bathurst (to whom we also are indebted for some valuable communications) in a letter to Dr. Chalmers writes, "Lord Bathurst's park, &c. is two miles from this place (Siddington, near Cirencester), and in his woods, near the keeper's house, peacocks, are kept as ornaments to the wild scenery, but not, as far as I have ever heard, or even since reading your paper been able to learn, for the purpose of destroying serpents. I do not make out that they are esteemed in *this* part of the country the natural enemy of the serpent tribe; neither do I see, in any of the works of natural history which I have consulted since reading your article, that this peculiarity has been noticed. Among ancient naturalists, Aristotle and Pliny say not a word on that subject: Buffon and Bewick, you say, do not mention this peculiarity, so I have not consulted them; but I have looked into Goldsmith and Blumenbach, but find it not there either. However, it may not be uninteresting to you, as in a great measure connected with your subject, to mention a circumstance which recently came to my knowledge: —My friend Sir John Ogilvy, who has lately been staying with us, told me that last year, when riding to Halnaker Park in Sussex, he saw a pheasant with a long thin substance in its beak, and, upon his making towards the bird, he flew off and dropped his prey, which turned out to be a slowworm, or blindworm (*Anguis fragilis*). The pheasant has by this anecdote been proved to prey on serpents; and if it be true of the pheasant, why should it not be true of the peacock, for they are both species of the same order, *Gallinæ?*" (*Magazine of Natural History*, vol. vii. p. 152.) We may also add from the same source, that the attention of the late Mr. Sykes (M. P. for Hull) being attracted to the efforts of a peacock to break the glass frame which covered a hot-bed, he removed it, when the peacock instantly leaped into the bed, and scratching away some of the manure exposed to view a nest of young serpents, all of which the peacock, with a little assistance, instantly killed and devoured. We hope these and other notices which have appeared on the instinctive warfare which the gallinaceous birds generally make on serpents, as well as on many other noxious animals, will gain them the good opinion and humane protection of the sportsman against any unnecessary cruelty committed on them during his lawful pursuit of these birds. The pheasant occasionally grows to a very great size: Mr. Daniel notices one in 1810, near Whitehaven, which weighed fifty-six ounces, and measured from bill to tail one yard five inches. Mr. Missing of Titchfield, Hants, killed on the estate of John Fleming, Esq. (M. P. for that county) November 23d, 1827, one which weighed three pounds nine ounces, and measured from one extremity to the other three feet ten inches.

2640. *The multiplication and preservation of pheasants.* It is fit that, ere we enter on our instructions how to destroy these birds in the most sporting like manner, that we meet the threatened waste, by offering information on the most effective methods of breeding and rearing them. Instructions for this purpose may be met with in Mowbray's excellent work already noticed, and there are many professed breeders of pheasants in several of our midland counties, as Herts and Bucks, who are ready to supply them when wanted. Every gamekeeper also ought to know where to procure eggs, and how to hatch them in such numbers, that even the severest battue, or the most deadly epidemic, shall not wholly destroy them. Mr. Barker Daniel also treats on this subject with his accustomed perspicacity, and his very active mind and sporting habits led him not only to write, but likewise to experiment, on the matter. We believe that few, if any, of the gentlemen in the county he lived in could excel him in whatever he undertook connected with field sports; he not only reared his pheasants, but broke his sporting dogs of every description himself. We know his spaniels, in particular, were equal if not superior to any others in Essex, or in any of the surrounding counties where they had been hunted under competition. Mr. Daniel himself allows that they were so very excellent, that he was once desired to fix his own price upon six brace and a half, after being offered 150 guineas for them. He had, for many years previously, purchased at various times at least four score spaniels, all with excellent characters; but which, with the exception of four brace, were regularly consigned to the *halter* for incorrigible hare hunting; nor would he ever have succeeded to his wish, but by procuring Mr. Hoare's breed, after that gentleman's decease; in possession of which, and by attention to obtain any cross that could improve them, he at length effected his object. Amidst a great abundance of hares in all the manors he preserved, he had at one time in his possession six brace of spaniels that would not, individually or collectively, run a hare thirty yards: it will readily be supposed that, with such dogs, he could not fail of finding all the game that any covert contained; he seldom lost a wounded bird, nor (unless in the pursuit of a winged pheasant, when they sometimes laid hold of his tail feathers, which, from his rapid running, he left in their mouths) did his spaniels ever break or rumple their game. (Vol. iii. p. 68.) As we knew this gentleman personally from his visiting us at Tollesbury Lodge, and also from often meeting with him in company, we are prepared to speak of him as a well-bred gentleman, and so universal a sportsman, that he excelled in almost all field sportings. "The Rev. William Barker Daniel," says Mr. John Lawrence (who was both his countryman and townsman, and, as it seems, knew him and his family intimately) "was an Essex man. He was a nephew of Lady Barker, the reputed *chère amie* of the Culloden Duke of Cumberland. The deceased had originally a sufficient estate, and resided in his native county, until either imprudence or misfortune located and fixed him in *banco regis* for the remainder of his life, a term extending, as I recollect, to about forty years. His age was probably given somewhat incorrectly in the newspapers: I think it must have extended several years beyond fourscore." Of his *Rural Sports* we need say no more than that the work has been abused by many who copied from it; and has been lauded, as it justly deserves to be, by all impartial critics. It had its errors, without doubt, as every work has; let him therefore, in whose writings no error can be found, let him, and him only, wag a tongue, or pen to dispraise. We apprehend that Mr. Lawrence considerably overrates the period of this gentleman's confinement, but, without doubt, unintentionally.

2641. *In attempting to raise a stock of pheasants*, as much as possible study their tastes and aptitudes. "They show," Mr Daniel very justly says, "a great preference to certain localities, among which aldercars, willow-garths, saltings, or marshes close to the sea, or cliffs with any furze or cover in them, and which join the salt water; for, like pigeons, they are great lovers of salt. If in such natural advantages of situation they are moreover tempted to continue by a regular supply, during winter, of their favourite food, they will soon be as plentiful as can fairly be desired; and will prove that the character ascribed to the pheasant, of being a determined rambler, is void of all truth. Doubtless driving a covert thrice a week with a team of spaniels, as noisy and numerous as a pack of hounds, will be sufficient to induce any animal, possessing the ability, to shift its quarters; but where a pheasant can obtain food and enjoy quiet, he is of too indolent a nature to be flitting through a country in search of adventures. It has been contended, that pheasants are always shy, and difficult to be tamed. I have had them (he says) pinioned, and let run with the common poultry; and they were equally domesticated; and some, hatched under hens, remained in or about the garden until the spring following, and then probably bred at no great distance. During one winter a brace of cocks and leash of hens, so fostered, regularly perched upon trees not five yards from the bed-room windows; and these birds in the daytime would take bread out of the hand that offered it. But without having recourse to instances where the *will* was restrained, and the natural dread of man counteracted, from the earliest period of their existence, by his appearing almost constantly before their eyes; we can assert the original breeds fed there would immediately come to the keeper's whistle, follow him by scores, and scarcely allow the peas to run from his bag into the troughs before they began to feed; those that could find no peas at one, would attend him with the same familiarity to other troughs, until they obtained room: yet these were birds with all their native wild habits, and hunger alone could not have induced this intercourse, as they were regularly fed twice, and sometimes thrice, a day." (*Loc. cit.* p. 46.) There might also, to this domestic attention of feeding the pheasants by hand, be added the machine known as the *pheasant-feeder* (*fig.* 415.), which, being placed in some convenient but rather retired spot near the keeper's lodge, would not only assist in keeping them together, but might attract any other stray pheasants also to locate themselves, and to breed in these woods. This pheasant-feeder is manufactured both of iron and tin, and may be procured of Messrs. Bailey, 272. High Holborn, and of Mr. Weir, Oxford-street. Mr. Berners, of Woolverston Hall in Suffolk, pursues a novel method of keeping pheasants within some particular covers where they are fed, by placing boys from day-break till dark, with long sticks, at short distances from each other, by the sides of these covers, who, by the noise they make with their sticks against the bushes, and their talking, effectually deter the birds from approaching the boundaries of the wood where the sentinels are stationed, and from running into the adjoining fields to feed, which happen not to be Mr. Berners' property." The great danger to be apprehended is, that the hens of the adjoining manor will sport their love-call, or invitation, to these their neighbours; for they are well known to love variety.

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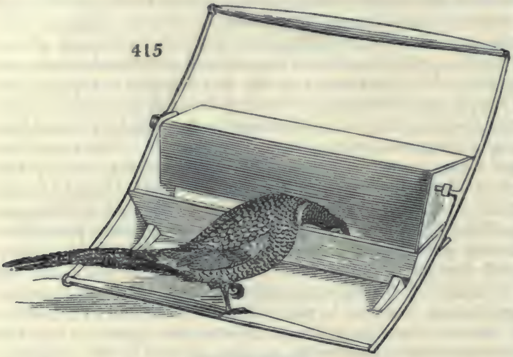

PHEASANT-FEEDER.

2642. *The directions for pheasant breeding and rearing*, laid down by numerous writers, of course vary. Mr. Waterton and some other ingenious naturalists have touched on the subject; and notices to this effect, as well as many collateral matters, may be met with in Loudon's *Magazine of Natural History*, to which we would refer the inquirer. Mr. Daniel rests on two plans for breeding these birds, both of which he says may be depended upon. "In a mew," he writes, "the hens will drop many eggs, but they very rarely dispose them properly in a nest, or sit upon them; the task of incubation being for the most part performed by a common hen (the silk-fowl and bantam are by some kept solely for this purpose). According to Buffon, when first hatched, they should be fed with hard boiled eggs, crumbs of bread, and lettuce leaves, well mixed, with an addition of the eggs of meadow ants. At this tender age two precautions are essential, viz. never to allow them any drink, nor carry them abroad until the dew is entirely off (every kind of humidity being hurtful); and that their food be given frequently, and in small quantities, beginning at day-break, and always mixing it with ants' eggs: the place must be kept extremely clean, and they should be taken in before sunset. In the second month nutriment more substantial may be given, such as eggs of the wood ant, wheat, barley, ground beans, woodlice, earwigs, and other small insects, to make a variety; and the intervals between the meals may be gradually prolonged. At this time they begin to be subject to vermin: place small heaps of dry earth or fine sand, by tumbling and rubbing in which they will soon rid themselves of the painful itching occasioned by them. Water must also now be given frequently, and always clean, else the pip may be contracted; which should be removed as in common chickens, and that then the bill be rubbed with bruised garlic mixed with tar. The third month is attended with new diseases; the tail feathers then drop, and others appear — a sort of critical period to the pheasant as well as the peacock. Eggs given moderately are efficacious in combating the trying complaint, and lessening its danger. The younglings may now be carried, with the crib, into the field, where the colony is to be dispersed: if white clover grows in it the pheasant chicks will pick the seeds out of the heads, and it will wonderfully strengthen them (white clover seed also given when wheat or other grain is used, will prove very nourishing): they must also at first be fed in the field with some favourite food, but never twice in the same spot, and the quantity may be diminished daily; and thus by degrees they will be constrained to provide for themselves, and become acquainted with the country. When able to procure subsistence, they will soon grow as wild as those bred in the woods, with this exception, that they will retain a sort of affection for those spots into which they were first resigned to liberty and nature."

2643. *The second plan is more circumstantial*, and is as well worth the observation of those who accidentally hatch them from eggs mown over in clover, grass, &c. as when obtained from the eggs of pheasants kept on purpose. The same method will also answer for the rearing of partridges. "Have frames seven feet long, and two feet and a half wide, similar in their form to those for cucumbers, and without a bottom; the large end is to be made as a coop for the hen, the bars wide enough for the young pheasants to run from the hen to feed in the frame, which is to be covered with a fine meshed net. If pheasants are kept from which the eggs are to be procured, there should be seven hens to one cock. To forward their laying, give white peas; when they drop their eggs stick them in bran, with the small end downwards, until there are fifteen, which are a sitting for a hen. Get small square boxes, wide enough for the hen to turn in, with covers to hasp down, and holes to admit the air; make a nest of clean wheat straw; every morning take the hens off, and put them under small coops, allowing to each a quarter of an hour to feed and empty themselves; then replace them on the nest until the next morning: when they have set a fortnight, remember to sprinkle the eggs with milk-warm water every morning, just before the hen is put upon the nest, to prevent the eggs being shell-baked; when hatched, let them remain with the hen eight hours to dry; then move them into the coop in the frame, upon gravel, in the eye of the sun; feed them with small ant-eggs; and after a week move the frame upon grass in a warm place. There must be a sliding-board to pen the young with the hen when moved; each frame must have small pans for water, and that for the hen must be fixed to the coop, out of the young birds' reach. Every morning give the young pheasants curd made with new milk; small ant-eggs during the day: at a month's end put a small piece of saffron into their water, and every morning, for each frame, give a good sized toast steeped in chamber-lye, which will keep them free from distemper, and is of the first use in causing easy moulting. Use the young birds to a whistle when fed, which should be four times in the course of the day. When the poults are large, there should be a hole in the small end of the frame to let them out and in, and a sliding-board to pen them in at night, when they are always to be covered with mats. Before the hole is opened in the morning there should be food, such as large ant-eggs, buck-wheat, and other grain, laid near the frame; every day this is to be moved further from it: by so doing they will soon partly learn to take care of themselves, and at the sound of the whistle will come in from all quarters like pigeons: when they gradually disregard the whistle, and at last desert it, they are safe, and capable of providing for their own sustenance and safety." (*Rural Sports*, vol. iii. p. 48—51.)

2644. *Mutations among pheasants.* We hardly need inform the sportsman that Nature appears to the full as fond of sporting as himself. One very remarkable effect which age appears to have on the hen pheasant is, that sometimes at an early period, but more frequently when she altogether ceases to lay, her plumage will assimilate in a greater or less degree with that of the male. The celebrated John Hunter was at much pains to discover whether the internal parts had taken on a similar change; but in the cases met with by him and by many others, ourselves among the number, who had actually examined the bodies, no instance occurred where any organic change had taken place in the generative organs. Neither is this assumption of external male characteristics by age confined to gallinaceous fowls, but extends likewise to many other birds. Pheasants are also apt to be taken with a distemper in their early state, which proves very destructive to them. A correspondent, who signs himself Vectis (probably it is H. D. C., whom we know to be a rearer of this bird, and an ingenious experimentalist, Ed.), complains that those he attempts to rear die off suddenly about the time they are throwing off their crop and tail feathers, without any apparent illness, having food in plenty, of which ants and their eggs form a part, they having also air and exercise on the grass-plots, with a daily change of situation. We have known this happen so frequently, that it has called our particular attention to it; and we have observed that the affection complained of usually occurs when great calls are made on the constitution, particularly to furnish the crop and tail feathers, which, as being numerous and massive, require extraordinary powers. In eastern countries pheasants live much on aromatic plants, spice seeds, and other stimulants, which tend to make them so little obnoxious to disease. This consideration should be kept in mind, and should influence all pheasant breeders to give them, at these times particularly, a warming nutritious diet, as chopped eggs, shred beef, and other nutrients. Mr. Castang says, he had rather encounter all the vermin that could beset his menagerie, than this pheasant distemper. He gives alum curd and ants' eggs to combat it, with a frequent change of situation; which, in our opinion, is equally judicious and important. It commands a change of air and a change of food, for it offers many matters that would not otherwise be brought before them. We would recommend, in addition to what is above stated, that pepper pods and other aromatics be enlisted into the service, to increase the vital action of the system. (See some further very useful practical instructions on rearing pheasants at large in the work we have just quoted; see likewise Mr. Loudon's *Agriculture*, p. 1549. where the subject of pheasant breeding is treated on more at length.)

2645. *Mortality among pheasants.* It may be well to observe, that in some years a great mortality prevails among full grown pheasants also; but as its effects are only seen when remedies are unavailable, we can say little further on it, than that the peculiarities of weather, the preponderance or the scarcity of certain food they incline to, as well as the freedom of their residence from moisture, &c. &c. should all be noted as a future guidance, either to prevent, or cure, or both. To the preservation and increase of pheasants on a sporting domain it is requisite that there should be a keeper's lodge in the centre of every preserve; and that, between the pheasants around and the keeper, a friendly intimacy should be formed, so that at the ringing of a sonorous bell the pheasants may be summoned to be fed. We have, as we believe, already alluded to this arborary location of the keeper, near which the sound of a gun must never be heard, as essential to the preservation of the game on an estate; particularly it is of consequence to the welfare of the pheasants not located immediately around the keeper's lodge, that the means of feeding them likewise should be studied. Besides well thatched small mounds of beans, barley, oats, and buck-wheat, which they are very fond of, and still more so, if from a bean field there be left ungathered a quantity, from which they will not stray far; and if these are objected to, in lieu of them place within the inclosure the ingenious contrivance known as the pheasant-feeder (*fig.* 415. p. 858.) into which put such grain as will, during hard weather, snows, &c. supply food for both pheasants and partridges, although more particularly designed for the pheasant. In very dry seasons water-troughs likewise should be put here and there for the pheasants to drink from. In snows, strew the covers and the adjacent fields with unthrashed corn, having first swept away the snow, which will make the food more conspicuous; but keep an eye over the places, or snares will be set for the birds. Neighbouring pheasants will also be inclined to domesticate where they are best fed. Be likewise careful that your stock is on a fair sexual equality. If you have too many cocks, the hens will seek mates in other manors. Until the older cocks are matched, they will drive the young cocks away; consequently, a sufficient number of hens should remain for their pairing also. The judicious gamekeeper, who is fond of his birds, will be able to form a proper estimate of the relative proportion of the sexes; but as the pheasant is not remarked for his constancy, so if a few more hens than cocks remain on the manor, no great mischief will ensue; and the more, as the cock is not over nice whether he have one or two wives. However, a great disproportion is not desirable, it having been frequently observed, that, where the cocks had been killed off so closely, in such case the hens would seek distant coverts, to the great disappointment of the landowner and his friends. As this invariably happens, it becomes the more imperatively necessary to guard against a wanton destruction of the cocks among pheasants. Thus it is, that on a small manor, not in the immediate vicinity of great preserves, it is prudent to prevent a wanton destruction of the cock birds.

Subsect. 10. *Pheasant Shooting.*

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PHEASANT SHOOTING.

2646. *Pheasant shooting* (*fig.* 416.), which commences the 1st of October, bears about it an aristocratic character, that cannot fail of enhancing it in our eyes, although to follow it well up is sufficiently laborious. It is common to consider a pheasant as a very easy bird to kill; and to some, who can mark a penny-piece thrown up nine times out of ten, it may be so; but to most persons it is far otherwise. The professed snap shot frequently reaches him before he is twenty yards off, blows him to pieces, and gets laughed at as he picks up the mangled remains, or as Basto brings a half instead of a whole bird. Many circumstances may tend to set at naught some common notions of the methods employed. One very usual, but by no means a good conclusion, is, that pheasant shooters ought to employ spaniels only. Mr. Daniel, we believe, never shot pheasants but with spaniels; we know that he considered any other dogs used in this sport misplaced; but however this may be, his dogs seemed as though they were purposely made for this sport, so excellent were they. "Spaniels," says this gentleman, "for pheasant or cock shooting, cannot be too strong, too short upon the leg, or have too much courage; the thickness of the coverts will oppose, and sometimes almost overpower, even this combination of form and spirit. Should the woods be very extensive, when spaniels are steady from hares, they cannot well be too numerous; but if given to hunt hares, they disturb the pheasants. Upon no account accept or keep a spaniel (it is needless to tell a sportsman not to *breed* from) which has any taint of the hound in his pedigree, although for generations back; they will be sure to hunt hare in preference to winged game; and the stock may be crossed everlastingly, may attain beauty, strength, symmetry, yet this latent spark of the harrier will never be extinguished." (*Rural Sports*, vol. iii p. 66.) The keeper of Mr. Litenhouse shot pheasants to terriers; and we have known others do the same. This keeper had also one terrier that he had broken to point them steadily; and there can be no doubt that there are some advantages in this course, for the wiry-coated sort will penetrate the thickest cover with alacrity. When we went out alone for pheasant shooting, we usually shot to one very steady pointer, having a bell to his collar, and as the woods belonging to the manor of Tollesbury, which we held, were none of them large, and were likewise crossed with paths, one steady pointer with a bell was sufficient. On one occasion Mr. Daniel did us the favour of bringing over his spaniels, and truly they made a very good display, and made the welkin ring a merry peal; and it fortunately happened that our sport was excellent, although our woods were not very well stocked with game, having been previous to our taking them much neglected. Mr. Thornhill, an author not so often quoted as we think he deserves to be for his straightforward, impartial, and unassuming remarks, tells us that he also formerly made use of springing spaniels for pheasant shooting, particularly for three or four of the first weeks of the season, after which he found that the moment the pheasants heard the dogs they quitted the whole, or at least that part of the wood simultaneously. We have heard this effect said to be produced by spaniels, noted by others likewise; and, on more than one occasion, have witnessed it ourselves. It is, however, so enlivening a cry rung in our ears, and particularly so when the assembled gunners are sufficiently numerous to take different stations in a large cover, that, with the stirring effect of expectation, the thrilling sound of a whirr, and the joyous exclamation of *mark!* we should pity the phlegm of him who would not give the chance of a bird, more or less, to be thus excited. We can perfectly understand why the ardent sportsman daily seeks for excitement both for body and mind; but we have yet to learn how the destruction of twenty, thirty, or forty individuals of so beautiful a portion of the feathered creation, can constitute the happiness of any one, however extensive are his preserves, and however well stocked they may be with these birds: — *mais chacun à son gout.* To return, however, to the kind of dog which is best fitted for pheasant shooting; it must be allowed, that in this particular sport tastes vary much.

Some use beagles in this sport, and a few, as we have seen, employ terriers; which diversification is sometimes proper, and attended with success. But to meet with much sport by the use of either spaniels or beagles, it must be in a particular locality, such as thick hedgerows, furze plantations, and young woods, where the setter or pointer might stand unseen until his own and his owner's patience were exhausted. We need not hint to the well practised pheasant shooter, that the situations we have just noted are the most likely places to find pheasants after a very wet night, as they appear to be greatly annoyed at the droppings from the leaves of trees over their head where each drop falls almost with the emphasis of a stone. In pheasant shooting tolerably early assembling is necessary for a party of shooters, who would do well first to scour the stubbles of wheat, barley, and bean fields; for the birds that escaped from thence would take to the neighbouring woods; whereas those in the woods, when driven from thence, might not be polite enough to wait in the open field the visit of the sportsman. A foggy day is not unfavourable to pheasant shooting, the birds then stray abroad, and rove to considerable distances. Nevertheless we have always observed, that on those days pheasants are doubly alert with their ears, consequently springing spaniels are not good to quest with. We used on these occasions to go out with one steady pointer, of course unbelled, and when making our way cautiously alongside the hedgerows which skirted the covers, it was amusing to see how our own mincing gait was assumed, not mimicked, by the intelligent brute, who also crept stealthily along; and in this way, by close beating the patches of cover very quietly, we seldom failed in finding sport. On the contrary, when a very bright day shines over the head, and having tried the morning feeding grounds, we would advise the gunner to scour the woods well. If it be done with pointers, and you take two, let both be belled; one should have a light tinkling bell, which should be the dog that stays more closely to you than the other; which difference almost always occurs between two dogs. The wider ranging dog may have a bell of much deeper tone, and thus you will be readily apprised which dog has the point, and you will act accordingly. If you value the strict discipline of your pointers, never enter a wood without a staunch retriever; a bird being killed or wounded, your pointers come to *heel* instantly; your retriever is *hied out*, and finds your bird — he returns and places it in your hand. Every one enacting their parts in the drama in this methodical way, you feel the pleasure which thrills through the breast of every one who has done his *work* in a *workmanlike* manner.

2647. *Avoid killing a hen pheasant*, except on some very particular occasions; the principal one is the increase of the hen birds to such a degree as to out-number the cocks. As this does happen occasionally, then to thin them assists the general stock; but we fear that this excuse is sometimes made when it ought not to be. It was a very excellent conventional understanding, that a fine of half-a-guinea should be paid to the keeper of the manor, whenever a hen bird was killed. It is, however, often evaded; and from the novice is not exacted sometimes, when we think that it ought to be. The size of the cock, the length of his tail, and his occasional call to his mates when all of them are absent, are sufficient guides for the most inexperienced; therefore never *excuse* the fine. What says the poet Pye: —

> "But when the *hen*, to thy discerning view,
> Her sable pinion spreads, of duskier hue,
> The attendant keeper's prudent warning hear,
> And spare the offspring of the future year;
> Else shall the *fine*, which custom laid of old,
> Avenge her slaughter by the forfeit, gold."

2648. *In pheasant shooting*, whatever dogs are employed, be particularly careful that they are so well broken in, as not to notice other game. If spaniels be used, the thickest cover should not daunt them; and then the more there are, the more sport they will show, provided all are broken from questing any other game than that it is intended they should hunt. If they are not, as Mr. Daniel says, "they disturb the pheasants who just fly up, and perch upon the lower boughs; and the ground of the covert is in vain traversed and beat for birds that are already some yards above it: in short, a spaniel that follows a hare further than whilst in view, is never worth keeping. Other circumstances to be minded are, that when a spaniel is once put into a covert, he is never to quit it to range in the fields, which some slippery ones will do, whilst their owners are beating within it. When a spaniel owns a haunt, and quests freely, there should be no disappointment; whenever the notes are doubled, their master should be certain there is game, and accordingly press forward. Much depends upon the practice which spaniels have: the constant use, and the killing of game to them, is as essential to the steadiness of a high-mettled spaniel, as to a high-bred foxhound; neither can be worked too hard, if kept well in blood." Mr. Daniel justly cautions every breeder of spaniels to be most careful that the breed is strictly pure; above all avoid the most distant cross of hound in him; although the stain may have been generations back, he will hunt hare in preference to winged game. "A stronger instance," says Mr. Daniel, "could not well be exhibited, than in the spaniels of the deceased Lord Waltham and Mr. Hoare: a road only parted the seats of these two gentlemen, and their gamekeepers frequently shot in the woods together; their dogs were equally handsome, but those of the former would drive hares the day through, and consequently sprung every thing that accidentally laid in their course, whilst those of the latter no more ran hares than they did sheep; they would, indeed, find the hares, but follow no farther than they saw them: they were always in their places, twisting around every stub with that agility, and possessed such fineness of nose, that neither woodcock nor pheasant could escape their search. Lord Waltham's spaniel bitches had originally a cross of the beagle, and although this was tried to be remedied by resorting to the best dogs, the tendency to *hare* could never be subdued." (*Rural Sports*, vol. iii. p. 68.) To this we would add one or two more hints on the subject of *cover beating*, which we are the more inclined to do, because it is equally applicable to cock as to pheasant shooting. Try your ground thoroughly with yourselves, your dogs, and your beaters. A nide of pheasants is often collected near together. Woodcocks are not gregarious essentially, but we have, ere now, flushed three from one spring; and both these birds in the middle of the day will often lie close, particularly when they hear that the enemy is abroad. The morning's scent also, when almost evaporated, makes it necessary that yourselves, dogs, and beaters, should hunt the closer. Try every part of the cover; pheasants are capricious, but in the forenoon are often found under the bushes and brambles, which frequently surround the larger trees of the forest. If a slip is to be found, they are very likely to be there; and if such slip be mossy and sludgy, it will probably harbour a woodcock likewise at the right time of year.

2649. *The time of the year* has much influence over the methods employed in pheasant shooting; and the sport altogether materially differs, whether it be in October or in January. When the leaves have fallen, not only are the birds more scarce, but they are more wary also; and if, in the early part of the season, they have been much shot at, they will almost every one leave the wood as soon as they hear the sounds of a shooting party. Whatever the time of year may be, we however would again advise the sportsman to make every portion of his ground good, either by his own tread, or by the close hunting of his friends and their dogs, as well as to beat closer as the day advances, for the morning scent evaporates: particularly we would recommend to the junior sportsman, that, after having well beaten a wood throughout, he makes a détour around, which very often affords him a few more shots. In our own opinion December, however, should close the pheasant shooting practice, and if the owner of the wood himself be the delinquent, he deserves to suffer from it; for it is two to one that the remaining pheasants will mate themselves with those of other localities; for though they are, to a certain degree, domestic birds, and if well fed, and not eternally hunted, are tolerably constant to their birth-place, yet continued warfare will force them to irrecoverably quit covers so often disturbed. Pheasants likewise are not easily kept to woods which harbour many woodcocks; for even though the pheasants may be spared, they will not bear the too frequent firing around them. In such case, if the covert be large, fence off a few acres surrounding the keeper's lodge, if there be one at hand; and such a lodge should exist in every extensive wood, and should be also tenanted by an inmate of determined courage, and unimpeachable honesty. If this be done, the skirts of the wood will afford good cock shooting; and, in the open patches, snipes likewise will harbour. A variety in the game is very pleasing to many to practice on, although it is not so sportsmanlike as confining your chasings principally to one object. If you are determined to pull down whatever comes in your way, whether hare, rabbit, pheasant, woodcock, or snipe, then use a double gun, and employ shot of different sizes. Use also a dog that cannot be spoiled; a retriever, for instance, will answer the best; or, in default of that, a good poodle.

SUBSECT. 11. *Battue Shooting.*

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BATTUE SHOOTING.

2650. *The battue* is a general gathering of *bush beaters* and gunners, usually of the higher orders (*fig.* 417.), when a very large preserve is overrun with game. In such case the owner invites his friends, and perhaps his tenants, to a grand battue or attack, sometimes on the pheasants only, when they swarm; and sometimes the battue includes every variety of game that is met with, except any one kind be particularly interdicted. We lament when we hear of this indiscriminate slaughter, not only on account of the animals destroyed, but because we think it affords the sensitive and the fastidious an excuse for slandering the sport we are treating of as murderous and wanton. Mr. Daniel notices a day's battue on Mr. Colquhoun's manor at Writham, in Norfolk, when the late Duke of Bedford and six other gentlemen in the year 1796 killed eighty cock pheasants and forty hares, besides partridges, in one day. Mr. Coke also in one day of October, 1797, upon his manor at Warham, and within a mile's circumference, bagged forty brace of partridges in eight hours at ninety-three shots; every bird was killed singly. The day before, on the same spot, he killed twenty-two brace and a half in three hours. In 1801 this gentleman killed, in five days, 726 partridges. In January, 1803, Mr. Coke, Sir John Shelly, and Mr. T. Sheridan, went over to Houghton in Norfolk, on a *chasse* for their friend Lord Cholmondeley, and killed there, with their three guns only (in one day), fourteen brace and a half of hares, sixteen couple of rabbits, twenty-four brace of pheasants, thirteen brace of partridges, and sixteen couple of woodcocks. The battue is a word of French extraction, literally bush beating; but the shooting it characterises is, we believe, practised in Germany, Flanders, and some other continental states, as in France. Of the grand battues of France, particularly those which were patronised by the Duke of Bourbon, in the neighbourhood of Chantilly, some notice is taken at p. 90. In Germany the princes and nobility exhibit also very extraordinary spectacles of this wholesale slaughter. In proof we may quote M. Dutens, *Itineraire*, edit. 1793. p. 153.; where, we are told by him, that "Game is in such abundance in Bohemia, that, in the year 1753, the emperor Francis I. made a shooting excursion to one of the estates of Prince Colleredo; in the space of eighteen days the imperial sportsman fired 116,209 shots, and killed 19,545 partridges, 18,243 hares, 9,499 pheasants, with other inferior game, amounting to 47,950. I had this anecdote from the Prince Colleredo himself." With us, also, very great numbers of pheasants have been killed in a day of battue; and without doubt, to witness a dozen or two of well armed, well nerved, and well practised sportsmen met together, purposely to thin the numbers of individual or collective game, is a very animating sight. The general battue we cannot but consider as the most interesting. In the midst of the bustle my Lord A. pulls down a noble cock pheasant; the Duke of B. contents himself with flooring a partridge, which falls within a few feet of the woodcock prostrated by the hero of many battles. The battue of France, Germany, &c. &c. exhibits, however, much more masculine features than those of our country It is true, that one of these congregational shootings in Devonshire might, in former times, bring the sportsman into collision with a noble stag; but in extra British battue it is not uncommon to rouse a wild boar, or to unkennel an old wolf, in which case something more than child's play is enacted; and the fowling-piece of the sportsman is hardly sufficient to enable him to escape scathless.

2651. *The Swedish skall* may be considered as a species of battue, and a very interesting one it is, if we call to the remembrance of our readers its important objects, and its three days and nights' continuance, as described in p. 81. The actors in each of these battues are on the anxious look-out for adventure, certainly in this instance of a more masculine kind; but neither do the Swedish sportsmen neglect the minor game; and as arms are plentiful, so shots are numerous; and the welkin rings with the sounds of this extraordinary gathering. But if the interesting account of Mr. Lloyd be perused, the analogy, though forced, will strike; and, at all events, we shall have introduced so much to interest the reader, that he will resort to the work itself; and if, when he has perused, he do not thank us for the introduction of it to his notice, we shall indeed be surprised. Under this view the battue being considered as an assemblage of persons bent on the pursuit of a certain object or objects, we can trace its existence in many other countries besides those already specified. In India the battue is in daily practice; and while the well trained negroes pursue the wild hog or the jackal with their spears, &c. their master and friends are hunting the tiger at force to-day; to-morrow, probably, himself and friends will be shooting peacocks, snipes, &c. in the morasses. The rajahs call a hunquah, or Indian drive, by orders spread abroad, as the Swedes promulgate their skalls, or congregational gatherings to hunt, from the pulpit.

2652. *The Indian general hunt*, or oriental battue, appears from Mr. Johnson's account to be thus undertaken: — "The day before the hunt or driving commenced, several hundred people were sent to the leeward extremity of the reserved cover, where they fixed on a proper place, and set the nets, which extended about a mile, not in continuation, but at intervals. They required four or five elephants and twenty or thirty bullocks to carry them. Each net was about forty feet long and seven feet high; the cords being of the size of a man's little finger, lightly twisted, with meshes about eight inches square made without any knot whatever, simply by twisting the cords into one another, by which they were rendered more elastic, less visible to the animals, and not so cumbersome and heavy as if made with knots. Sometimes three or four nets were placed in succession, touching or overlapping one another; but more frequently they were intersected by jungle, which was made almost impenetrable by stakes driven down in the midst of it, and thorns twisted between them." (*Indian Field Sports*, p. 14.) It seems that these nets being set, platforms were raised near them which held small sentry boxes made of matting; or otherwise they sink pits, into each of which a sportsman enters armed with a gun, or bow and arrow. However, both to screen them from the sight and the attack of the savage animals to be entrapped, strong thorns are bent over each grave-like opening, which, after the entry of the persons intending to occupy it, are strongly lashed together, but so as to offer loopholes for shooting through. Sometimes a hunquah, when undertaken by a rajah, will occupy several thousand persons. Men, women, and children, all attend, and those who do not carry guns, spears, bows and arrows, take what will make much noise, and drive the beasts into cover, from which few escape, and in consequence for some months afterwards the natives, their children, and cattle, live in tolerable security. Such are the outlines of a battue or death-dealing assemblage of sportsmen, whether congregated for diversion or general safety.

SUBSECT. 12. *The Natural History of the Woodcock.*

2653. *The woodcock* (*Scolopax Rusticola* Linn., *fig.* 418.), among naturalists, is placed at the head of the snipes *proper*, and is thus accurately described by Bewick: — "It measures fourteen inches in length, twenty-six in breadth, and weighs about twelve ounces. The shape of the head is remarkable, being rather obtusely triangular than round, with the eyes placed near the top, and the ears very forward, nearly on a line with the corners of the mouth. The upper mandible, which measures about three inches, is furrowed nearly its whole length, and at the tip it projects beyond and hangs over the under one, ending in a kind of knob, which, like those of others of the same genus, is susceptible of the finest feeling, and calculated by that means, aided, perhaps, by an acute smell, to find the small worms in the soft moist grounds, rom whence it extracts them with its sharp pointed tongue. With the bill it also

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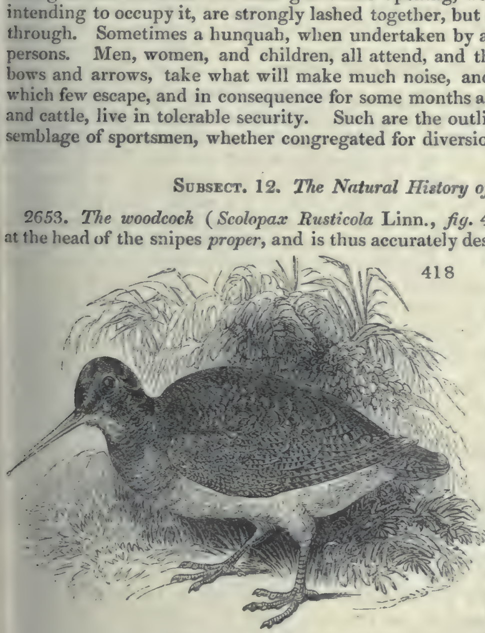

THE WOODCOCK.

turns over, and tosses the fallen leaves in search of insects which shelter underneath." (*British Birds*, p. 43.) We have here an opportunity of noticing some of the ingenious contrivances of Nature to meet as well the particular as the general wants of her creatures. It is evident, from what Bewick so truly says of the extreme sensibility of the mouth of the woodcock, that there must be some structural peculiarities present to answer these purposes. We will attempt to illustrate what these are, not by the woodcock direct, but by placing a sketch of the skeleton of his head A, in company with a dissected head of the woodpecker B; and, as both are insectivorous, and both are effective borers, by means of a lingual apparatus, it may be supposed that the mechanical contrivances made for the capture of insects deeply imbedded in either mud, earth, or decayed wood, would be much the same in both; and as we find Nature usually takes the shortest course to accomplish her ends, so here the actions of these birds in procuring their food being the same, the organs employed do not essentially differ. The tongue of the woodpecker is commonly described as being of an enormous length (*a*, *fig.* 419. B) but which account is not quite correct, as, upon a critical examination, the true lingual portion is short; but to it a long additamentary portion is added, which is little more than a horny extension terminated with barbs, so placed as to readily transfix any insects which the woodpecker might meet with, or any worms, &c. which the exquisite powers of discrimination in the woodcock might make him select. The letter *b* of the same figure points to one of a pair of muscles which arise together from the base of the upper mandible; these separating on the forehead pass around the head, and insert themselves into the lower jaw. *c* are cartilaginous straps to strengthen these muscles. Were we to offer nothing more than the figures, they alone would serve to show the admirable contrivance by which this instrument is made prehensile, and capable of extracting from any hollow which the bill (*fig.* 419.) of the woodpecker, or that of the woodcock, may enter. By the aid of Blumenbach we shall, however, further illustrate the subject. He says, "Much of the penetrating and prehensile action of this organ depends on a singular hyoid bone, of a very slender aspect, with very long pillars (*crura*), consisting of five gristly portions composed of a single piece and two pairs. In the quiescent state of the organ, the former lies in a fleshy and very extensile sheath of the bill. The first pair of cartilages is articulated with this, and they are placed at the sides of the neck. The second pair, commencing from these, run completely over the skull under the skin, and advancing from behind forwards, their converging extremities are placed together in a kind of groove, and commonly terminate anteriorly by an attachment to the right side of the upper jaw. This posterior pair of cartilages may therefore be compared to steel springs, which actuate the whole organ. This is an elegant example of the great share which mere elasticity possesses in the performance of some functions of the animal economy. When the tongue is to be darted out, the anterior pieces are drawn together, and enter the sheath of the single portion extended for their reception. The tongue is thus lengthened, and admits of being thrust out some inches." (*Comp. Anat.* p. 237.; see also p. 616. in our *Natural History of Birds.*) The more this subject is looked into the more shall we be surprised at the varied means employed by the Great Architect of Nature to enable his creatures to compass the ends necessary to their existence, in all of which consummate skill are manifest, although they are united with great simplicity in most cases. Colonel Montague also further illustrates this subject, equally interesting to the intelligent sportsman and the naturalist: — "The woodcock," he says, "is naturally a shy and retired bird, rarely taking wing by day, unless disturbed; but just at the close of day all, as if by common consent, quit the woods nearly at the same instant, and wander over the meadows in search of splashy places and moist ditches for food, retiring to their hiding-places again just at the morning dawn. Thus, when most other land birds are recruiting exhausted nature by sleep, these are rambling through the dark, directed by an exquisite sense of smelling to those places most likely to produce their natural sustenance; and by a still more exquisite sense of feeling in their long bill collecting it. The eye is not called into use, and, like the mole, they may be said to feed beneath the surface; and by the sensibility of the instrument

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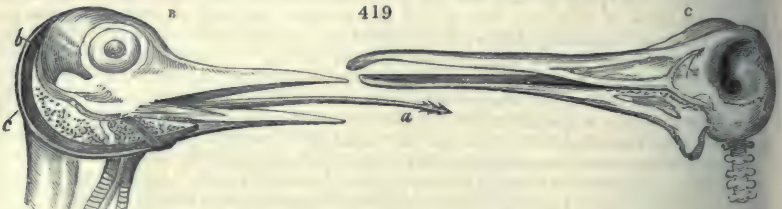

HEADS OF WOODPECKER AND WOODCOCK.

which is thrust into the soft earth, not a worm can escape that is within reach. The eyes of the woodcock are large in proportion to their general bulk of body, and, like those of some other nocturnal birds, are particularly framed for collecting the faint rays of light in the darkened vales and sequestered woodlands during their nocturnal excursions; thus also they are enabled to avoid trees and other obstacles which continually occur. The nerves in the bill of this bird, as in that of the duck tribe, are numerous, and highly sensible of discrimination by the touch. A woodcock in our menagerie very soon discovered and drew forth every worm in the ground, which was dug up to enable him to bore; and worms put into a large garden-pot covered with earth, five or six inches deep, are always cleared by the next morning without one being left. The enormous quantity of worms that these birds eat is scarcely credible; indeed, it would be the constant labour of one person to procure such food for two or three woodcocks. The difficulty of collecting a sufficiency of such precarious aliment determined us to try if bread and milk would not be a good substitute; and we found that, by putting clean washed worms into the mess, the bird soon acquired a taste for this new food, and will now eat a basin of bread and milk in twenty-four hours, besides the worms it can procure." (*Ornithological Dictionary*, p. 561.) The digestion of this bird must be rapid in the extreme, from what is here stated; and we can strengthen our assertion by an anatomical examination made on one soon after death, where the *cæca*, which was empty, was two-eighths of an inch in length. The gizzard, however, contained no animal matter, which was, without doubt, digested immediately; while a few vegetable fibres of a moss-like appearance, some small black flat seeds, a pebble, and a little sand, was all that was left within this glutton's alimentary tract.

2654. *The sex of the woodcock* has been considered as entirely unmarked by any external signs; internally the anatomist would readily detect it. It would however appear, according to Mr. Pennant, not so difficult to determine on as is supposed. On the contrary, he tells us it may be readily done by examining the outermost feather of the wing, which in the *hen* presents a narrow stripe of white along the lower part of the exterior veil of the feather. In the *cock bird* it is otherwise; the same feather at the same part is beautifully and regularly spotted with black and reddish-white. According to our own experience, there is this distinction perceivable; but it is proper to state that, in some cases, it is not so clearly marked as to make a heavy bet upon it safe. Another criterion with many is the size, which in the hen is said always to be the largest; but as far as our observations have been carried, were there no other marks, the size would be a very fallible one, it being so usual for these birds to vary little from each other in size. We hardly need to note, that the little pointed feather at the extremity of what is known as the bastard wing in each sex was formerly much sought after by artists, particularly miniature painters. The great improvements, however, made in the arts, have taught the brush-makers to equal these diminutive brushes, almost, as well as those of the bird himself. Woodcocks are known to arrive on our south coast during the month of October, more or less sparingly, according as the rigours of the country they leave, and the lessening of the supplies of food there force them away. They are probably also much influenced by a wind, which, blowing from their continental location, wafts them here without much exertion to themselves, which they are not able to bear, as we know by the numbers of dead picked up after a storm, or found to alight for shelter on the sails, spars, and rigging of vessels making for our shores. Their form of body and placing of wings, although large, are not so mechanically framed as those of some other birds for long voyaging; consequently, under these disadvantages, without the aid of a favourable gale, they are not likely to traverse an extensive passage. In November and December the larger bodies appear in *flights*, according as the wind serves their purpose. On their first arrival they usually show signs of excessive fatigue: it even appears indifferent to them where they alight, and thus they have not unfrequently been picked up in the open streets of the towns on the sea-coasts, being too tired to rise from the spot they dropped on. When this is the case, they are on examination usually found to be extremely lean, which presents to our mind a question not of easy solution. Is their absorbent system so active as to reduce their flesh in two, or at the most in three, days? As it is well known no such exhaustion is ever observed either in the redwing or fieldfare that arrive about the same time, we must look to constitutional peculiarity for a solution of this difficulty, which consists in the rapidity of their digestion, and the absence of all means of repairing their waste during their voyage. One, or at most two days after their arrival, the greater number depart, most of them to their former localities. It however occasionally happens, that at first they will visit mossy moors and light marsh lands for boring, until frosts set in, which hardening the earth, and thereby stopping their supplies of nutriment, they usually make their way to their old woods, where warm sheltered springs keep open the ground, and nourish the insects they feed on.

2655. *Three varieties of British woodcocks* are noticed by Dr. Latham: — "In the first the head is of a pale red, body white, and the wings brown; the second is of a dun, or rather cream colour; and the third of a pure white. Dr. Heysham, in his *Catalogue of Cumber-*

land Animals, mentions having met with one, the general colour of which was a fine pale ash with frequent bars of a very delicate rufous; tail brown, tipped with white; and the bill and legs flesh colour. In addition to these, some other varieties are taken notice of by the late Marmaduke Tunstall, Esq. of Wycliffe, in his interleaved books of ornithology." Mr. Daniel also seems to be aware of such a difference, for he observes, "That there are different sizes of woodcocks, it is presumed, will be assented to by all sportsmen; those found in the first of the season are of the largest size, fly heavily, and their heads appear to be muffled, especially the under parts, with short feathers: the most numerous tribe, which arrive in November and December, are rather smaller, their heads less, the feathers smoother, and the bills shorter. Woodcocks that come about Candlemas are also small, and differ in their manner of flying; are quicker of wing, take long flights, and are well known to be more difficult to be shot, from their not rising above the spray, like the larger muffled woodcock, but make their way for some distance, as it were, among the boughs." (P. 161.) M. Baillon also notices two kinds of woodcocks:—"The largest," he says, "arrive first, and may be distinguished from the others by the colour of their legs, which are of a greyish tint inclining to rose colour. The smaller kind have a coating similar to that of the common woodcock, but their legs are blue. Variegated plumage and other anomalies now and then occur among these birds; thus a pure white one has been seen, and we can only wonder that still greater variations do not more frequently take place; for although most sporting works, in their account of the woodcock, usually confine his foreign residence to the north of Europe, yet it should be known that he is likewise found in all the climates, both hot and cold, in the old continent, as well as in North and South America. It is however a curious fact, that he is every where an emigrating bird. His migrations in some countries appear, however, to be confined to a journey from the plains to the mountains, and *vice versâ*. In Europe he is located during the summer in the Alps, Pyrenees, and other lofty mountains, from whence he migrates to the regions below, and probably some reach us. His universality thus established, we need not be surprised that he should thus *sport* into varieties, seeing that every locality, according to its proximity or remoteness from what may be considered as its attracting spot for domestication for the time, has its influence over the size, colour, and even the aptitudes, of the animal."

2656. *It is a mortifying fact*, that the woodcock is by no means met with in such plenty as formerly: consequently it may be asked, what is the reason of this? It cannot be believed that the attachment of the inhabitants of Norway, Sweden, Denmark, and other northern localities, to the eggs of this bird, can have occasioned such a falling off in its numbers: it is impossible. Do we not know that millions of the eggs of poultry arrive here every year from France; yet, when we visited the French provinces, we saw a glut of poultry wherever we went: nor can a few hundred dozen of woodcocks' eggs be perceptibly missed among the myriads that are to be met with over the wide spread and densely wooded harbours it occupies in the north of Europe. Formerly these birds were stalked and springed; they are so still in some degree; but the worst is, that they are unmercifully pursued, not as formerly by one gunner from every village, two or three from every town, and twenty or thirty from every city; of which number it is only fair to conclude that not more than one out of five was a ready shot. But how stands the case now? Gunners exist every where; and where fifty years ago one gun was employed, at least twenty are now in full use; and where of these numbers one out of four or five only could hit a flying shot, even by chance, we see schoolboys now take snap shots, and pull down their bird with almost unerring certainty. Is all this, we ask, not literally true? and can we therefore wonder if these birds become scarce? Further, we have also to remark on the decrease of cover in Britain as an operating cause of the alleged scarcity. Where are now our vast forests? They have yielded to the axe, and corn now grows where woodcocks used to harbour. Will they remain altogether unsheltered? they may stay, but the spots they sought for are covered with grain, the slops they fed from are drained, and to them desolation spreads over the land, and therefore many of them return to their former home, bleak and cold as it is, never more to return here. Of the difference between the numbers of woodcocks now to be met with, and what were to be seen thirty years ago, Mr. Lascelles, whom we have already mentioned, observes, "It was no uncommon thing, thirty years ago, at a place called New Bridge in Glamorganshire, to see five or six cocks on wing at the same moment, and to kill ten or fifteen couples was not thought an extraordinary day's work. I met with an old farmer some time since, in that neighbourhood who recollected the circumstance of a man once killing five and twenty couples within the space of a few hundred yards; but this happened upwards of half a century ago, and at that season of the year when a number had collected together for the purpose of revisiting their native land. At present, and indeed in every successive year, the scarcity becomes more apparent; so that in those districts where there used to be a superabundance the coverts are, in a great measure, deserted." (*Ibid.* p. 221.) Mr. Daniel tells us, tha Mr. Yeo, of Swansea, killed one hundred couple of woodcocks in one season. In Ireland the Earl of Clermont shot half as many in a day; at which time it is to be observed, a

Ballyshannon, in the county of Donegal, we are told they were sold for one penny each, and the price of the powder and shot.

2657. *That woodcocks breed in this country* is now too well known to be disputed. Some, it is true, being detained by having received wounds, mate themselves here by force; but it is pleasing, by the frequency with which their nests have of late years occurred, to be assured that the builders, most of them, have remained from choice. We cannot say much for the care bestowed in the construction of their nests, when compared with the nidification of most of our British birds. A few fern stalks intermixed with leaves, and perhaps, but not certainly, a little moss, form the couching place of the hen bird, who deposits four or five eggs of the size of those of the pigeon, of a dirty greyish tint slightly enlivened by dusky markings. The few remaining sceptics on the subject of woodcocks breeding in this country will find ample proof thereof in all ornithological works. Mr. Daniel's notices on this head are too copious, also, not to satisfy any inquirer that such is the case. It has been long known that they visited Scotland, but it was usually late: now they are not only found in tolerable abundance in the Highlands, and a few in Caithness, and the Orkneys likewise, but they also breed there. On May 28. 1829, a woodcock's nest was found with eight fully fledged young woodcocks in it, on the shore of Loch Lomond, near Belloch Castle. (*Oxford Herald*, June 13. 1829.) As woodcocks seldom lay more than four or five eggs, the number here stated was extraordinary; but the respectability of the source of the information should prevent our doubting its accuracy. George Fairholme, Esq. in the *Magazine of Natural History*, vol. i. New Series, p. 336. offers also many interesting notices of the breeding of both woodcocks and fieldfares in Scotland, to which we would refer the inquisitive reader; and we do it with the more earnestness, as he details habits in this bird that have not hitherto been noticed, but entirely passed over, or at best hinted at by others. A correspondent in the *Sporting Magazine* for October, 1839, also informs us, that he was told by the keeper at Lawns, Perthshire, that he had more woodcocks at that moment in the covers under his charge, than he had had at any period during the previous winter. The keeper at Srowan, also in the same neighbourhood, has found a great many woodcocks' nests this summer, all thriving birds, and to all appearance as happy as if in their native country. Some of the broods took flight about the latter end of July, and he (the keeper) calculates upon having a fair show of cocks this season, independent of a good flight from a foreign country.

Subsect. 13. *Woodcock Shooting.*

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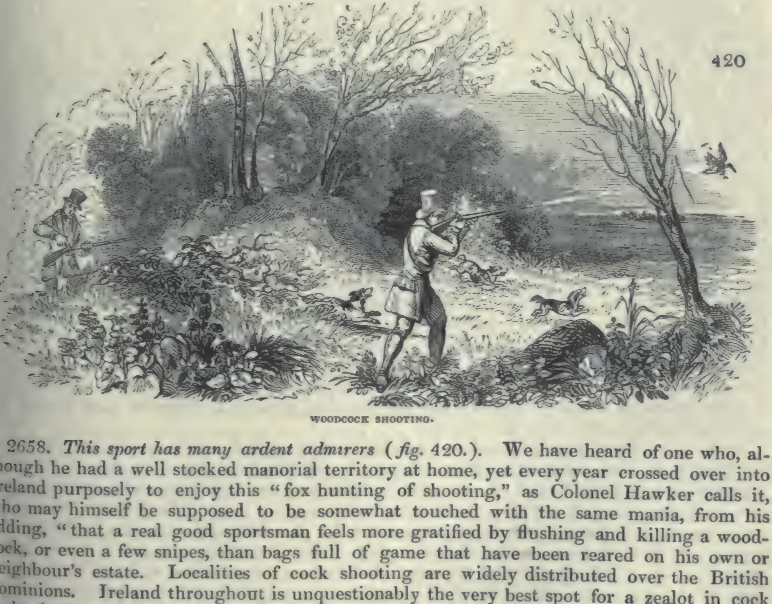

WOODCOCK SHOOTING.

2658. *This sport has many ardent admirers* (*fig.* 420.). We have heard of one who, although he had a well stocked manorial territory at home, yet every year crossed over into Ireland purposely to enjoy this "fox hunting of shooting," as Colonel Hawker calls it, who may himself be supposed to be somewhat touched with the same mania, from his adding, "that a real good sportsman feels more gratified by flushing and killing a woodcock, or even a few snipes, than bags full of game that have been reared on his own or neighbour's estate. Localities of cock shooting are widely distributed over the British dominions. Ireland throughout is unquestionably the very best spot for a zealot in cock and snipe shooting; the nature of the ground, inclined as it is to bog and marsh, suits the one and the other of these birds. Colonel Howard, of the North Gloucester Militia, in company with another officer of that regiment in some preserved woods at Slane, to our own knowledge had, in little more than two hours, twenty-two shots; the returns we entirely forget, but we know they were not so numerous as to establish the sporting fame of the shooters. In some of the wild parts of Ireland, were the English sportsman to inquire of a native whether there were any woodcocks in the neighbourhood, the reply would very probably be, — "Fait, yer honour, we have none at all at all; we have only a few crowour keougs." We entirely agree with Mr. Thornhill, that "If a sportsman is fond of cock shooting, it will repay him well for his trouble to take a trip to Ireland; it is not material what part to recommend, as it is impossible almost to go to a bad place for sport. As to asking leave, it is needless; as the only cause of jealousy that can subsist between the visitor and the owner of the ground will be for not acquainting him of his coming, in order that he might have it in his power to receive him in the usual hospitable manner, by providing beaters to show him sport, giving him the best of fare, a good bottle of claret, and a sincere and hearty welcome, assuring his guest the longer he stays and honours him with his company, the more welcome he is, and the happier he will make him." (*Shooting Directory*, p. 125.) We can vouch for the truth of this; for a more generous, warm hearted race is not to be found than among the Irish sporting gentry; and we assert this from the full experience we had of them in their own country. Wales, both North and South, presents also very good cock shooting; and many sportsmen visit one or the other to enjoy the sport to be there met with. Devonshire, Cornwall, Dorsetshire, and Sussex, are likewise favourite localities for these birds, wherever there is cover to harbour them, and food adapted to their wants. As to the precise spots most likely to hold them in any district, it is not very easy to point them out; for the birds themselves are in some cases, to appearance at least, rather capricious. Mr. Daniel says, "At their first arrival they drop in hedgerows, clumps of trees, upon heaths, among bushes or furze;" and he might have added, in woody glens watered by rills oozing from mossy ground; where they can plunge their bills in, and thereby extract minute worms and aquatic insects.

Mr. Daniel further observes, that, "when the cocks first take to the coverts, which they sometimes do in *flights*, or numbers, they choose the year old slops, or they betake themselves to the edges of the woods, according to circumstances; afterwards they lie up, in ordinary as it were, in coverts of from seven to ten years' growth." It is a fact, though as we believe not admitted by many, that a very severe frost will occasion their departure from us; at least a very great diminution of their numbers occurs. In such cases, where do they locate themselves? for it would be their certain destruction to return to their original home. Many of them, we have reason to believe, merely cross over to Ireland, where the cold is seldom so intense as to freeze up the boring grounds entirely. We are inclined to this opinion from the unusual abundance of both woodcocks and snipes we met with there, when a very intense frost prevailed in England. It is not the snow, so much as the frost, that drives them away; for when the snow remains in its original state as it fell, they are known to scratch it away from their boring grounds sufficiently to allow them to penetrate the soil beneath, which has been protected by the resisting properties of the snow to external cold. But of course when the frost is so severe as to congelate the snow, and entirely close up the ground, they must leave or starve; and which fate, we believe, overtakes many during very hard frosts. Such being the case, the sportsman must not expect great success in cock shooting in a very severe frost. It is distressing at such a time to witness the shifts that both cocks and snipes are put to, and how tame they become from a scarcity of food, particularly the woodcock, and how they will hang to one spot. It is remarkable, but as true as remarkable, that a good boring spot, however small the cover around may be, will always own a woodcock, and often one only. It is also equally a fact, that when we have killed this land, or rather bog, owner, we were sure within two days to find another which had located himself there. This solitary inclination is fortunate for them, for they eat voraciously and frequently; and one moderate springy plash will hardly support more than one bird at a time. Nevertheless, although they are tolerably constant to their location, it is evident they have a little of the itch of travel, and, like other birds, wish to see the world. It would appear likewise possible, that they had in some instances actually swallowed up all the food around a moderate sized boring locality before they took their departure.

2659. *Some describe the woodcock as essentially a solitary bird,* nor can we deny but that he appears to like more room than company; yet numbers are often found together. Removal is frequently forced on one who had hitherto been so long domesticated to one spot as to be actually known to an observant passenger. Among the habits of the woodcock essential to the sportsman to know, one is, that although he may be flushed, he seldom voluntarily flies in the daytime, but more frequently remains hidden in the recesses of the thickest parts of the wood, looking out however, as well as his purblind eyes will let him, and scenting his food as well as his exquisite olfactory organs will assist him in doing. If the sportsman now drop unexpectedly on him and flushes him, should a straightforward opening present itself, let the shooter take his time, for he will skim away horizontally, and it will be his own fault if the bird be not brought to bag. But the difficulty to all but the very inexperienced shooter is, when a cock, for want of an horizontal passage by reason of crossing branches and thick foliage, is forced to rise perpendicularly, which he does with much bustle and flapping of wings. How, we ask, is he to be got at in the midst of so much confusion? Every professed cock shooter is fully aware, that all other obstacles created by the efforts of this bird to escape the fatal tube are nothing to the difficulty of taking an aim when he is thus darting through the tanglings of the covert; and yet there are many who will bet that they will hit nine out of every ten of such shots that shall present themselves. The Toomers (two brothers of much sporting celebrity) would, we make no doubt, have laid heavy bets on their own chance in such a case. Colonel Hawker, whose pithy method of giving his shooting instructions is singular, would do better were he less concise. One so much a master of the subject should surely not wrap up all his experience on cock shooting merely in what follows: — "In a country where cocks are scarce, be sure to put a marker in a tree before you attempt to flush one a second time; and when you have yourself marked down a cock, remember how very apt he is to *run*, instead of *rising*, from the spot in which you may have seen him drop. If a cock flies away, and continues to rise wild, go fairly but quietly beyond where he may have last dropped, and then turn back again to beat for him (leaving some one to make a noise on the side where you had before advanced on him), and he will then most likely either lie close, or fly towards you. If this will not do, take your station quietly to windward (as cocks generally fly against wind), give a whistle when you are ready, and let the other person then draw on, and flush him. His cry of 'Mark!' will assist in frightening and driving the cock forward, and be a signal for your preparation." (P. 166.) Both the woodcock and snipe are sad bugbears to very moderate shots, their twistings so discompose them from taking aim. An amusing instance occurs in the following anecdote, which we pledge ourselves (extraordinary as it is) for the truth of: — "We used, when quartered at Lewes, during a frost to pursue wildfowl on the marshes, and woodcocks and snipes in the woods around Glynde; and there, on one occasion, we met with an unfledged sportsman, who naïvely remarked, that he came out principally to redeem his pledge to his wife that he would bring her home a woodcock. He had, he said, already followed one for nearly a week, and although he had every day got a shot, and one day two shots at him, he was always foiled. He however consoled himself, that he should that day go home with a better grace, for although he could not fulfil the whole, he could the half of his promise, for *he had shot a snipe!*"

2660. *Woodcocks are certainly much influenced by changes in the weather* to make shiftings in their localisation. A friend requests you to go with him on the morrow to —— Wood, where, two days ago, himself and another had some very good cock shooting. You go, and perhaps hardly flush one. How is this? Has there been a bleak north western blowing the tall oaks, and almost bending them to their centre? There has, and the reason is evident. Pass on to the other side of the hill, where a large copse with thick underwood shelters all who rest in it, and the old acquaintances of the other day are then found, laid up, not high and dry, but in deep and somewhat moist and plashy spots. Woodcocks do not relish storms; they are the very sons of quiet, and they shift themselves from one wood to another according to its lee or its windward bearing. We have already noticed Wales, both North and South, as affording good cocking. In both these countries some large covers are to be met with which usually offer good sport, but here particularly, and as we think more than in most other localities, these birds are uncertain, and the sportsman must take his chance and not slander the covers, if his want of tact should have led him to a spot which particular circumstances have made scarce of game, and which, by certain changes of wind, weather, &c. &c. may again fill to-morrow. In very large woods cocks are apt to shift from one side to the other, either to avoid the storms by locating themselves on the lee side, or otherwise to choose new boring ground; for as we have already shown, twenty or thirty cocks alone would make some inroads upon the edibles they meet with when located a few days only, if the boring spots are few, or much confined, such gormandisers are they. Essentially these birds are considered as rovers, but when it suits them they are as constant to their homes as the old fox to his earth; this is proved by our account of the would-be cock shooter who so ineffectually pursued the same poor bird we have noticed at Glynde near Lewes. We would recommend the uninitiated individual in cock shooting, who cannot cover his bird by reason of his windings and twistings, not to fire at him, which forbearance will be repaid him in all probability by his dropping again within a few yards, and if then missed may be again flushed, and present another equally fair chance. Strange it is to say, but it is no less true than strange, that some very fair shots (we believe we have already hinted as much) at other birds, are so flurried at the flushing of a woodcock, as to be entirely prevented from taking any effective aim, often from even firing off their gun. To such we would advise a month or six weeks' sojourn in Ireland, where the alder hedgerow plantations are so common. In these woodcocks like to lie, and from which they are to be flushed either by close hunting cockers, or, what is often better, by Irish beaters with long supple wands, who, one on each side, march in a line with the sportsman. Now Paddy, who is usually up to every thing where a bit of sporting is to be engaged in, with his long thrasher is sure to move the closest lying cock, and when a bird is here flushed he usually takes straight ahead, and pitches some thirty or forty yards in advance; so if he be missed he is almost certain of presenting himself again, and it will be hard if our tyro cannot pull him down at last. Should he only once succeed in taking a deliberate though quick aim, and ground his bird handsomely, particularly if he do the same two or three times in one day, he will in all probability ever after be a proficient in woodcock shooting: so contradictory, yet so true it is, that the shooting of woodcocks is one of the easiest, and also one of the most difficult of attainments among gunning field practices.

2661. *Cocking spaniels* are unquestionably the best dogs for cock shooting, and with them the sport is most animating. A very steady brace of setters or pointers, one having a deep toned the other a lighter toned bell, hung around the neck (as already noticed in *Pheasant Shooting*, p. 861.), suit also the taste of some sportsmen either alone or with one friend, and where the cover is extensive and not full of thorns and briars it is very pleasant shooting; but we again repeat, that cocking spaniels for a party, or for large, thick, and strong covers, are to be preferred. They however should be extremely well broken, and should hunt either very close or spread more widely, according to the number of guns out; and which, if they be very well trained, they will do of their own accord, as we have often witnessed when shooting with Mr. Daniel both in our own and his woods. His dogs when hunting presented a perfect sporting picture; with a single waive of his hand he would spread out his dogs to hunt at large, each dog looking up frequently to watch his directing motions, and listening to his cheers or his rates; indeed, they seemed to live only to obey him. Although it is now many years since we shot with the reverend gentleman (Peace to his manes! for he was a sporting trump), yet we can clearly call to our recollection innumerable proofs of his abilities as a sportsman and his urbanity as a gentleman. We have elsewhere noticed some of his extraordinary exploits as a fisherman, indeed we might almost say he was himself a fish, for no water was too deep for his willing spirit to plumb it with his person if a pond or lake was to be netted. We used to admire Mr. Daniel much for the spirit of a true sportsman he displayed in being in general cases unwilling to disturb more than one kind of game at a time. If a pheasant got up when he was engaged in cock shooting, he would not willingly fire at it, and if killed by any one of his party he would express his regrets; putting his disapprobation on the supposition that it unsteadied his dogs.

2662. *Both beaters and markers* are required when an extensive and well timbered wood is to be shot over, particularly if the cocks are expected to be in plenty, and the shooters proportionate. The beaters on these occasions should be well instructed in what is required of them, and in fact should be as well broken to the sport as the dogs. Although the master should direct where they should station themselves, they should know how to preserve the same relative situations. Their beating sticks ought to be of some tough supple wood. We have known the carter's whip, or a long thonged horse-whip, made use of; but they are not only expensive articles and liable to injury, but they really are less effective than a tough supple wand. Markers also are equally useful here, as they are in pheasant shooting; and if two or three of the number be placed in different situations, as near the summit of any of the most commanding trees, they can then effectively mark the pitch of almost each disturbed cock. Of course the sportsmen should each be well apprised of the situation and placing of every one of these agents, so that no accident may happen. We have heard of a gentleman of fortune who never shot without markers. As his woods were extensive, his trees lofty, and himself fond of the sport, and very frequently engaged in it, that he might have nothing to reproach himself with, each marker was provided with a coat, breeches, and leggings, of very stout leather, impervious to moderate sized shot: a leathern cap likewise guarded the head and neck. The *beaters*, each with his thrashing wand, proceeding on the line of the shooters at regular distances, strike the brushwood, which, disturbing the couching bird, flushes him. If he falls by a shot, it is well; if not, he is marked down by those aloft; any one of whom having seen his pitch, cries out Mark! or Marked! and proceeds to instruct those below as to the spot on which he grounded. This is noted by the company, who advance in regular order until another is flushed; for if the marked bird be not in the direction of the party, a piece of paper is sometimes attached to a bough, and he rests until a détour is made to seek him and others so marked down. Such is the method we have seen observed by woodcock shooting parties, when engaged in numbers on an expedition of the kind. We have also remarked, on such occasions, that the voluntary pitch of a disturbed cock has seldom been on what might be considered a feeding ground; on the contrary, as though done purposely to avoid raising suspicion, the cock has grounded on a dry but thickly wooded spot, frequently at the root of a holly, or at the base of briar stems. The junior sportsman will do well to bear in mind, that a week or two previous to their departure in the spring, they are often found in pairs, which will afford him a double advantage. If, however, he be very sensitive, the little piping love-note which each makes to the other as they fly along, will probably arrest his hand. We should honour him for his sensibility, but let him not whisper the disgraceful fact to any veteran if he would avoid ridicule. We need hardly hint to the afternoon or evening shooter in the woods, that at those times the birds are on the feed, or *roading*, as it is called in sporting technicality; and consequently, if there are any about, they are now to be met with in the mosses, edges of springs, and bogs.

2663. *Poaching* (bad luck to it!) is still practised against these admired birds. One of the oldest methods was by means of what was then called the *stalking horse*, which Gervase Markham tells us was in early times a living horse broken-in for the purpose of stalking; for, as he observes, "When a man intends to compasse a shoote among fowle, he must haue some mouing shadow or shelter to walke by him; in this case there is nothing better than the stalking horse, which is an old iade trayned up for that vse, which being stript naked, and haueing nothing but a string about the neather-chappe of two or three yards longe, will gently, and as you haue ocation to vrge him, walke vp and downe in the water which way you will haue him, flodding and eating vpon the grasse or other stuffe that growes therein; and then being hardy and stoute, without taking any affright at the report of the piece behind his fore shoulder, bending your body downe low by his side, and keeping his body still full betweene you and the fowle. Then haueing (as was before shewed) chosen your marke, you shall take your leuell from before the forepart of the horse, shooting as it were betweene the horse's neck and the water, which is more safe and surer then taking the leuell vnder the horse's belly, and much lesser to be perceaued; the shoulder of the horse couering the body of the man, and the horse's legges shaddowing the legges of the man also: and as thus you stalke vpon the greate blanke waters, so you may stalke also along the bankes of brookes or great riuers, by little and little winning the fowle to as neare a station as can be desired; and thus you may doe also vpon the firme ground, whether it be on moor, heath, or other rotten earth, or else vpon the tylthe where greene corne groweth; or generally in any other haunt where fowle are accustomably vsed to feede or abide." (*The Art of Fowling*, p. 47.) As our worthy author, however, was aware that the living horse would entail expense on the fowling poacher greater than his means, we are led to understand that there was substituted an artificial one, seen in *fig.* 421.; and such an effigy was long in use among sportsmen of former days, who, thus concealed, could stealthily stalk on wildfowl in the water, and landfowl crouched on shore. We have already noticed the water spaniel as represented by Markham for field sporting, and we here find him again represented as an adjutant in this stalking process as follows:—"And as you make vse of this stalking horse, so must you not in any wise want your water dogge, for he is as vsefull at this time as at any other, nor can you well doe any thing without him, especially if it be vpon riuers, or broad deepe waters; yet you should haue him at such obedience, that whilest you are a stalking you may leaue him with your bagges, sadle, and bridle, and other needments, wher he may lye close, and neuer stirre till you haue shot, and then, vpon the least gybbet or call, to come running vnto you, and to fetch foorth what you shall kill; which, with a small practice, he will doe readily and willingly after you haue made him vnderstand your minde, for they are creatures of wonderfull great capacity, and naturally inclyned to the sporte, so that being kept in true awe, there is nothing which they will not with great readinesse performe." To make the artificial stalking horse, Markham directs that the sportsmen "should take any pieces of oulde canuasse, and hauing made it in the shape or proportion of a horse with the head bending downeward, as if he grased, and stoping it with dry strawe, mosse, flocks, or any other light matter, let it be painted as neere the colour of a horse as you can deuise, of which the browne is the best; and in the midst let it be fixt to a staffe with a picke of iron in it to strike downe in the ground at your pleasvre, and stand fast whilest you chuse your marke, as also to turne and winde any way you please, either for your advantage of the winde, or for the better taking of your leuell; and it must be made so portable, that you may beare it easily with one hand, mouing and wagging it in such wise that it may seeme to moue and grase as it goeth; neither must this in any wise exceed the ordinary stature or proportion of a common horse, for to be too low or little will not couer the man, and to be too big and huge will be both monstrous and troublesome, and giue affright to the fowle; therefore, the meane in this is the best measure, and only worthe the obseruation." (P. 50.) We are told by him that the effigy of other animals also, as the ox, stag, &c. &c. was used for stalking. He however directs, that whatever animal the effigy is to represent, it be made "true in form and correct in proportions, as well as coloured to the life." This figure was to be employed at early morn or dewy eve, as occasion suited or chance presented. Springes, purse nets, and nooses, however, are now more employed: it would nevertheless appear, that the stalking process is not wholly abandoned, as we ourselves when last in Wales saw a sort of stalking effigy then in use there, but which was nothing more than a tall and almost shapeless mass of canvass strained and darkly painted, which being braced on the arm and carried before the

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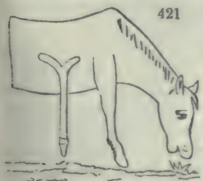

STALKING HORSE.

shooter by an assistant, so covered both, that through a small opening the gunner could take his aim at fowl on shore, or in fact at any bird he might discover. This plan however, as may be supposed, was more effectively employed against wildfowl in the marshes, than against woodcocks, which, we were told, were even then mostly taken by glade nets hung across their evening flights, and nooses laid in the paths to their feeding grounds.

2664. *Mayer, in his Sportsman's Directory* (query, *Poaching Directory?*) enters at large into these particulars both by figures and printed directions, and to him we leave the task of giving these unhallowed instructions; hoping, however, that every one who tries them may be disappointed. The respectable writer of the matter of Scott's *British Field Sports* tells us, that " The neighbourhood of Torrington, in Devonshire, is famous for woodcocks and snipes, being found there in such abundance, that one person, a few years since, has been known to supply the metropolis with them to the value of nearly two thousand pounds in one season. Great part, it may be supposed, are taken by nets and springes, as in Cumberland and Westmoreland, where these birds were formerly so cheap as sixteen to twenty pence a couple. Bridge springes are set in the rides, where the markings and mewtings are discovered; also glade or flight nets are hoisted up by pulleys upon trees. The Kendal and Exeter coaches have a chief concern in the London supply, the latter sometimes carrying up thirty dozen of woodcocks per week; price, at particular seasons, as high as 16*s.* the couple." (P. 240.) The dog used by the Welsh poachers at the present day is like almost all poaching dogs, a mongrel of many bloods, but is always clever and well educated to poaching practices. It is true he does not talk, like the German dog or the London canary; but he can do better—he can act effectively. Mr. Dobson in his *Kunopædia*, p. 115. says, " The poacher's dog in Wales is an ugly raw-boned, cross-made derivation from the light setter, degraded through half a dozen generations of bastardy; than which, with a view of being made up into pointers, it is not possible to conceive more unpromising materials; and upon which therefore, if such be the effects producible, it is fair to conclude what a similar discipline is capable of doing with superior natures. By hunger and hard work, of both of which they get plenty, they are brought down into obedience; and their draw upon a cock in a wood, under the dread of their master's arm, with the power of which they soon become acquainted, is wrought into a full stop.

Now from the dog let us observe the conduct of the master. As soon as the former is clearly fixed, instead of pressing on him, or scaring all the cocks in a wood by his noisy admonitions, the latter retires in silence instantly: he is little solicitous about the conduct of his companion, who by this time has learned at what a terrible price his sides must pay for it, if with the full consciousness of the bird being before him he should press forward to a spring. Having got off as great a distance as the wood will conveniently admit—perhaps twenty or thirty yards—the master now unslings the stalking horse, which had been carried at his back; and mounting it on his left arm, presented towards the bird, he begins a circuit, which, with as great a regularity and as quick a pace as the nature of the ground will possibly admit, he completes around the spot, continuing his rate, but contracting the circle. The vulgar idea is, that there is magic in this circle; which, when completed, deprives the bird of the power to rise. Now the truth is, the cock having taken alarm on finding himself beset, has his eyes all around; and perceiving, as it flits along, this formidable vision of the stalking horse presenting itself at every avenue (for a cock always looks to an avenue for his escape), and threatening him in every direction, he lies fixed under the magical impression of fear; or rather perhaps, although alarmed by the appearance, yet not apprehending any direct hostility to himself whilst it continues to move onward, he skulks close, as the instinctive means of escaping notice; until, approaching him in narrower circles, the lynx eyed director of it descries him on the ground, and levelling a short gun through a hole in the shield lays him dead before the dog's nose." The underwood generally in Wales is neither so strong nor so united as in England, few tanglings of brushwood, which would draw the fleece off a sheep's back, are there to be met with. It is also a mistake to suppose, that these privacies of interweaved foliage are the constant resort of the cock. When shot at day after day, or hunted every hour or two, he may secrete himself there; but such are not the spots he affects by choice in Wales particularly, for they present no true boring ground, neither do they offer any but an unsafe shelter; for the attentive sportsman well knows that, foolish as this bird appears in some respects, he is crafty enough always to have an opening before him, from which he can instantly rise. He sometimes makes a rustle, but very seldom gives any proof that he is entangled at his outset. In Ireland both the woodcock and snipe are considered as game, and hence are under the protection of the law; and we cannot but hope that a legal protection will be thrown over them ere long in England also. The common principles of humanity should influence us in preventing a war of utter extermination of a race that comes to seek food and protection from us. We love fair shooting as well as our neighbours, but we cannot think well of the sportsman who, having had a fair day's sport, will yet follow up the last couple.

Subsect. 14. *Time of the Arrival and Departure of migrating Birds.*

2665. *Mr. Markwick's observations* made in Sussex upon the migration of birds, taken on an average of twenty-six years, were as follows: —

	First seen.	Last seen.		First seen.	Last seen.
Woodcock - -	October 20.	April 1.	Redwing - -	November 20.	March 18.
Snipe - -	November 20.	March 20.	Royston crow -	December 22.	March 26.
Jack-snipe - -	December 26.	March 16.	Swallow - -	April 18.	October 31.
Landrail - -	September 1.	October 20.	Swift - -	May 9.	September 3.
Quail - -	August 20.		Cuckoo - -	May 1.	July 10.
Fieldfare - -	November 21.	April 10.	Wheatear -	May 4.	September 26.

2666. *This table*, Mr. Daniel tells us, was formed from the observations of Mr. Markwick on the subject, which he had continued for a period of twenty-six years, and is therefore interesting, as well to the naturalist as to the sportsman. Circumstances, as may be expected, will be liable to alter either the departure or the arrival of any or of all these birds; but it is not to be supposed that more than the difference of a few days will be perceived. It would likewise add much to the value of such a table, were the observations extended to every county throughout the kingdom; and we do hope that this hint will not be lost on localised sportsmen in general.

Subsect. 15. *The Natural and Sporting History of the Snipe.*

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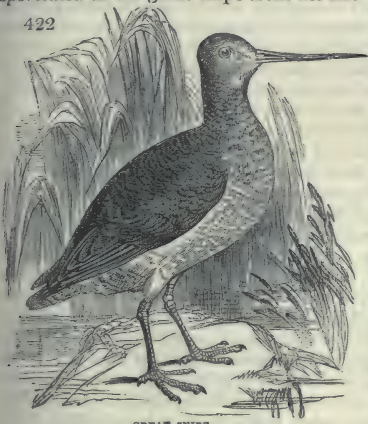

GREAT SNIPE.

2667. *The snipe*, as found in England, presents three varieties. The first is known to sportsmen as the great snipe from his size and as the solitary also from being always found alone. The great snipe (*Scolopax major* Linn., *fig.* 422.) is a very rare bird; one shot in Lancashire may be seen in the British Museum, another also was met with in Kent. Bewick tells us he had likewise seen three specimens of a large kind of snipe: — "The upper parts of the plumage were nearly like those of the common snipe: the breast, sides, belly, and vent, white, spotted, barred, and undulated with black. It is not clearly ascertained whether this be a distinct species of snipe, or whether it acquires its bulk and change of plumage from age, and its solitary habits from ceasing to breed." Latham's description of this bird is as follows: — "Size, between the woodcock and the snipe; weight eight ounces; length sixteen inches; bill four inches long, and like that of the woodcock; crown of the head black, divided down the middle by a pale stripe — over and beneath each eye another of the same; the upper parts of the body very like the common snipe; beneath white; the feathers edged with dusky black on the neck, breast, and sides; and those of the belly spotted with the same, but the middle of it is plain white; quills dusky; tail reddish, the two middle feathers plain, the others barred with black; legs black." (*British Birds*, p. 49.) We may also add to this description of this rare bird, that it has "sixteen tail feathers, the five outermost being white, barred with black; belly, sides, and thighs, barred with triangular black markings. Its length from the tip of the bill to the end of the tail, eleven inches and a half; from the same to the end of the toes, fourteen inches and a half. Its weight appears from different accounts to vary from seven to eight ounces." The anatomical character of one examined is thus stated: — Cæca one-eighth of an inch long. In the gizzard were skins of very small grubs and fibres of roots; in that of another, which had no food in it, the inner membrane was lying in longitudinal rugæ, each of which was thickly beset with conical papillæ, resembling rows of teeth. The anatomical facts which apply in a great degree to each variety of snipe, the internal structure of which (particularly of the great snipe) is strikingly analogous to that of the woodcock, as exhibited at p. 865., which confirms all that is stated by critical observers of the methods of feeding, and the matters made use of by both woodcocks and snipes. In the large snipe the portion of alimentary tract known as the cæca is a facsimile of that of the woodcock, whereas, both in the common snipe and the jack-snipe, the two branches of cæca are each an inch and a half long; but which variation appears to have no effect in altering the matters taken in, or their subsequent alteration by digestion. The great or solitary snipe, as it is called, "is not common in England, but is sometimes found in Lancashire, and also in Kent; in 1792 they were in tolerable plenty in the north of England, and are there called the *solitary snipe*, from always being found alone and detached: others have been since occasionally shot; one, in 1798, by a gentleman of Liverpool." Latham informs us, that the "great snipe is found in Germany and in Siberia; and he once saw it among a parcel of birds sent from Cayenne, and has no reason to suppose but that it came from thence." (*Rural Sports*, vol. iii. p. 182.)

2668. *Snipes are birds of very general distribution*, and, as justly observed by Mr. Daniel, are found in every quarter of the globe, as all travellers assert, and the foreign ornithological specimens in our museums from distant countries certify. "Snipes are seen throughout the old continent, from the arctic regions of Siberia to the Cape of Good Hope; at which last place it is common: it also inhabits the islands of Ceylon and Japan. In America it is met with almost universally, but more particularly in South Carolina, where it swarms: it is frequent in Jamaica, and more common in Falkland Islands than in England. In Egypt, in the fields from whence the crops of rice are just taken, snipes are so numerous, that it is not uncommon for a person to shoot a basket full in a day. The sport is, however, fatiguing, from the light earth of the rice grounds being so deeply impregnated with water, that the sportsman sinks at every step he takes, and sometimes above his knees. Snipes arrive the beginning of November in Lower Egypt, and pass the whole winter there. In some parts of Ireland they so greatly abound, that forty-three brace have been killed by one gentleman in six hours." Snipes in winter are also found very universally spread over Great Britain, particularly they are to be met with in our marshy grounds. In the spring they disperse themselves to higher and more airy situations, and then inhabit our mountains and our moors. According to Mr. Daniel, "they begin to *pipe* the first week in April; many of them breed with us, and the nest is composed of dried grass and plants, with sometimes a few feathers; they lay four or five eggs, of a dirty olive colour, marked with dusky spots: the young appear ugly and shapeless; the mother never deserts them until their long bill is firm enough to enable them to procure their food. When disturbed much in the breeding season, they soar to a vast height, the male making a singular bleating noise, which in superstitious times was called the *campana cœlestis;* and when they descend, they dart down most rapidly. The cock also, whilst the hen is sitting, poises himself on his wings, sometimes making a whistling, and frequently a drumming noise; and it is uncertain whether this noise is ventriloquous, or is produced by the motion of the wings. Mr. White says, this noise happens always when the bird is *descending*, and his wings are violently agitated. They feed on worms and insects which they find on the moist ground, as also on small snails, which last have been found whole in their stomachs: they usually have abundance of fat, which is not apt to cloy, and rarely disagrees with those that eat it: it is cooked like the woodcock, without extracting the entrails, and is every where esteemed for its delicious flavour." (*Rural Sports*, vol. iii. p. 176.) Having proceeded thus far, we shall now personally describe this prime favourite of the British sportsman.

2669. *The common snipe* (*Scolopax Gallinago* Linn., *fig.* 423.), provincially also called *snite* or *heather-bleater*, is thus described by Colonel Montague: — "Weight about four ounces; length near twelve inches; the bill three inches long, and dusky in colour; in some the base is lighter, flattish, and rough at the end; irides dusky; crown of the head black, with a longitudinal light rufous line down the middle; from the base of the upper mandible another line of the same colour passes on each side over the eyes; between the bill and eye is a dusky line; the throat white; cheeks, neck, and upper breast, mottled with black and light ferruginous patches; the back and scapulars are black, barred with ferruginous brown, and striped with yellowish buff colour in longitudinal lines; the quills are black, the first edged with white; the secondaries tipped with the same; those next the body are, with their coverts, striated, and barred with light ferruginous; lower breast and belly white; vent brown; upper tail-coverts brown, barred with black; the tail consists of fourteen black feathers, barred and spotted with dull orange red towards the end, with a narrow bar of black near the tip, where it is pale rufous; legs vary — in some dusky or lead colour, others green." (*Ornithological Dict.* p. 469.) The common snipe breeds on all the different moors of the north of Scotland, and amongst the reedy and rushy borders of the bogs of Ireland. It lays four eggs, which, on the Scotch moors, are deposited in or under a branch of heath. The nest is lined with withered grass, the eggs are of a greenish brown, with darker spots of green brown: they are large when compared with the size of the bird, round at the great end, and sharp-pointed at the small end. Snipe remain in the north of Scotland all the year, but are more numerous during

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COMMON SNIPE.

the summer. Their nests have been found on the highest moors, and on the lowest swampy grounds of narrow arms of the sea, close by high water-mark. Of the thousands that breed in the north of Scotland, multitudes in early winter proceed southward.

2670. *On the time of the arrival of the snipe*, Mr. Daniel tells us that a Norfolk gentleman had made some interesting observations: — "They arrive in the vicinity of Norwich early in September, which is merely transitory, stopping for a day or two, or perhaps only a few hours; they are then often found in large flocks, but lie very light. At the end of October the greatest number arrive, and are more universally dispersed, and afford better amusement than earlier in the season; but immediately as the severity of the winter commences, they almost entirely disappear, and return no more until March, previous to their final departure. During frost this gentleman has searched the spring ditches, which, remaining free from ice, presented both food and shelter; but, excepting the two or three early days of frost, found very few; and he asks if any sportsman can inform him, whether they retire farther south for a milder climate, or to the rapid rills in the mountainous parts of the island. The forwardness or backwardness of the spring always regulates their return, which induced this gentleman to remark the coincidence of the time of the flowering of wild plants and that of the reappearance of the snipes. In February a few prematurely arrive, as in 1800, when upon the 20th he found several, but a frost set in and again drove them back. In 1801, between the 10th and 17th, there were many snipes in the marshes, and several wildfowl in the river, during which period the ground was covered with snow: he searched the same marshes on the 24th, and did not find a snipe. In March they again visit the marshes numerously, earlier or later, according to the spring's appearance: in that of 1800 they returned the 13th, accompanied by a great number of lapwings; on the 26th they were observed to be most numerous, and within a few days most of them left us for other countries, while some few remained to rear their offspring in this. The spring of 1801 was very forward, and this gentleman observed several snipes, on the 9th of March, on Mounhold Heath; on the 11th there were considerable numbers in the marshes, but were in flocks, and *laid very light*: by the 27th many had departed, and the lapwings, reeves, and redshanks, had begun to lie. Snipes in the Cambridgeshire fens were, thirty years ago, most abundant; those brought to Cambridge market, which at that time were all shot birds, sold from *3d.* to *5d.* each. In 1775 the compiler killed, in three mornings, thirty-three couple of snipes; and from having known his father's men catch them by drawing with a net in the night time, he mentioned to a person near Milton Fen his surprise that this mode of taking them had not been resorted to. The fenman inquired what sort of net was to be used, and was told a lark-net would answer the purpose of a trial; this the fenman soon borrowed, and the first night of his making the experiment caught as many snipes as a small hamper could contain: the practice soon became general, and the netted were so much better than the shot birds, that the latter would scarcely find a purchaser in the market. The price at Cambridge has increased to a shilling, and sometimes eighteen pence a piece. The Duke of Marlborough's gamekeeper, some years since, killed twenty-two snipes at one shot." (P. 179—181.) Varieties in this bird, as in most others, occasionally occur. A very curious pied snipe, noticed by Bewick, was shot near Oxford, September 8. 1789, by a Mr. Court; its throat, breast, back, and wings, were beautifully covered or streaked with white, and on its forehead was a star of the natural colour; it also had a ring round the neck and tail, with the tips of the wings of the same colour. Occasionally one or two with orange legs are seen, and a variety with a red breast has been met with. In 1803 a small flock of these was seen in Devonshire. The red breasted snipe (*Scolopax Noveborencis*) has now and then also been met with in other localities.

2671. *The jack-snipe* (*Scolopax Gallinula* Linn., *fig.* 424.). Colonel Montague observes on this bird, that "it is about half the size of the common snipe, and weighs about two ounces; length eight inches and a half; the bill is nearly two inches long, of a lead colour, black at the point, and the ridge of the upper mandible light horn colour; irides dusky; the crown of the head black, slightly edged with rust colour, bordered on each side with a yellowish streak, beneath which is a dusky one; and close above the eye is another streak of a light colour; from the bill to the eye is a dusky stroke; the neck is varied with ferruginous brown and dusky, dashed with cinereous above; the back, rump, and scapulars, of a fine glossy changeable green and purple, the exterior webs of the latter deep buff colour, forming two very conspicuous lines from the shoulders to the tail; quills dusky; wing-coverts dusky, bordered with cinereous and brown; the lower breast and all beneath white; the tail cuneiform, consisting of twelve pointed dusky feathers, dashed more or less

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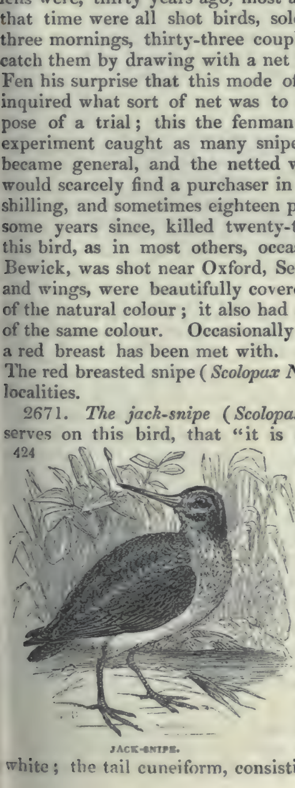

JACK-SNIPE.

with ferruginous; legs greenish. The jack-snipe comes to us later than the common snipe, and is never known to remain in this country during the breeding season. It is found in most parts of Europe and in North America." (*Ornithological Dictionary*, p. 271.) Sir W. Jardine states that it breeds in the county of Sutherland, but Mr. W. Dunbar, of Loch-Inver, a most observant local naturalist, says, that during all his wanderings through that country, he never saw a single specimen during the summer months; and he thinks Sir William has mistaken the nest of the Dunlin or Purre for that of the jack-snipe, the eggs of both species of birds being exceedingly similar. Of the jack-snipe we may remark, that its haunts are the same as those of the full snipe, so called in contradistinction to this now under notice, which, in conformity with its dimensions, is frequently called the *half* snipe. It is rather a rare bird, is usually found alone, and gives in most cases much trouble to flush it, for it will suffer itself to be almost trodden upon before it will rise, and when it does, it wings its way so heavily as to discompose the sportsman as much by its sluggish movements as the larger variety more often does by its rapid unsteady dartings. These minikins occasionally, although but seldom, breed in our marshes. Their eggs are, according to Mr. Daniel, of the same colour as those of the common snipe. "Fermin, in his account of Surinam, says, they are seen there by thousands on the sea-shore; that it must be a bad marksman who does not kill sixty at once with fine shot; and that he killed eighty-five at a single discharge; that the flesh is excellent, but the bird so small, that a man may eat twenty at a meal. It is to be apprehended that Fermin has mistaken the *purre*, or oxbird, for the jack-snipe, as they fly in clouds that would admit such aggregate slaughter as he has described." (*Rural Sports*, vol. iii. p. 182.)

Subsect. 16. *Snipe Shooting*

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SNIPE SHOOTING.

2672. *Snipe shooting* (*fig.* 425.), when the birds are plentiful, Mr Daniel very justly observes, affords excellent diversion. We ourselves, in spite of bog or marsh, in defiance of wet feet and cold nipped hands, have always considered it a most delightful one. Mr. Thornhill, however, is almost enough to dishearten the young beginner by what he says of it, which nevertheless is, under certain circumstances, not very wide of its real character. "Snipe-shooting," he says, "is a sport the best calculated (grousing excepted) to try the keenness of the sportsman, to ascertain his bottom, and if he can stand labour, water, mire, swamps, and bogs. He should be possessed of a strong constitution, not liable to catch cold, and have all the fortitude, as well as exertion of a water spaniel; he should be habitually inured to wet, dirt, and difficulty, and not be deterred by cold or severe weather." (P. 131.) Mr. Daniel draws a more favourable yet equally correct picture of it, when he says, "Snipe-shooting, when the birds are plentiful, is an excellent diversion: they are said to puzzle the marksman by the irregular twistings of their flight when first sprung; but this difficulty is soon surmounted if the birds are suffered to reach to a certain distance, when their flight becomes steady and easy to traverse with the gun: there is no reason to be apprehensive of their getting out of the range of the shot, as they will fall to the ground if struck but slightly with the smallest grain. Snipes, like the woodcocks, and many other birds, always fly against the wind; therefore, by keeping the wind at his back, the sportsman has this advantage of the bird when it rises, that it presents a fairer mark. These birds are scarcely good until November, when they get very fat. In hard, frosty, and more particularly in snowy weather, snipes resort in numbers to warm springs, where the rills continue open, and run with a gentle stream: these, on account of their long bills, are then the only places where they can hunt for food. Snipes will generally lie well to a pointer, and some dogs have a singular knack at finding and standing them." (*Rural Sports*, vol. iii. p. 178.) We append some well described lines on the habits of the snipe in Mr. Watt's *Remarks on Shooting*. This author has chosen poetry as his medium of communicating instruction; and, in so doing, has shown great judgment in not allowing his subject to betray him into Parnassian heights or metaphoric display. But on the contrary, by an easy yet descriptive flow of language, his subject is *practically* exemplified in a pleasing and yet instructive manner, which has already called for a second edition of his work. Mr. Watt may be considered to have strong holds on public attention. He is known very seldom to miss either snipe, woodcock, partridge, or pheasant. So *dead a shot* is entitled, therefore, to the character of a master in his art, and to full credit for the excellence of his instructions.

"The snipe is hardly ever found
In woods, he's fond of open ground;
The rushy pond, the quiet brook,
But chiefly to the marshes look;
The plashy heath and boggy moor
Yield frequently an ample store:
Stick to them well when this the case is,
They very quickly change their places:
To-day the sportsman can pursue
The numerous game *till all is blue*,
To-morrow he goes out again,
But mayn't a single shot obtain;
Affected by the wind and weather,
They often flock away together;
Sometimes they to the hills repair,
Rising in wisps all wildly there:
Vain the pursuit; but if a gale
Should quickly from the east prevail,
Or even from the boisterous north,
Again you ought to sally forth."

2673. *It may be thought singular*, that while one tells us that snipe, of all bird shooting, is the most difficult of attainment, another will affirm that no bird is more easily brought down, provided the proper time be taken to do it in. The fact is, the manners of the snipe are unquestionably contradictory, as are those also of all birds whose vision is somewhat crepuscular, as that of the snipe, woodcock, owl, goatsucker, &c. These birds all see indistinctly in the glare, and consequently, when suddenly intruded on, rise in extreme haste, and make a very awkward display of their abilities in retreating. Mounting in such haste, they are so flurried that they twist this way and that, undetermined which direction to take, probably from indistinct vision aided by want of recollection at that moment; or it may be, in some cases, from not having ascertained the state of the wind against which they usually take their course. We think that this view will account for the hurry and disorder which the snipe evinces if suddenly intruded on by the gunner; and the twistings and turnings in his flight, dependent on his uncertainty of purpose, is that which has rendered the shooting of him, except by practised hands and cool heads, so difficult. It is thus we see, in some writings, that the snipe is the hardest to hit of all birds; whereas, in others, it is said to be any thing but difficult to bring down a snipe. In our own opinion, however, there are two methods of hitting him with moderate certainty; the one is by snap-shooting, which is a habit gained by some, but not to be critically described by any, except we regard it as a consentaneous action of eye and hand at the same moment. The other certain mode of snipe shooting is to put the gun into the hand of the cool and deliberate marksman, who, nothing flurried, waits his opportunity, and the moment the bird settles into his course, arrests that course by a shot. The little ingenious work, known as the *Oakleigh Code*, expresses the matter thus: — "The shooter will bring down a snipe, with much less difficulty, at from fifteen to twenty paces than at any other distance. The aim is thus taken just before the bird begins to make its cross flights, but before it has attained its full speed. The irregularity of its flight is of little consequence during the first and second twisting before the bird is safely on the wing, since its flight is then comparatively tardy. But let the snipe fly ten yards from whence it sprang — let it be, for instance, twenty-five paces distant from the gun, it is then at the top of its speed, and in the very midst of its sidelong, eliptical gyrations, and more than a match for the majority of shooters, especially if the day be windy." (P. 170.) Snipes certainly lie better in windy weather than in any other, and as they then usually make a momentary halt or hanging on, then is the time to fire. When they cross also, by firing well forward, they seldom escape. Endeavour likewise to get to windward of them, thereby to catch a cross shot.

2674. *Are dogs to be employed in snipe shooting?* Some decry the use of dogs altogether in this sport. We own ourselves to be but a humble authority. We have, it is true, shot snipes for more than forty years past, and that in most parts of England, Scotland, and Ireland, and as we do not remember ever to have gone out without a dog, when one could be had, our opinion on the subject is therefore tolerably well marked. In Ireland even, where men-beaters and scouts are so much used, we usually took a very steady dog. We have seen spaniels broken in expressly to snipe shooting, and most interesting and valuable aids they made, hunting only a few yards around their master, and making no cry when they flushed their game. It is true it requires both tact and patience to bring them to this, but we fearlessly assert it can be done. We ourselves for some years employed an old and very steady pointer, whose personal attachment to us was such that she lived as it were not only to do our bidding, but also to divine what line of conduct would best compass the end in view, that of securing the snipe. Be it observed also, that all pointers will stand steadily to snipes, and likewise that the easiest shot made at a snipe is that which not unfrequently occurs in a wide open tract in a wood, where one is often found boring and scratching against the elevated earth at the edges of the moist sedgy locality. Occasionally, when a pointer is employed in snipe shooting, it will be found, that although you go even round and round your dog, yet no bird rises; in such case be assured it is a jack-snipe that is thus teasing you and your dog; therefore walk him up, and bring him down also, if you can, or he will tease you thus again and again. In snipe shooting, if the distance of a shot remains entirely with yourself, we consider that from twenty to twenty-five yards with No. 7. shot will be good practice. We, however, are aware, that some crack shooters prefer a snipe shot made at thirty or even thirty-five yards to one at twenty-five; but in such case the gun used must be a very close shooting one. For a cross shot, twenty-five yards we think is a good distance: the author of the *Oakleigh Code* says thirty for a cross or oblique shot. Experience only can perfect the snipe shooter. Instructions, however, are useful; he thereby learns to judge how his gun should carry its shot, and how be should both load it and hold it for that purpose (it should be close but regular for snipe shooting); and for the kind of shot, whether it be a straight, a crossing, or an oblique one, what suits his eye and hand best, that shooting let him pursue. Snipe shooting is a delightful and animating part of gunning practice when these experiences are perfected, particularly where the birds are plentiful. But snipes are the most inconstant of the feathered tribes; a frosty night will send away the whole of a vast flight that had been there the day before; and again in two days' time they may return, if open weather and a dry wind succeed.

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SNIPE SHOOTING.

2675. *Try your ground often.* A regular snipe locality should be tried, not only every day, but twice a day, so uncertain are snipes in fixing themselves even for a day. As the snipe usually flies up wind, when a point is made, by heading the dog or dogs, and getting the bird between yourself and them, as it rises you thereby get a fairer shot. You can, however, by taking a zigzag direction, occasionally get them from both your own hunting and the winding of the dogs or dog. During a brisk wind, the chances are in favour of the shooter's directing his steps down wind; for should a snipe rise, it would soon turn, and in making it, will certainly present itself favourably to the ready shot. If, on the contrary, the bird pursues a straight forward course, give it fair law or you will blow it to pieces; it also moves steadier when allowed a few seconds to pursue its flight.

2676. *Shooting the jack-snipe* has given rise to many a tough story — some true, some suppository; for in truth these minikins are to many extremely difficult to hit. Even the Toomers, who never failed to mark a penny-piece thrown up, were shy at firing at a jack-snipe, fearing the laugh which would follow should they miss him, as many excellent shots had done before them. When Mr. Molloy was quartered at Geneva Barracks, Ireland, he regularly equipped himself for shooting, and always sprung a jack-snipe, which he fired at, and followed. The bird used to pitch so close to him at times, that he was confident he had shot it, and used to run to take it up, when, to his great surprise, it would rise and fly a little further. He actually acknowledged he fired one day eighteen times at this bird; and after shooting at it for the whole season, he happened to be crossing the bog it lay in, when he put it up, and exclaiming, "There's my old friend," threw his stick at it, and killed it on the spot. Whenever after any of his brother officers found a jack-snipe, they were always sure to say, "There goes *Quartermaster Molloy!*" Snipe shooting is likely to become even more popular than heretofore, by the methods of making waterproof boots; and as they can now be had so pliant as to draw up the thigh also, many tender sportsmen will fearlessly venture forth.

2677. *The localities for snipe shooting.* If it be asked, where it is to be met with in the greatest perfection, we should unquestionably say, — in Ireland: that land of sporting and of good sportsmen. You can hardly be disappointed of this sport there, locate yourself where you will, except you go to the barren rocks on the sea-shore. Mr. Thornhill, at Charleville, has frequently shot twenty brace in a day; and he further remarks, that, let the number shot be as great as it may, no diminution of the birds can be observed. Both North and South Wales also furnish excellent snipe shooting, as well in their mountainous as in their more level districts. From the numerous lakes which are found there, wisps of these birds are certain to be met with. Scotland likewise presents them in plenty on its mosses, and around its lochs. In the moister grousing localities, they are also to be found in great numbers; wisps of twenty or thirty are common. In many parts of England they are not infrequent visitants, and in some of its counties they abound. In the Essex Marshes their numbers are great, and wherever sea-coast levels are met with, snipes are there to greet the sportsman. In Cambridgeshire, Lincolnshire, and Northamptonshire, they are found at particular seasons in vast flocks. In August, great numbers of professed snipe shooters assemble at the Whittlesey Wash, where most excellent amusement may be gained, not only from the mature birds, but also from the young ones, which are bred there in profusion. Exclusive of the snipes in this sporting Arcadia, which, however, begin to leave in October, ruffs, reeves, redshanks, and plovers, are likewise met with. Stern winter having passed away, the professed snipe shooter wends his way in March to the Stilton Fen, well known as the chosen resort of these birds, which shift their ground from the bog to the reed-shoals at this time, and from these back again to the bog, as circumstances direct the change. A dog is seldom used here; a small one would probably be smothered in the mud, and a large one of any kind, except a retriever, would be useless. The East Riding of Yorkshire also presents excellent snipe shooting: indeed, this bird is so universally dispersed over Great Britain, that it is hardly possible for any one to locate himself in any open country without meeting with it.

SUBSECT. 17. *Rabbit Shooting.*

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RABBIT SHOOTING.

2678. *We have been so long hunting the feather*, that we will now take a turn at the *fluck;* nd if the rabbit be not numbered by the sportsman among game animals he is yet of so uch consequence as to be especially under the protection of the law, and many very crack portsmen of our acquaintance are sufficiently ready to attend on a rabbit shooting excurion (*fig.* 427.). Whatever raises the expectation, and yet leaves the gratification expected matter of some uncertainty, is sure to interest us more even than a settled certainty of e coming event. The spaniels are questing for rabbits within the close tanglings of an extensive wood; their merry cry bespeaks them on the scent; the sporting attendants spread here and there, all eye, and all ear, to see the quick dart of the rabbit across the path, or to hear the leaves rattle, and the small boughs give place to his dashing forward. See! there he crosses the path, a shot is fired; the nimble spaniel is seen racing over the same tract in his wake scenting the stain as he goes. A squeak is heard, and the nearest sportsman flies to the spot, crying dead! dead! and presently returns with the prize. This enlivening scene is enacted again and again, and when the copse has failed, the neighbouring hedgerows are tried, which, if they have much furze, are sure to make excellent hides for these nimble animals. Rabbit shooting in such cover is very pleasant and lively sport, and with such hardy terriers or spaniels as will not only follow them in all their tortuities, however thick or tangled, as the wire coated will do, the sport is gratifying in the extreme. We have had a game terrier on such an occasion that has frequently returned home almost covered with blood, but particularly his fore-quarters, arms, nose, and ears, at least what was left of them, for he was a crop; and yet it was seldom, with all this scratching, that his eyes received any injury; a full proof that he also, spaniel-like, hunted principally by scent. The sportsman in this shooting must be on the alert, and must place himself as the cry of the dogs directs him, to look sharply for the darting out of the rabbit, which, be it remembered, is very unlike that of the hare; and hence so many hare shooters fail in rabbit shooting practice. The dart of the rabbit is quick in the extreme; that of the hare, except the dog be close to her, is more quiet; indeed she often steals out rather than flies, and pausing a moment to look around, then decamps. The gliding of the rabbit is so rapid that it is necessary either that the gunner have his gun on the cock, or at least that his thumb be on it, as not a moment should be lost; thus it is that snap shooters succeed best in rabbit shooting; the smallest hesitation on the part of the shooter loses this nimble animal, who crosses a path with incredible speed. Indeed, if a fair portion of practice in rabbit shooting will not make a quick shot, the case is hopeless. The fences and coverts likewise near a wood are often the resort of rabbits, particularly if showers have made the levels of the wood in a dripping state. Here, leaving the wood and its drippings, they locate themselves among the thickest cover of the hedgerows, and, if furze be planted there, it is a sure hide for them. Here two, three, or even more sportsmen judiciously placed, having with them rather small dogs used to the sport, and tough hided, with a moderate portion of tongue, who will follow up the game with their merry cry, while ever and anon a rabbit is forced out, and driven across the path, may find ample employment for their guns.

2679. *Rabbits are also shot from trees* in situations where they are plentiful. They do not by this method seem to smell the destroyer aloft, and so may be shot without much difficulty; for although the report of a gun will send almost the whole either into their cover o to ground, in a very few minutes they will reappear, and offer themselves again unconsciou victims. In an open warren Colonel Hawker recommends that you keep a few hurdles but bushed we suppose, and approach or wait for the rabbits under cover of them, carefully however, avoiding to go to windward. Were these little gentry less wary, we should no willingly detail these stratagems; but being, as Mr. Watt very justly observes,

"More difficult than hares to hit,
They frequently appear to flit
Like shadows past one; — good, indeed,
Is then the aim that bids them bleed.
If you would see them nicely stopped
In the thick wood, you must adopt
Snap shooting, for you 'll seldom there
Have time to take them full and fair:
E'en lost to view, advance your gun
Quickly to where you *think* they run;
Regard not grass, nor bush, nor briar,
Through each and all that instant fire.
Bang! it is well — you saw him not,
And yet you 've killed him on the spot."
Remarks on Shooting, 2d edit. p. 109.

2680. *Warren rabbit shooting* is also much admired by some, and is but little thought by others, ourselves being one of the latter number. We should hope no liberal-minde sportsman would watch the regular warren of the dealer in rabbits, yet we fear it is som times done: nay, we have heard of some who, although called gentlemen, have taken boy with a ferret purposely to bolt the rabbits when the warrener was engaged. In son parts where the country is of a light sandy soil, rabbits are tolerably numerous, althoug not claimed as private property; and such a locality presents a fair opportunity for th amusement of ferretting them, which, to be well done, must be operated quietly an adroitly. Much, however, will depend on the intention of the person or persons who are th performers. We mean to allude only to those who bolt the rabbit, that it may by means of th ferret be shot at as it comes out, giving it fair law. We profess not to have seen much the practice of ferretting rabbits. Without intending it as a pun, it has, in our opinio a poaching smell about it; and yet it is an amusement very much relished by son genuine sportsmen of our acquaintance. The ferrets used must be coped, that is, muzzl (they occasionally, we are sorry to say, have their mouths sewn up). Thus unable to sei the rabbit by the throat, they are turned into the burrows. Attention must now be pa by the shooters, who stand at moderate distances from the rabbit-holes, from whence th watch the bolting of the game from the different holes out of which the ferrets, or cats, as they are called by the regular ferretters, have driven the rabbits.

2681. *Rabbit shooting on open warrens is legitimate sport;* and although the numbers here are not great, there is often sport enough obtained to repay the search after them. We need not state the degree of caution necessary in the approach to these wary gentry. It is well therefore never to advance in a straight line, or even look directly towards them; walk leisurely along in the face of the wind; stoop and pick, or seem to pick up, a bough, or turf, or to examine any matter before you; and such conduct will often throw them off their guard. While doing this, if a dog is with you, keep him close; your clothes also should be dark, so as not to be seen on the approach a long way off. When you have ventured as near as they will allow without retreating to their earth, then stoop. One we knew used to lie down with his jacket drawn over his head; he would every now and then take a peep, and if he found that the rabbits had not fled, he was convinced his stratagem had effected his present purpose. He next deliberately crawled on his hands and knees, not straight towards them, but in a zig-zag direction, with jacket so much over his head, that he really looked more like an overgrown hog than a man; and in this way, he has assured us, he seldom failed in shooting one and sometimes more, if he could get them on a line. We are afraid we must consider this as poaching, or pot shooting; it certainly was a gain gotten under false pretences: but his reply was, that all is fair in love or war. When storms arise, the intervals between are often favourable for getting near them, particularly when, as already observed, the wind blows from them to you, as it ought to do in the stratagem just detailed, to render it more certain. When a number are come upon suddenly at the edge of a wood frequented by them, it often happens that the old ones will immediately take the covert; but not so the young ones, who prick up their ears, and perhaps raise themselves up to examine you: now take your shot.

2682. *There is so much to interest* every one in the natural and commercial history of the rabbit, that we are sorry our confined limits will not allow us to enter somewhat at large into these particulars. The similarity between the rabbit and the hare is such in many respects, that were it not that equal dissimilarity exists between them in even more respects, we should consider them as kindred relations of the same group. But so far is the one removed from the other, that a hybrid or animal engendered between the two, we believe, was never known. It is true that some years ago a very large variety of the rabbit made its appearance, but from whence derived has not, we believe, been ascertained; but in all probability it was brought from some distant country. It was large,and very much the colour of the hare; it showed much bone, with length of body. The flesh likewise was high coloured and savoury; and, when it was dressed after the hare fashion, was no mean representative of that admired game. The proof of its being a true rabbit, however, was manifested by its interbreeding with its own kind and with the common rabbit; but between it and the hare no intercourse was ever observed, nor were any hybrids ever bred; which set the matter at rest, and furnished an additional proof, that the rabbit and the hare are each a distinct animal *sui generis.* Having heard nothing of it of late, we presume the variety itself to be out of date, or that it has blended itself by interbreedings with the olden English rabbit; and as we know what great alterations in the form and qualities of animals are occasioned by domestication, under which the size, the colour, and the very habits, may be made to undergo vast changes, we can readily suppose that such has occurred here. We see this exemplified in the animal before us, now become of much importance both as an edible and as aiding in clothing us.

2683. *Four kinds of rabbits* are acknowledged among dealers and fanciers, — *warreners, parkers, hedgehogs,* and *sweethearts.* We hardly need intimate that the warrener is of the kind we have already described, and given some representation of in our embellishment of rabbit shooting. The hedgehog breed we have also noticed when we described the certainty of finding them in hedgerows and in thick wood covers where the soil was not sufficiently sandy to be made a subterranean dwelling. Deprived of such a resource, they become naturalised to living above ground; the coat, however, loses some of its furry quality. The *parker* rabbit lives on the upland likewise, as in gentlemen's parks, pleasure grounds, and broad open grazing grounds, and it breeds in any convenient spot. Between this and the last variety, it requires the eye of the professed warrener to distinguish the difference. *Sweethearts* are the tame varieties, now multiplied into innumerable diversities of size, character, and colour, from the olden to the lop-eared; and from the middle-sized to the monster of ten pounds' weight; indeed, one exceeding fifteen pounds was exhibited at Lord Somerville's show, The fecundity of the rabbit is extreme, and it was a bountiful ordination of Providence to make it so, seeing it has little tendency to do injury, but vast capabilities to render us essential services. " Rabbits," says Mr. Daniel, " will breed at six months old, bear seven times annually, and bring five young ones each time; supposing this to happen regularly during the space of four years, and that three of the five young at each kindle are females, the increase will be 478,062. The calculation has been made from eight young at each of the seven kindles, amounting to 1,274,840: but that is much too high, for the wild rabbit was never known to have eight at two successive kindles, and perhaps five is beyond the fair average. Under the first statement, being overstocked with these animals might justly be feared; but man, birds, and beasts of prey, make great devastations among them. The rabbit affects a temperate and warm climate, and bears great cold with difficulty. In Sweden they are obliged to be kept in houses. Spain is their native country. The Island of Minorca is very remarkable for its growth of rabbits, but their flesh is so rank that, instead of serving as food, they are an incumbrance to the people inhabiting it, who to prevent the land from being overrun by them, are called upon by the governor to give their assistance two days in every year to destroy them; and in the time of the Romans they once proved such a nuisance in all the Balearic Islands, that the inhabitants were obliged to implore the aid of a military force from Augustus in order to exterminate them. Lincolnshire, Norfolk, Suffolk, and Cambridgeshire, where the soil is sandy, are the counties in which they are most plentiful, whence immense numbers are brought for the supply of the London market." (*Rural Sports,* vol. i. p. 577.) The history of the rabbit is further treated on in his work, to which we would refer the reader; and should his inquiries extend to the culture and nourriture also of this animal, he will find much to interest him in Mowbray's *Treatise on Breeding and Rearing Domestic Animals.*

2684. *Of hare shooting* we have little to say, farther than when engaged in other shooting, and a hare crosses one's path, flesh and blood, as the phrase runs, can hardly resist the temptation of raising the gun at her; and some how or other the sympathy between the hand and the eye is such, that the trigger is pulled; and, as puss is a pretty full sized object, chances are against her. But to go abroad purposely to shoot a poor unfortunate animal so eternally snared, so many months hunted by hounds, and so many coursed by greyhounds, is giving the odds against her. If however, brother sportsman, you must have a shot at puss, should she rise before you, or should she cross your path, aim at her head, and she will be a more certain shot and much cleaner killed than by any other aim; and do the same also if she be running in a straight line from you. If you have a double gun, and the second barrel is loaded with shot one or two sizes larger than those in the first barrel, give her that; she will be cleaner killed that way, and will be certainly pulled up at any distance within sixty yards "*if your powder be straight.*" Colonel Hawker remarks, that when a hare is coming towards you do not shoot until she be very close, otherwise her skull will ward off the shot, and for which caution there does really appear a call; nevertheless, the only time we believe that we ever had an opportunity of taking a front shot at a hare, was when some shooters in a wood had disturbed one who was making her way down a fallow field which we were crossing. Poor puss received our foreright discharge at about thirty yards' distance, and the velocity of her previous pace rolled her over and over. One shot had penetrated her eye, and several her chest. Of shooting a hare on its form we have only to say, that none but the strongest necessity can excuse it.

Subsect. 18. *The Greater Bustard.*

2685. *The greater bustard* (*Otis Tarda* Linn., *fig.* 428.), although now seldom met with in England, is however too great an honour to the country to be passed over without notice. We hardly need say that it is the largest of our land birds, being as much as four feet long, and from twenty-five to thirty pounds in weight. It also merits our attention from its connecting links in ornithology, some of which assimilate it with gallinaceous birds, and others with the ostrich and cassowary. Of the former connection a proof is offered in the difference of colour between the flesh of the pectoral muscles and those of the other parts of the breast, a character common to many of the *Gallinaces.* This variation to a supposed similarity of colour in the whole flesh of the breast in this as in many, but not in all birds, gave rise to a curious oversight. "In 1804," Colonel Montague tells us, "one was shot and taken to Plymouth market, where a publican purchased for 1*s.* what would have fetched 2 or 3 guineas where its value was known; this rare wanderer was, however, so entirely unknown, that it was rejected at the second table as improper food, in consequence of the pectoral muscle differing in colour from the other parts of the breast, a circumstance not unusual in birds of the grouse kind. Some country gentlemen supping at the inn the following evening, and hearing of the circumstance, desired that they might be introduced to the princely bird, and partook of it cold at

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GREATER BUSTARD.

their repast." (*Ornithological Dictionary*, p. 63.) This character, which has given rise to its classification with granivorous birds, is however erroneous. "Its gizzard," Sir Everard Home says, "is evidently not to be classed with them, but is more like that of the raven. It has a thick cuticular lining, and a weak digastric muscle; but the gastric glands are uncommonly large, so as to have attracted the attention of M. Perrault, who has given an account of their structure, saying, that they are conical tubes, terminating in a point at one end and open at the other, and are larger than in any other bird except the ostrich, whose solvent glands he appears not to have examined. 'As I have not,' says this gentleman, 'had an opportunity of examining these glands in the bustard, I must rest this account of the structure of the glands upon M. Perrault's authority, as stated in the work on *Comparative Anatomy*, published under the patronage of Louis XIV. in 1676.' Understanding that the bustard in India is a favourite bird for the table, and that all bustards are there considered to be granivorous birds, I was unable to reconcile this circumstance with the structure of its digestive organs; but this difficulty is solved by the following account of the mode of feeding this bird, which is taken from Mr. Hunter's notes upon this subject, who kept a cock bustard a whole summer in his garden. It died in November, apparently from the cold of the winter. He killed mice and sparrows with his bill by pinching their heads, and then swallowed them whole, even when of considerable size. It was easy to observe a large mouse going down his throat, making a moving tremor till it came to the turn of the neck; it then moved backwards, and, although out of sight, yet its progress was traced by the feathers between the shoulders separating and closing again as soon as it passed into the gizzard. It was fond of worms, and, while the gardener was digging, stood by him, and looked out for them. It ate the buds of flowers, and particularly of roses; also the substance of cucumbers, but not the outside. From these observations the bustard is evidently fitted more particularly to live on animal food." (*Library of Entertaining Knowledge*, FACULTY OF BIRDS, vol. iii. p. 154.) Mr. Daniel's description of the bustard being derived from Bewick, is likely to be correct, and is as follows: — "Its bill is strong, and rather convex; its eyes red; head and neck ash coloured; on each side of the lower bill is a tuft of feathers, from five to nine inches long; the back is barred transversely, with black and bright rust colour; the greater quill feathers are brown, the belly white; the tail consists of twenty feathers, the middle ones are rust colour barred with black, those on each side are white; the legs are long, naked above the knees, and dusky; it has no hind toe; its nails are short, strong, and convex, both above and below; and the bottom of the foot is furnished with a callous prominence, which serves instead of a heel."

2686. *The female is said to be about half the size of the male;* but we ourselves had been led to believe, from good authority, that the difference stated between the male and female bustard was erroneous; and a note in Mr. Daniel's account confirms our opinion that such is the case, or, at least, that her proportions are nearer to his than are set forth: — "On the 29th of September, 1800, Mr. Crouch, of Burford, shot a hen bustard on Salisbury Plain, which measured from tip to tip of the wings full six feet, and upwards of three feet from the point of the beak to the extremity of the tail: perhaps, however, this unusual size was the result of age. This bird was killed at the distance of forty yards, with a common fowling-piece, and with such shot as is generally used for partridge shooting. There were two other bustards in company with the one shot, neither of which appeared to be hurt." The crown of her head is of a deep orange, crossed with transverse black lines, the rest of the head is brown; the lower part of the foreside of the neck is ash coloured; the female wants the tuft on each side of the head. In the rest of the plumage she resembles the male, except that the colours of the back and wings are more dull: the male has however an essential distinction, being furnished with a *pouch*, capable of containing nearly seven pints of water, the entrance being immediately under the tongue. Dr. Douglass first discovered this singular reservoir, which the bird is supposed to fill with water, as a supply in those dreary plains where it is accustomed to wander. It is also, without doubt, of use to the female while sitting, which is generally at a distance from water, or for the young, until they can leave the nest, the male bird, without doubt, furnishing the supply. A further use of it has been observed at Morocco, where they fly the hawk at the bustard; on the attack of the hawk, it has been known that the bustard has spirted out the water against the assailant, and has by this means baffled the pursuit of its enemy. The female makes no nest, but, scratching a hole in some dry field, drops two eggs upon the ground, as big as those of a goose, and of a pale olive brown, sprinkled with small dark spots, resembling the brown colour of the plumage; upon these eggs she sits for thirty days. The same jealousy which marks the conduct of many other birds, is observed in her also. If in her absence from her nest in quest of food any one handles the eggs, she immediately abandons them. The bustard feeds on corn and vegetables, and upon those large earth-worms that appear in great quantities on the downs before sun-rising in the summer; these being replete with moisture answer the purpose of liquids, and enable them to live long without drinking on these dry and extensive tracts, and without having recourse to the admirable magazine before mentioned: like the ostrich, it also swallows small stones, bits of metal, &c. Buffon relates, that in the stomach of one opened by the academicians, there were found (besides small stones) no less than *ninety doubloons*, all worn and polished by the attrition of the stomach, but without any appearance of erosion. Bustards were formerly more frequent in this island than at present; they then inhabited most of the open counties of the south and east, from Dorsetshire as far as the Wolds in Yorkshire. In France they are seen in the spring; in England they were in greatest numbers in autumn; and were now and then met with at that season in large turnip fields, near the Downs in Wiltshire, in troops of fifty, or even more. In Sir Robert Sibbold's time they were found in the Merse, but are now supposed to be quite extinct in Scotland. At the time alluded to they usually kept to their old haunts, seldom wandering above twenty or thirty miles; they run most rapidly, but very slowly take wing; they are sometimes caught with greyhounds, and the chase is said to afford excellent diversion. In Hungary this bird is so common as sometimes to be seen four or five hundred in a flock. Mr. Daniel also tells us, that "in returning out of the fens in the dusk of the evening from snipe shooting some years since, he shot at a bustard which flew very low over his head: he did not at the time know what bird it was; and although the gun was charged with very small shot, the bird, from the short distance when struck, was so wounded as to be caught by a shepherd within three hundred yards of the place the morning after. This bird weighed nearly twenty-eight pounds, and the shepherd sold it for a guinea to a gentleman at Cambridge." (*Rural Sports*, vol. iii. p. 27—29.)

The bustard was, within thirty or forty years, to be met with on Salisbury Plain, as well as on some other large plains of England. The Wiltshire shepherds state, that "their young ones were frequently taken by their dogs on the downs before they were capable of flight; and the bustard eggs were also eagerly sought after for the purpose of hatching under hens. Half-a-guinea was no unusual price for an egg, and ten or twelve guineas a pair have been given for young birds not full grown. A person at Tilshead, contiguous to the Downs in Wiltshire, is reported to have reared a great many in this way; and the consequence has been, or eventually will be, a total extinction in a few years. (*Ornithological Dictionary*, p. 63.) Formerly the bustard might be met with in the Wolds of Yorkshire, and some open parts of Scotland, but it is now, I believe, never met with here. It is yet common in Russia, Germany, and Tartary; but Temminck says it is rare in Holland. Is it not singular, however, that so accomplished a naturalist as Temminck should not have been aware of the aqueous reservoir in the throat of the male bustard? and such must have been the case, for he does not even allude to it. In India a very large bustard is common, but is little noticed by European naturalists. Its length from bill to tail is three feet nine inches; height four feet three; breadth eight feet two; weight about thirty pounds. Its bill two inches three quarters long, but more slender and less arched than the European species: some seen in the elevated plains of southern India are much taller than these even. They walk very fast, but require much pressing to make them take wing, when their flight is slow and steady, which enables the Indian marksman to make sure of them with his rifle, particularly as they seldom mount aloft like the heron, although their flight much resembles it in manner, and with its legs and feet drawn up like that bird. Bustards were always much sought after, particularly the young hen, the breast of which exhibits, it is said, when cut for the table, numerous triangular cavities; which we from analogy should judge to be receptacles for air to lighten the bird in its flight.

2687. *The shooting of the bustard* was once a very favourite amusement among the gentry. Stratagem could seldom succeed unless the device was very adroitly managed. Carts and other vehicles, in which a gunner was concealed, have been made use of, which the simple birds allowed to come near them, and from which they were fired on. The stalking horse was in use in Markham's time, and long since that time the shepherds and others, concealed by a hurdle covered with boughs and carried before them, so deceived the birds as to enable the pursuer to get a successful shot at one or more. They were also, as we learn, coursed, and being extremely averse to take wing, depending on their speed in running which is great, they were occasionally overtaken by the greyhounds, and if not killed on the spot, were held until the horsemen reached the scene of action. Salisbury Plain, which was one of their last resting-places, has, we believe, not infrequently exhibited such a scene, but not of late years.

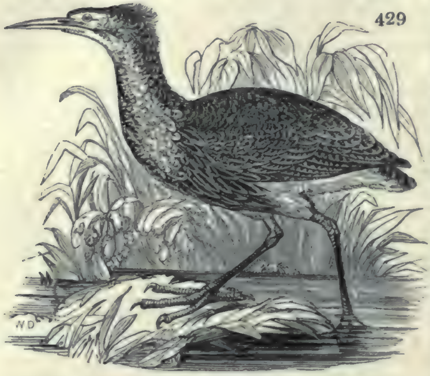
2688. *The little bustard* (*Otis Tetrax* Linn.) is, indeed, a very diminutive type of the large species, weighing only twenty-five ounces, and being but sixteen inches and a little more in length, and thirty-five in breadth with outstretched wings. Bewick says of it, that "it is very uncommon in this country;" and continues, "we have seen only two, both of them females. It is, however, common in France, where it is taken in nets like the partridge but it is not an easy prey, being a very shy and cunning bird; if disturbed, it flies two or three hundred paces, not far from the ground, and then runs away much faster than any one can follow on foot. The female lays in June, to the number of three or four eggs, o a glossy green; and, as soon as the young are hatched, she leads them about as the hen doe her chickens, and they are able to fly about the middle of August." (*British Birds*, p. 360.

Sect. III. *Fenbird Shooting.*

2689. *Fenbirds* are somewhat difficult to individualise, as many that uniformly breed in the fens, yet rove at large in very different localities during the first part of the year. The fens, alas! the former scenes of the resort of the lover of wildfowl shooting generally, are no longer what they were. Mr. Daniel notices them in his time, and as we also remember them "When they were vast tracts of morass covered with water, and very shallow, except in the drains, or some particular places; they abounded also in fish, such as pike, perch, tench, roach, bream, and eels. Reeds and flags grow almost universally throughout the fens, and yield shelter to a great variety of waterfowl: these reeds are also a sort of harvest to the neighbouring inhabitants who mow them annually, and, when procured, they prove a much more durable thatch than straw, and not only cottages but very good houses are covered with them. Stares or starlings, which during winter resort in myriads to roost in these reeds, are so very destructive in breaking them down by the vast numbers that perch upon them, that a reed bed has been damaged in value to the amount of upwards of 100*l.* in one night: the people are therefore very diligent in driving them away, and in their attempts to do so are at great expense in ammunition to free themselves of these troublesome guests. Stocks of reeds, properly harvested and stacked, are often, to a fen farmer, worth 300*l.*" (P. 199.) The birds however, which even yet shelter here, are much too numerous to be individually described. Mr. Daniel himself, a very zealous fen shooter, thus enumerates them; and as what follows from his pen illustrates the former state of these (to sportsmen) celebrated localities, we shall make no apology for introducing it: — "Here might be seen wild ducks, geese, garganies or summer teal, pochards, shovellers; and teals, pewits, gulls, terns, herons, bitterns, coots, waterhens, waterrails, ruffs and reeves, knots, godwits, redshanks, lapwings, and many others also, breed here and rear their young.

"Should any Cambridgeshire man, who was a fen shooter thirty years ago, honour this book with his perusal, he will not wonder at seeing the name of Old Merry of Stretham Ferry, mentioned as a truly scientific conductor of the kind of sporting to be met with in the fens. In his knowledge of the haunts of the different species of birds which visited them, he was most precise; and in the navigation of his punt (a small boat) along the ditches, which are, in fact, the only roads through the fens, his judgment and assiduity were alike conspicuous: he knew when a drought had lowered the water, where he could make good his point; and frequently, whilst shooting parties with other guides were wearying themselves with towing, or from the noise occasioned by being towed, all the birds in the vicinity were disturbed, Old Merry was steering his punt silently to the scene of action; and in the fogs, which were often there so thick as to exclude objects at the smallest distance, or in the dark, he was equally collected, and knew how to proceed in the morning, or return at night, in spite of all obstacles. As a marksman he was extraordinarily expert; with a gun upwards of six feet in the barrel, and stocked by the village carpenter, and although its weight was such that nothing but a most powerful arm could extend and elevate it, yet he would kill a snipe flying with it. Before exhibiting this proof of dexterity, he usually requested to be supplied with a fresh charge, in lieu of what he threw away (as he termed it) after so worthless a bird: the charge of this *demi-culverin* was two pipes and a half of powder and three of shot, and the wadding was a little dry sedge, of which he always took a whisp in the punt. At wildfowl, either single or in trips, he was a fatal shot: from long habit his eye and ear were both singularly keen at their approach in the air, and his gun generally verified the truth of this observation when he fired at them in the twilight, or in the fogs; and, for the most part, his caution to look out at the coming of the birds was so exact, that no person could well complain of want of shots if they obeyed his directions: his knowledge (either from the wind, or some other cause) in seeing the wildfowl fly, to what particular spot they would direct their course, was accurate, and his punt was certain to be either in a direction to intercept them in their flight, or to be concealed among the reeds close to where they assembled to feed at eve or morning. Old Merry had not been much troubled with education: rude as the country in which his occupation lay, he possessed, perhaps like *that*, materials which would have received and well requited the labour of cultivation; he had an innate civility, and evenness of temper which very few could ruffle, always preserving the most unassuming behaviour; and, whilst reciting a fund of fen shooting anecdotes, was ever indefatigable in procuring amusement for his employers." (*Rural Sports*, vol. iii. p. 201—203.) We do not remember Merry himself in our journeyings in this direction; but we well remember to have heard the sportsmen of his neighbourhood talking of his vast experience in fen shooting, and how constantly he was engaged by gentlemen fen shooters who visited these localities. Extended as this account is, we hope, from the interesting nature of the locality, and the peculiar aptitudes of the old fenman Merry, we shall stand absolved for introducing it.

Subsect. 1. *The Bittern.*



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THE BITTERN.

2690. *The bittern* (*Ardea Stellaris* Linn., *fig.* 429.) is not very unlike the heron in figure, but is smaller, and wears a different plumage. "The feathers," says Colonel Montague, "on the top of the head are black; those on the hind head, neck, and breast, are long and loose; the plumage in general is of a dull pale yellow, elegantly variegated with spots and bars of black; the greater covert and quill feathers ferruginous, regularly barred with black; tail short; legs pale green; toes and claws very long and slender, the middle claw serrated on the inner edge. The female is rather less, the plumage not so bright, and the feathers on the neck not so long and flowing as in the male." (*Ornithological Dictionary*, p. 36.) Its bill is much shorter than the bill of the heron, and is weaker also. It is truly a fenbird; but we cannot agree with Mr. Daniel, or with Latham and Temminck, that it is very common in England; on the contrary, much as we have travelled, we do not remember to have seen more than a dozen; the last we saw we shot as it was escaping from the reeds surrounding a mill-pond in the neighbourhood of Lymington, Hants, a locality admirably adapted for this bird to be found in, and yet the miller told us he did not remember to have seen more than one before, although he had lived on the spot several years. It is, however, a fenbird, and it remains with us the whole year, making its nest of rushes among the reeds about April. "The female lays from four to six eggs, of a pale greenish ash colour; the young are produced in twenty-five days, and are naked and ugly, appearing almost all legs and neck; and they cannot venture from the nest until twenty days after they are hatched, during which time the old birds feed them with slugs, small fish, or frogs. The hawks which plunder the nests of most of the waterfowl, seldom dare to attack that of the bittern, the old ones being always so alert in defence of their offspring. In February and March the males make a deep lowing noise, morning and evening, which ceases after the breeding season." (*Rural Sports*, vol. iii. p. 232.)

This *booming* of the bittern, or *lowing*, as Mr. Daniel calls it, has often been noticed by writers. Colonel Montague thus observes on it: — "Those who have walked in a summer's evening by the sedgy sides of unfrequented rivers, must remember a variety of notes from different waterfowl; the loud scream of the wild goose, the croaking of the mallard, the whining of the lapwing, and the tremulous neighing of the jack-snipe. But of all these sounds there is none so dismally hollow as the *booming* of the bittern. It is impossible for words to give those who have not heard this evening call an adequate idea of its solemnity. It is like the interrupted bellowing of a bull, but hollower and louder, and is heard at a mile distance, as if issuing from some formidable being that resided at the bottom of the waters. This is the bittern, whose windpipe is fitted to produce the sound for which it is remarkable; the lower part of it dividing into the lungs being supplied with a thin loose membrane that can be filled with a large body of air, and exploded at pleasure. These bellowing explosions are chiefly heard from the beginning of spring to the end of autumn, and are the usual calls during the pairing season. From the loudness and solemnity of the note, many have been led to suppose that the bird made use of some external instrument to produce it, and that so small a body could never eject such a quantity of tone. The common people are of opinion that it thrusts its bill into a reed that serves as a pipe for swelling the note above its natural pitch; while others imagine that the bittern puts its head under water, and then, by blowing violently, produces its boomings. The fact is, that the bird is sufficiently provided by Nature for this call; and it is often heard where there are neither reeds nor water to assist its sonorous invitations. It hides in the sedges by day, and begins its call in the evening, booming six or eight times, and then, discontinuing for ten or twenty minutes, it renews the same sound. In Scotland the sound of the bittern is so very common that every child is familiar with it, though the birds, from being shy, are not often seen. The poet Thomson seems to have had a very erroneous notion of the manner in which the bird produces the noise, when he says,

> " ——— So that scarce
> The bittern knows his time with bill engulphed,
> To shake the sounding marsh."

On the contrary, I have repeatedly remarked that the bittern usually booms while flying high in the air: its lofty spiral flight is, indeed, a matter of common remark:—

> "Swift as the bittern soars on spiral wings."—*Southey*.

A line which, I may remark, is not very ornithological, inasmuch as neither the bittern, nor any other bird, has spiral wings. Southey, however, seems to be well acquainted with the boom of the bittern:—

> —— "At evening, o'er the swampy plain,
> The bittern's boom came far."

(*Ornithological Dictionary*, p. 37.) On the above passage, Mr. Dunbar remarks:—"In Scotland this bird is now much rarer than in England, and, instead of its sound being 'familiar to every child,' it is so scarce that not one out of a thousand has seen it, or heard its booming cry. In the winter of 1830, two or three specimens were killed in the north of Scotland, and a few in the south, but since then the bird has been very seldom seen. To our knowledge the bittern does not breed in Scotland, nor does it habitually breed in any part of England, though we do not question that a few some time or other have bred in the fens. At the present epoch, though all England should be searched during the breeding season, we feel cnofident that no bittern's nest would be found."

2691. *The shooting of the bittern* is not a very great achievement. It rises heavily, and having risen, it wings its way, if it have not been disturbed, almost as heavily; but when it has been suddenly flushed, it often rises rapidly in a spiral ascent, and having gained a sufficient height, it makes its way off in a direct line, and is then by no means an easy shot. It will be fortunate, in such case, should the sportsman have a double gun; for, in the first place, it may elude the aim by its irregular rising, and it may take more to bring it down than he is prepared with; and, in the next, its spiral gyrations will require both charges, and good marking into the bargain. We therefore would recommend, if the double gun be in hand, that the moment the bittern rises it may receive a shot, as its rising is often so unsteady. If it be making off in a direct line, it may be left to the shooter's discretion, and one well directed shot will be better than two, as it will disturb its beautiful plumage so much. Be it however remembered, that if it be only winged it will make a desperate resistance; and, when secured, no persuasion will bring the stubborn bird to eat, and, if forced, it will regurgitate unless it be ringed, as did the one we shot: it will therefore, in our opinion, be more prudent and more humane to destroy it immediately. If the bird be not much mangled, the circumstance of its being both rare and ornamental leads us to recommend its being preserved by some good bird stuffer; or, should the sportsman entertain a strong wish to preserve the winged bittern alive, he may do as is done in the case of herons, which are equally obstinate, and will disgorge any food forced down, unless a ring be placed around the neck sufficiently tight to prevent regurgitation, and yet not to interfere with respiration.

SUBSECT. 2. *The Heron, Crane, and Stork.*

2692. *The heron* (*Ardea major* Linn., *fig.* 430.) has already occupied a portion of our attention as a subject for the sport of hawking, p. 712.; but as this bird is occasionally pursued by the gunner also, and is furthermore a very interesting and striking object among the *fenbirds*, he will require some additional notice here. We unite with Mr. Daniel in contradicting Buffon, who describes the heron "as exhibiting the picture of wretchedness, anxiety, and indigence, condemned to struggle perpetually with misery and want, and sickened by the restless cravings of a famished appetite:" and we equally unite with Mr. Daniel in supposing that the heron suffers no more than any other animal whose attention is employed in looking for his prey. On the contrary, we consider the hope and expectation are to this bird a source of pleasure. Thus it is that our imaginative writers are so apt to paint Nature in accordance with their own poetic notions or contracted views, without regarding the operations of Nature generally for the supplying the wants of her creatures. It is true that this bird is seen to stand for hours even transfixed as it were, and apparently as inanimate as the willow stem within a few yards of it. Nature however, to fulfil her kindest purposes, gave the bird this aptitude, by which it is made to appear as a perfect stock. Not a motion is to be observed in it, for the slightest displacement of any part of the bird would at once inform the fish of their danger. But they having surveyed and swam around and around the unmoving mass, at length regard it with equal indifference as they do the alder or willow stump. During

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THE HERON.

this apparent torpor vast numbers of the smaller fry pass and repass with safety, for this giant does not make war on pigmies. Let but a carp, roach, dace, or eel, of several ounces make its appearance, and with unerring certainty it is immediately within the serrated mandibles of the heron; while two others may probably at the same moment become inclosed, one in each foot, where they also are safely retained by the sawlike processes which garnish the centre claw of each. These manifestations of cause and effect, of wants and liberal means of supplying those wants, are strikingly apparent throughout the whole of Nature's works; but they impress us more forcibly when we regard them in the living objects which most immediately concern us. It is thus, though professing to write for the sporting world particularly, that we would likewise take this opportunity of awakening attention in the minds of many others also, by pointing out to them proofs of design in objects likely to fall, on many occasions, under the eye of the walker abroad; and although such facts may probably not now greatly interest him, either as a sportsman or as a mere taker of exercise, yet when either age or decrepitude from gout, &c. may overtake him, perhaps these notices being then considered as interesting may lead to further inquiries, and the great page of Nature that was in the plenitude of youth and health disregarded, although then widely opened before him, may now be ransacked, and his battles, we mean his huntings, his shootings, and his anglings, may be enacted over again, under new and more enlarged views than heretofore.

2693. *Herons, cranes, and storks,* present characters so much in common, that although there are above eighty distinct species, yet Linnæus classes the whole together. Some modern ornithologists, however, have separated the heron from the crane and the storks; and under the more definite views now entertained on genera and species, this is not done without propriety. The stork however, if Bewick's correct figures are referred to, will show the very close resemblance it bears to the heron. It is nevertheless now so seldom seen in Britain, as to render it not needful to be noticed in a sporting point of view. As is well known, it has been immortalised by many scriptural references and figures of speech derived from its habits. (See Jer. viii. 7.; see also Dr. Harris's *Natural History of the Bible*, art. Stork.) When we were campaigning in Holland, we were extremely pleased to observe how welcome a visitant this bird was to the natives of the country. It arrives, we learned, about the beginning of April, roosting on the houses; it also makes its nest on or about each chimney. Early in the autumn, having reared its young, the whole prepare for their departure in vast congregational meetings, and loud chattering issues from the whole assemblage. Two or three of these meetings having occurred, on an appointed day the whole leave, taking a southward course to Africa, particularly to Egypt. In 1833 the following note appeared in the public journals: — " Last year a Polish gentleman having caught a stork upon his estate near Lemburg, put round its neck an iron collar with this inscription, — *Hæc ciconia ex Polonia* (this stork comes from Poland), and set it at liberty. This year the bird returned to the same spot, and was again caught by the same person. It had acquired a new collar of gold, with this inscription, — *India cum donis remittit ciconiam Polonis* (India sends back the stork to the Poles with gifts). The gentleman, after having shown the inscription to his neighbours, again set the bird at liberty." (*Atlas*, December 21. 1834.) To return, however, to the heron; it is a great gormandiser, and Mr. Daniel therefore, under a supposition that it lives on fish only, considers that it must be capable of bearing long fasts, since fish and frogs are not to be procured during very severe frosts. We, however, have no such fears for this bird, being aware that he and the whole of his vast tribe are omnivorous; at least they are not all particular about their food; as therefore, under such circumstances, so many other animals, pinched also by want of food, must be driven abroad in search of it, they then become objects of the attack of the heron. Nor is at all unlikely, that instinct may teach him to make holes in the ice, which by attracting the fish to them as air-holes, may thus furnish him with his natural food, should the diminished energies of other animals around him fail in offering a supply; for we know full well, that it is the character of the whole tribe of these devourers not to be over nice in their appetites.

2694. *The predacity of the heron is almost proverbial,* and yet these birds congregate and live in great harmony together, which they may indeed do without breaking the family compact, as they are unlimited rangers. Of their social disposition, Mr. Pennant offers proof, when he says, they perch and build in trees like rooks; and that, at Cressi Hall, near Gosberton in Lincolnshire, he had counted above eighty nests in one tree (surely it must have been a very large one). It is also well known, that, in some bordering parts of the kingdom, they build their nests in rocky cliffs over the sea: and it may be further observed, that when a number is thus located, it is always within a few miles of some well stocked mere, river, or large pond, which can yield a supply of fish sufficient for the whole fraternity; for, as far as our own experience goes, they are not very fond of sea fishing, but will fly many miles over land in search of fresh-water fish. When we lived at Tollesbury in Essex, we found several of their nests among the reeds which girted the shore of that part of the country. Mr. Daniel, then our neighbour, likewise notices the visits of these birds to the same spots, and particularly remarks that their nests " were made of sticks and lined with wool or feathers, in which the female lays five or six large eggs of a pale green colour. During incubation, the male passes much of his time perched by the female. They desert their nests during winter, except in February, when they resort to and repair them. The young may be easily tamed; but when old birds are captured they will refuse nourishment, and shortly pine away." (P. 403.) He also states a circumstance which we know to be true, that he kept three or four of the young ones he took from these nests, and from what he saw of their voraciousness, the account in the *Gentleman's Recreation* of a tame one eating fifty small roach and dace, one day with another, he can believe is not exaggerated. In their fishings (which we have watched with much interest in Ireland, particularly in one instance, where a tame young one was kept in a gentleman's grounds and from which he seldom strayed, as the well stored ponds afforded him an ample supply of food), as a fish moved near, the heron instantly struck him, and usually crosswise. With this bird the fish was not always thrown up into the air, as Mr. Daniel says was done with the herons he kept. It is true that sometimes the bird we allude to did throw his fish above him, but he more often elevated his head aloft in the air, and then opening his mandibles he adjusted his prey so as to bring its head downwards, which done, he instantly swallowed it. As, however, a disposition to throw the fish above the head had been manifested, it is probable that the youth of the heron we saw prevented its having adopted the entire action of throwing it aloft and then catching it.

2695. *On the shooting of the heron* we have little to offer, although we have shot them on the Essex and Sussex coasts, and have attempted it in Ireland, and in Wales, but less successfully, for the bird itself is there more wary, because more followed. The wildfowl gunner with his long tube has a better chance, for he can pull him down at a considerable distance; but the moll, as he is called, will seldom wait for any one to take other than a hopeless shot at him, who has only a moderate piece and moderate charge to present at him. We have however, five or six times in our life, been too many for this keen eyed bird; and should you, brother sportsman, have the same luck, and it be your first shot, let us caution you to be wary how you approach your prey; for he will resist much if not mortally wounded, and die very hard. Neither, without great care on your part, will he go unrevenged by striking you with his bill, which being long, extremely sharp, and wielded with extraordinary force, will penetrate even the stout fen boot, or perhaps your body may receive the blow. Watch, therefore, your opportunity to put your foot on his neck, and then do what you will with him afterwards. We cannot, however, avoid giving one more caution: call your dog to you, and by no means let it approach the wounded bird, whose bill has penetrated, not only the eye, but has also entered the brain of a dog attempting to seize him.

Subsect. 3. *Ruff and Reeve.*

2696. *The ruff* (*Tringa pugnax* Linn., *fig.* 431.) will first engage our attention, as he has qualities and personal advantages his mate does not possess. The length of the ruff is about twelve inches, his weight ranges between six and eight ounces. The bill, which is reddish at the base, is about an inch and a quarter long, and is tipped with black. The distinctive sexual mark from whence he derives the name of ruff, differs in almost every one in its colouring, though less in its dimensions and method of carriage. It is, however, not perfect until the second year of his age, when it becomes a vast feathered mass, which the animal at pleasure elevates and swells out by a muscular apparatus operating on the skin of the neck, which Mr. Daniel aptly likens to the ruff of our ancestors: a portion of these feathers stands up over each eye imitating ears; and this singular bunch of feathers grows from the back of the neck, spreading wide on both sides; this tuft, and the feathers of the ruff, are frequently of different colours in the same bird: the ruff is of as many and various dyes as there are birds that wear it. Latham observes, " that of whatever hue the *ruff* may be, the breast differs very little, and the transverse markings on the upper parts of the plumage somewhat correspond, the ground tint being mostly brown." The tuft in the males is not a warlike ornament only, but is a sort of defensive armour, which wards off the blows, by the length, stiffness, and closeness of the feathers; they bristle in a threatening manner when the bird makes an attack, and their colours form the chief distinction between the

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THE RUFF.

individuals. In some the feathers are rufous; in others grey; some white; some of a fine violet black, broken with rufous spots: the white is most rare. In its form, too, the tuft is as variable as in the colours, during the whole time of its growth. This beautiful ornament drops when these birds moult about the end of June, as if Nature reserved her decorations and armour for the season of love and war. After the time of incubation, the long feathers fall off, the caruncles shrink in under the skin, so as not to be discerned, and their place is occupied by feathers; the males are no longer by their plumage to be distinguished, and both sexes abandon the places where they breed. The feathers that bear an uniformity of colouring in the ruff are the coverts of the wings, which are brown inclining to ash colour; the feathers on the breast, which are often black or dusky; the four exterior feathers of the tail, which are of a cinereous brown; and the four middle ones, which are barred with black and brown: the quills are dusky; the lower belly, vent, and upper tail-coverts white." (*Rural Sports*, vol. iii. p. 215.)

2697. *The reeve* (*fig.* 432.), is smaller than the ruff, and is not in the least pugnacious: she is entirely destitute of the collar plumage: she is also brown in her upper parts; the middle of each feather is dusky, the greater quills are the same; the secondaries rufous brown, and her legs incline to be yellow. She lays four eggs in the grass, which are white as their ground colour, and marked with iron coloured spots. The fowlers, it is said, avoid taking the reeves for two reasons: first, because they are smaller, and secondly, by sparing them, they hope to encourage the breed. The arrival of the reeves is the signal for the ruffs to begin to *hill;* that is, to choose a ground for love scenes — and it is usually some elevated spot. Each ruff is said to possess himself of a small mound, or part of this hill, which he wears quite bare by *hilling*, as it is called, or wearing it away with his feet. Mr. Daniel says, "When a reeve alights, the ruffs immediately fall to fighting; they use the same action in fighting as a game-cock, place their bills to the ground, and spread their ruffs. When a fowler discovers one of these *hills*, he places his net over-night, which is of the same kind as those called *clap*, or day-nets, only it is generally single, and is about fourteen yards long and four broad: at daybreak he resorts to his stand, at the distance of one, two, three, or four hundred yards from the nets — the later the season the shyer the birds, and he must keep the further off; he then makes his pull, taking such birds as are within reach; after that he places his stuffed birds, or *stales*, to entice those that are continually traversing the fen. A fowler has been known to catch forty-four birds at the first haul, and the whole taken in that morning were six dozen. When the stales are set, seldom more than two or three are taken at a time. An experienced fowler will take forty or fifty dozen in a season; they are fattened for the table with bread and milk, hempseed, and sometimes boiled wheat; but if expedition is required, sugar is added, which in a fortnight makes them a lump of fat; they then sell for half a crown a piece. Great nicety is requisite to kill them at the highest pitch of fatness; if that is passed over, the birds are apt to fall away. The method of killing them is by cutting off the head with a pair of scissors; the quantity of blood that issues is very great, considering the size of the bird: like the woodcock, they are dressed with their intestines; and, when killed at the critical time, epicures declare them to be the most delicious of all morsels." (*Rural Sports*, vol. iii. p. 218.)

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THE REEVE.

2698. *Ruffs and reeves* must not be considered as being spread throughout England generally. They are principally confined to the Fens of Lincolnshire, Cambridgeshire, the Isle of Ely, and to the East Riding of Yorkshire, all which are among their principal resorts. Occasionally, however, a slight sprinkling is met with in other moist localities; thus, before the fens around Bridgewater in Somerset were drained, they were to be seen there also. They are, however, becoming every season more and more scarce, owing in some degree to the havock made among them, but much more to the draining of the fenny districts. Colonel Montague says, that a few likewise may yet be met with about Crowland; we however believe, that the fens between Boston and Spilsby are the localities more likely to produce them at the present day. The sporting history of these birds was formerly a very interesting subject, and collected together numbers of gentry; some to watch their habits, some to shoot them, more to see them netted, and many more to eat them. For some time past we believe that 2 guineas per dozen has been demanded for them, when they have been put up by celebrated breeders, and have fattened properly. The shooting of them is dull sport, and therefore not now much practised; they flush badly, and the veriest tyro can hardly fail to hit them. Indeed, during the amorous season, no credit is to be got by disturbing them. But nevertheless they have once cut a conspicuous figure in sporting as well as gastronomic history; and the shot who could bring to bag a dozen was somewhat envied; though even then the breeder who could fatten them to monstrosity was much more so. Ruffs and reeves used to be frequently shot in Sutherlandshire, in November, by the sea side, in muddy creeks, whilst in search of food. At this season of the year what is called the "ruff" forms a part of their plumage. Ruffs and reeves have similar plumage.

2699. *The dotterel* (*Charadrius* Linn.), is the foolish fenbird (if we could believe all that has been said), which is taken by means of an unhappy propensity not unknown even by its betters, that of mimicking the spectator, be his attitude what it might, and thus he remained until the net of the fowler was thrown over him. Either this account was fabulous, or the bird became wiser; the former the most likely, for Willoughby states, to follow this sport, "six or seven persons go in company; when they have found the birds, they set their net in an advantageous place, and each of them holding a stone in either hand, they get behind the birds, and striking the stones often one against another, rouse them from their natural sluggishness, and by degrees drive them into the net. At present sportsmen watch the arrival of the dotterel, and shoot them, the decoying them by artifice, and driving them into the net, having been long disused." These birds are to be found in Cambridgeshire, Lincolnshire, and Derbyshire; we also saw them on the high moors of South Wales, but were told they are not common there.

2700. *The knot* (*Tringa Canutus* Linn., *fig.* 433.), is another fenbird, which, although not a very important subject to the sportsman, is nevertheless, as being somewhat connected with royalty, deserving of our notice. History informs us, that Canute, an olden king of England, was so fond of eating them, that the bird itself became known by the name of knute, or knout, as this king's name was expressed by his subjects, and that gradually it was shortened to knot, as regarded the bird itself. It weighs four ounces and a half, measures about nine inches, has a bill of a dusky brown colour, of rather more than an inch in length. The head, neck, back, and wings are ashen coloured, the tail-coverts white and dusky intermixed; the neck and breast streaked with brown, and their wings variegated. It is, in fact, a species of the sandpiper, and, like that tribe, inhabits the fens. It breeds with us, and one who has a sufficient knowledge of the fenbirds, informs us it comes over with the ruffs. It has the property of the fenbirds, of being more easily taken with nets than shot; for, if pursued, it runs rapidly through the reeds. When frozen out of the fens the birds betake themselves to the sea-shore, where they are much more approachable than most other shore birds, and are sometimes to be got in great numbers, when they will be found little if at all inferior to the ruff and his mate. The knot is said to be found in various parts of Europe; it has been met with also in Asia and America. Its eggs are pale ferruginous, marked with spots and streaks of rust colour and cinereous; in size rather inferior to those of the lapwings.

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THE KNOT.

2701. *The redshank, or pool snipe* (*Scolopax Calidris* Linn.), is also a true fenbird, where it is, or at least was, some years ago moderately plentiful. It weighs about five ounces, and is barely twelve inches long; its bill is nearly two inches in length, and has a dusky point and a red base; its head and the hind part of its neck is an ashy brown, with dusky streaks; wing-coverts ash colour mixed with brown. In action this bird resembles the lapwing, in flying round and round its nest, or round the spectator, who it supposes is approaching too near. Colonel Montague says of it, "It is not an uncommon bird upon many of our shores in winter; many breed in our marshes, on the verge of large pools, and in extensive swampy places. It lays four eggs, of an olivaceous brown, spotted and blotched with black, most numerous at the larger end; in shape and appearance much like those of the lapwing, but rather smaller. We have seen these birds on Romney Marsh in the breeding season." (*Ornithological Dictionary*, p. 412.) This author also considers the red legged sandpiper to be a variety of this species. In summer shooting this bird has afforded us much amusement, by his circuitous flights around us, on the heaths and moors frequented by them in the breeding season. These gyrations seldom fail to afford the sportsman a fair shot, and we really do not know a more instructive practice. Nor are the birds themselves, when dressed, badly flavoured. They are very plentiful in Holland, as we can assert from our own experience.

2702. *The godwit* (*Scolopax Ægocepala* Linn., *fig.* 434.), is a fenbird, but is subject to much variety both in size and plumage, which has given occasion to some authors erroneously to consider each of these varieties as a distinct species. It weighs from seven to ten ounces, and measures in length fifteen or sixteen inches. The bill, which is little reflected, is of a pale brown, and dusky at the point; the head, neck, and upper parts are of a light rusty brown, the breast ashy brown also; the belly and tail feathers are white. There is likewise a red godwit noticed by Colonel Montague, which he says is larger than this, weighing twelve ounces, and measuring about eighteen inches. The godwit was known formerly as a permanent resident with us, resorting to the fens from the moors, where they are taken by means of a stale, or stuffed bird, after the manner of the ruff and reeves. Towards the winter the godwit may be seen at the mouths of many of our large rivers, and, as we understand, it was then a very popular object of pursuit to winter fowl shooters. For ourselves we do not remember to have met with this bird; at least, if we did, we did not recognise it as the godwit, although its size, being fully equal to that of a woodcock, would render it an object of notice. At Hudson's Bay it packs, and in such numbers that Mr. Atkinson, a resident there, is said to have killed seventy-two at one shot. There is still another variety of the red godwit besides that above mentioned, "the greater covert of the wings so deeply margined with light greyish brown, as to appear almost all white at a distance, and the sides of the body had a few long streaks of brown." Bewick says, "The godwit is met with in various parts of Europe, Asia, and America: in Great Britain, in the spring and summer, it resides in the fens and marshes, where it rears its young, and feeds upon small worms and insects. During these seasons it removes only from one marsh to another; but when the winter sets in with severity, it seeks the salt marshes and sea-shores. The godwit is much esteemed by epicures as a great delicacy, and sells at a high price." (*British Birds*, p. 60.)

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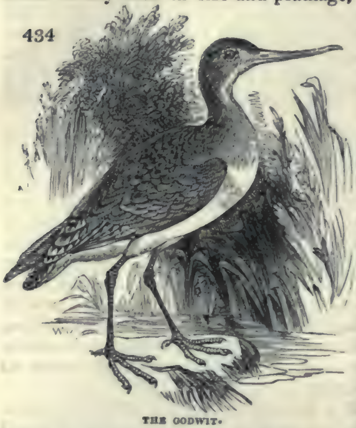

THE GODWIT.

Subsect. 4. *Plovers and their Varieties.*

2703. *Bewick very justly considers the plovers more as land than water birds*; at least it would appear that they connect these two vast families. Although they frequent the seacoasts, and are seen occasionally in moist places, yet during the whole of the summer months they inhabit mountainous districts, and breed in lofty situations. Consequently, as Bewick aptly remarks, "they are no more water birds than many of our small birds which repair thither for the same purpose."

2704. *The great plover* (*Charadrius Œdicnemus* Linn.). This bird, also called stone curlew and Norfolk plover, does not, according to some naturalists, belong to the plovers, but is rather a diminutive type of the bustard, and he certainly bears many bustard characters about him, and we are sure that every sportsman would regard him the more for such resemblance; and, as we write for such, we likewise have no objection so to consider him. He is about sixteen inches long, bill of a moderate length, eyes and eyelids pale yellow, both above and below, which pale streak forms a very characteristic mark. Upper parts of the body a tawny brown, each feather presenting a dark streak down its centre; the belly, thighs, and vent, are of a pale yellowish white; the legs are yellow, and naked above the knees, which are knobbed, as though swollen, and hence it is that one of his common names of thick knee'd bustard is derived. He is frequently found in Norfolk, and, as it is said, in several of the southern counties, but is not seen in the north. Mr. White notices this bird as frequenting the districts of Selborne, in Hampshire. The female makes no nest, but lays its eggs on the bare ground; and the chicks, almost as soon as hatched, are seen running about nimbly.

2705. *Of its value to the sportsman* we can say little but that it is a great tantaliser; so much so, that we have turned our back on one, as knowing we should be only duped into the loss of our time, our temper, and our shot, were we to pursue it, as Bewick must have done, or he could not have penned such a true picture as that which follows: —"Although this bird has great power of wing, and flies with great strength, it is seldom seen during the day, except surprised, when it springs to some distance, and generally escapes before the sportsman comes within gunshot; it likewise runs on the ground almost as swift as a dog; after running some time, it stops short, holding its head and body still, and on the least noise squats close on the ground. In the evening it comes out in quest of food, and may then be heard at a great distance; its cry is singular, resembling a hoarse kind of whistle three or four times repeated, and has been compared to the turning of a rusty handle. Buffon endeavours to express it by the words *turr lui, turr lui,* and says it resembles the sound of a third flute dwelling on three or four tones from a flat to a sharp. Its food consists chiefly of worms. It is said to be good eating when young; the flesh of the old ones is hard, black, and dry." (*British Land Birds,* p. 322.)

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LAPWING.

2706. *The lapwing, or pewit* (*Fringilla Vanellus* Linn., *fig.* 435.), as Mr. Daniel justly observes, "is so common that a detailed description is unnecessary. It is about the size of a pigeon, and weighs eight ounces; the plumage is beautiful, especially the crest; the male and female are alike, but the last rather smaller; is a constant inhabitant of this country, and seen on most of the heaths or marshy grounds; but, as it subsists chiefly on worms, it is forced to change its place in search of food, and is frequently seen in great numbers by the sea-shores, where it finds an abundant supply of *Molusca.* It is everywhere well known by its loud and incessant cries whilst on the wing, and whence, in most languages, a name has been given to it as imitative of the sound. The pewit is an active bird, almost continually in motion; it runs along the ground very nimbly, and bounds from spot to spot with great agility; it frolics in the air in all directions, assuming a variety of attitudes, remaining long upon the wing, and sometimes rising to a considerable height." (*Rural Sports,* vol. iii. p. 227.) The hen bird lays four eggs of a dirty olive spotted with black, which she deposits in a small indentation of the ground, having scraped together a little dry grass or heather to keep them from chilling. The young birds run nimbly very soon after they are hatched, and it is then that the assiduity of the parent bird is most conspicuous. Almost as soon as a stranger appears, at even a quarter of a mile distant, they begin to evince a sense of alarm by rising in the air, making circumvolutions towards the stranger to attract his attention. Should his steps be bent towards the spot where the young are crouched, it is most probable that both parents will alight on the ground and run before him, sometimes, like the partridge, feigning lameness. Taking advantage of these artifices, we have very many times sought around and around for these young, but we do not remember to have succeeded more than twice. Once it happened to us to do so in the Isle of Wight, on the high ground between Newport and Cowes. Here the accident of one of the young brood just shifting its position striking our eye, brought the object before us, and with much quickness we put our hat over it, and next our hand. It was moderately covered with fleecy matter, and exhibited the germ of feathers starting out, and appeared to us four or five days old. The dartings of the parents at this time were rapid, and in full accordance with their excitement. They came so near, that had we been so inclined, our walking-stick might have been successfully employed in taking one or both. We, however, meditated a more pleasing exhibition by setting the little captive at liberty, nor can any language describe the apparent joy of the old birds as the little chick, with almost race-horse speed, tripped away, the darting parents closely pursuing it. About the latter end of July, as Buffon has justly observed, the lapwings have their gatherings, both old and young. They hover in the air. It may be fancy, but it would appear to us that they were drilling their young in the evolutions of that varied and rapid flight, which was to carry them from place to place to meet their change of locality, of food, and of temperature. At one time they search the dry heather of the downs for insects and grubs; a few hours hence they are marching over the moist meadows in pursuit of shell-fish, &c. This diversity of food makes their own flesh of an excellent flavour, and therefore towards the autumn they are exceedingly good eating. We need not tell the lover of delicacies of this kind, how good their eggs are, and how ready a sale they find in any market: neither do we suppose, that we shall fail to excite the further sympathy of the reader towards this beautiful bird, by the mention of his domestic and social habits, of which so many notices are extant. One has been known to cry his pewit at the kitchen door, because the garden air was getting too cool for him; on its being opened he entered, and immediately making his way to the kitchen fire has nestled himself between the cat and dog lying on the hearth.

2707. *Shooting the pewit.* Really, brother sportsman, after all we have said to interest you in favour of these birds, we can, with a very ill grace, advance any hints on the subject of their destruction. But we are, one and all, a medley of contradictions. We follow impulses, often very contradictory ones, and shelter ourselves under the command given us from above, "Take, kill, and eat." As a summer shooting we hardly know a more lively, or amusing one than pulling down the plover. Like most other shooting at birds on the wing, it requires both tact and habit. A dog assists your success, particularly, it is said, in the breeding season; but we have found nearly at all times, that when a dog is present, these birds will fly round and round it, making occasional swoops threatening an attack, at which times a quick gunner may have excellent sport. It is a good bird to eat, as we well knew before a Frenchman told us, *Qui n'a pas mangé de vanneau ne sait pas ce que gibier vaut.* On the wing, we may add, their rapid dartings are such as to keep them secure from the gun of the uninitiated; but there is a pause when they either rise, or otherwise proceed in a direct line. It is at one of these moments the professed plover shooter usually succeeds in his shot. Others do it best, as with their gun they follow their lofty gyrations; and we have more than once succeeded by throwing up a small feathered ball among them, which, attracting their notice, produced a general halt, and offered a favourable opportunity of taking two birds at one shot, or making a second shot with the other barrel. We always made use of No. 4. when engaged in this shooting.

2708. *The golden plover* (*Charadrius Pluvialis* Linn., *fig.* 436.) Colonel Montague thus describes this bird: — "Weight between seven and eight ounces; length ten inches and a half; bill one inch, dusky; irides hazel. The general plumage above is dusky, spotted with greenish yellow, brighter on the back and scapulars, palest on the wing-coverts; sides of the head and neck, and sides of the body, lighter; middle of the belly and vent white; quills dusky, slightly margined at the tips with grey; tail dusky, spotted with yellow and dull white, somewhat in form of bars; legs black." (*Ornithological Dictionary*, p. 213.) This gentleman would lead one to consider this bird and the next, known as the grey or whistling plover, as one and the same. Possibly, however, M. Baillon's account may throw some light on the matter: — "I have," he says, "observed these birds in Piccardy, and assert that their early plumage is grey; that at their first moult, in August and September, they get some feathers of a yellow cast, or which are spotted with that colour; but it is not until after some years that they acquire their fine golden tint." He adds, that the females are hatched entirely grey, and only when old assume a little yellow; and that it is very rare to see their feathers so uniform and beautiful as the males. No longer need the distinction of tints in this species of birds be remarked, since this gentleman has proved, that the varieties result from the difference of age and of sex. "It is," says Colonel Montague, "a common bird, found in most parts of the known world. With us it chiefly inhabits open ground, such as heaths, moors, and downs, and in severe weather the sea-coast; but it repairs to the more uncultivated waste of the northern mountains to breed." "We have," he continues, "seen them in various parts of Scotland on swampy ground, upon the higher hills, and even on the lower lands, covered with heath, amongst which they lay their eggs, four in number, about the size and shape of that of the lapwing: colour, cinereous olive, blotched with dusky. The young run as soon as they are excluded from the egg, and follow the old ones to the moist places in search of worms. At first they are covered with down of a dusky colour, and are incapable of flying for a considerable time. The parent birds are very tenacious of their young, become very bold at this time, will light just before a dog, and run on the ground to entice him from their nest." (P. 213.) Mr. Daniel tells us, "This elegant bird inhabits England the whole year, and breeds on several of our unfrequented mountains; is very common on those of the Isle of Rum, and others of the loftier Hebrides; also on the Grampian, and all the heathy hills of the islands and Highlands of Scotland. Millions are found in the Orkneys, from which they never entirely migrate: they make a whistling noise, and fly in small flocks, and by a skilful imitation of the note, may be enticed within shot. They frequent, in November, meadows and commons; and there was once an instance of a warrener near Bristol killing eleven at one shot. Their flesh is sweet and tender, they are dressed like the woodcock, with their trail, and are excellent eating." (P. 224.) Of the shooting of these birds we have only sufficient experience to state, that they dart and fly about the dog and gunner like the pewit; but, altogether, they are a much wilder bird, and therefore lay themselves less open to the gunner's wiles. Colonel Hawker states, that it was formerly taken with the stalking horse; and we think that it was likely to be much followed, and in various ways, as it is esteemed a delicacy.

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GOLDEN PLOVER.

2709. *The grey plover* (*Tringa Squatarola* Linn., *fig.* 437.). Authors differ about the designation of this bird, both systematic and popular. It is a lapwing with some, and a true sandpiper with others. All however agree, that it is about twelve inches long, and twenty-five broad; weight, seven ounces. "In the roof of its mouth," says Mr. Daniel, "is a double row of spinous appendages, pointing inwards; the head, back, and wing-coverts, are of a dusky brown, edged with greenish ash colour, and some with white; the cheeks and throat white, marked with oblong dusky spots; the belly, thighs, and rump, white; the exterior webs of the quill feathers black; the lower part of the interior webs of the first four white; the tail, which is short, does not project beyond the wing, and is marked with transverse bars of black and white; the legs are of a dirty green; the back toe extremely small. This bird is not found in any great abundance in England; they generally come in small flocks about October, and leave about March. In cold and frosty weather they seek their food on such lands as lie near and adjoining to the sea; in open weather they feed in ploughed fields, especially if sowed; and, having fed, fly to some plash of water to wash their beaks and feet, a habit which is also common to the woodcocks, the lapwings, the curlews, and many other birds which feed on worms: they sleep chiefly in the day in calm weather, passing most of the night in running up and down after the worms which then creep out of the ground. At that time they always make a small cry, as if to keep their flock collected till day-break, when they unite and fly to the coast. They are sometimes taken in nets at their first coming, and the fowler is cautious to set his nets to play with the wind; for instance, when the wind is easterly, that they may play westerly. The north-west is the worst wind to take them; all seafowl fly against the wind whenever they design to rest on the land. The preferable places for setting the nets are in large common fields of green corn, and near to water, for there they are sure to resort to clean their beaks and feet: their flesh is very delicate. In Carolina they are seen in the valleys near the mountains, in great numbers, but seldom alight. They are, as we are told, very common in Siberia, appearing there in autumn in vast flocks coming from the extreme north, where they breed." (*Rural Sports*, vol. iii. p. 225.) This bird seems to be by no means plentiful in England. Mr. Gilpin has, however, noticed them (many years ago) as occasionally abounding in the New Forest. He says he has sometimes seen large flocks of the grey species, and admired them as they encircled the air. In their regular flight they, in some degree, resemble waterfowl, but are not so determined in their course, wheeling about and performing various evolutions; at times they appear scattered and in confusion, until closing together, as if by some word of command, they get again into form. It may be proper to notice that this bird is much more of a coast than either fen or water bird. Grey plover are very numerous in Ireland, to which they appear at a certain time of the year to migrate in countless multitudes. We have ourselves seen them alight in separate flights of two or three hundred, and immediately commence running about in pursuit of worms, &c. Our practice was not to fire at them on the ground, but we usually waited for their own voluntary rising to shift their quarters. In this movement they usually commenced by rising to a considerable height in the air; they next descended, and made numerous gyrations, preparatory to their flight to a distance. It is during these whistlings that the watchful gunner may succeed in bringing several to bag.

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GREY PLOVER.

2710. *The wheatear* (*Motacilla Œnanthe* Linn.). We would not affront the sporting reader with this small bird, did it not revive in our memories many pleasurable rides and walks we have had on the Brighton Downs, when we ransacked the numerous turf-raps made by the shepherds, prepared with our pence to deposit in the room of the ird we took away. "The wheatear," says Colonel Montague, "is a migrative species, ppearing with us the latter end of March; some few, probably, remain the whole year, as ve have now and then seen it in the month of February. It principally frequents rabbit varrens, or such parts as are inclosed with stone walls; makes its nest in a deserted rabbit urrow, or in an old stone quarry; sometimes in a heap of stones, or the hole in a wall; ut most times on the ground. It is composed of moss and dried stalks, and fibres put ogether with wool, and lined also with hair and wool. The eggs are five or six in number, f a uniform pale blue colour, weighing about forty-three grains. The numbers that breed n this country must be very considerable, but they are so dispersed that few are seen at hat season in the same situation. In September they begin to retire, and seem to assemble rom all parts to the Sussex and Dorset Downs, contiguous to the coast, preparatory to their departure. The quantity taken annually about Eastbourn is prodigious; Mr. Pennant says 1840 dozen. These are caught in a singular manner, by placing two turfs on edge, at each end of which a small horse-hair noose is fixed to a stick, which the bird, either in search of food, or to evade a storm of rain, attempts to get under and is caught. Upon inquiry of the shepherds whose trade this is, we have been informed that fifty or sixty of these traps have had a bird in them of a morning, sometimes several mornings together, and then for a day or two scarcely one is to be seen; and yet they are never observed to come in flocks: it is the general opinion that they come in the night." Contrary to the usual custom of birds who sing most freely when not in captivity, the same authority says, "In confinement they are almost continually in song, and sing by night as well as day: they have a very pleasant, variable, and agreeable song, different from all other birds; sometimes it is very loud, and they continue it a great length of time, not continually breaking off like a robin redbreast, and some other birds; but their winter song is best and most varied. A pair that I possess at present were caught in September last, and they began to sing in a few days, and have continued in song ever since; and now, while writing this, the 22d day of December, they are in full song. When in a large cage, or aviary, where there is plenty of room, it is very amusing to see them at play, flying up and down, and spreading open their large wings in a curious manner, dancing and singing at the same time." (*Ornithological Dictionary*, p. 532.) Shooting these birds is not uncommon among Brighton visiters, but we do not envy either their sport or their spirit. Though our limits will hardly permit, our wish to offer to the reader's notice the beautiful lines of Mrs. Charlotte Smith addressed to this bird, as introduced in her *Conversations*, overpowers our reluctance, and forces us to offer so many of them as more particularly allude to the well known process of ensnaring this bird: —

"From that deep sheltered solitude
Where, in some quarry, wild and rude,
Your feathered mother reared her brood,
Why, pilgrim, did you brave
The upland winds, so bleak and keen,
To seek those hills, whose slopes between,
Wide stretched in grey expanse is seen
The ocean's toiling wave?

"Alas! and has not *instinct* said,
That Luxury's toils for you are laid,
And that, by groundless fears betrayed,
You ne'er perhaps may know
Those regions where the embowering vine
Loves round the luscious fig to twine,
And mild the suns of winter shine,
And flowers perennial blow?

"To take you shepherds' boys prepare
The hollow turf, the noose of hair:
Of those weak terrors well aware,
That bid you vainly dread
The shadows floating o'er the downs,
Or murmuring gale that round the stones
Of some old beacon as it moans,
Scarce moves the thistle's head;

"And if a cloud obscures the sun,
With faint and flutt'ring heart you run,
And to the pitfall you should shun
Resort in trembling haste;
While on that dewy cloud so high
The lark (sweet minstrel of the sky)
Sings in the morning's beamy eye,
And bathes his spotted breast."

Subsect. 5. *The Landrail, or Corncrake.*

2711. *The landrail, or corncrake* (*Rallus Crex* Linn., *fig.* 438.), must not be confounded with the waterrail, as is not unfrequently the case; but this latter has a much longer bill, and its plumage, when compared with the landrail, will be seen to be very different. Its habitation also is not the same, for whereas the landrail seeks thick but dry grass fields, the waterrail is found in low sedgy slops, nor do we ever remember to have found one in any other situation. Bewick's description of the landrail makes its length to be "rather more than nine inches; body compressed; bill light brown; eyes hazel; all the feathers on the upper parts of the plumage dark brown, edged with pale rust; both wing-coverts and quills deep chesnut; fore part of the neck and breast pale ash; a streak of the same colour extends over each eye, from the bill to the side of the neck; belly yellowish white; sides, thighs, and vent, marked with faint rusty coloured bars; legs pale flesh red." (*British Water Birds*, p. 130.) The landrail and quail arriving so nearly together, has made the former to be called among country people the king of the quails. Those who are accustomed to its cry can never mistake it; and it is best expressed by a quick sibilation of crek, crek, crek; or, as Mr. Daniel has it, "like a noise made by striking forcibly the teeth of a large comb under the fingers." If the sound be pursued, it is almost instantaneously heard fifty paces off, so rapid are the motions of this bird, the framing of whose lower limbs by the length of the leg, shank, and toe bones, are such as to enable him to make a monstrous stride at each extension of the limb, and also to repeat the action of each step in such rapid succession

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THE LANDRAIL.

that he can commonly elude the pursuit both of the sportsman and his dog. The landrail, according to Mr. Pennant, lays from twelve to twenty eggs, of a dull white. Buffon on the contrary, and Latham likewise, a more correct authority, say the number seldom exceeds twelve, and that they are rather larger than those of the quail, and in colour not unlike those of the missel thrush. The nest itself is usually negligently formed of dry grass, and perhaps a few soft dry leaves, with a little moss intermixed, and the whole bedded in some accidental excavation in the ground; but in some cases which have fallen under our notice, it was in the highest and thickest grass patches. As soon as the young escape from the shell, their limbs, formed on the model of the parent, enable them to follow and keep up with her. We are disposed to think they breed more than once in each season, and other sportsmen have observed the same to us. One instance in our own shooting practice assures us of this, for having dropped a leg of one by a single shot, which we knew to have been lately hatched, we, in a few weeks afterwards, flushed the lame bird again, when we had sufficient proof, both by her manner and by our dog having picked up one of the second brood quite callow, that she had bred a second time. It is rather a matter of curiosity to see how very eagerly a pointer, or spaniel, follows the scent of the landrail, and how common it is for his eagerness to carry him beyond the spot, when he stops, looks bewildered, and once more he hunts and rehunts his ground over, but with no better success. The rail had squatted, the dog had overshot her, which she taking advantage of, took another run, and having reached within a few yards of the termination of the inclosure, she springs up, flies heavily, and either settles on the hedge, or just on the other side, from whence she commences her renewed pace, and on her next stoppage her *crek, crek,* is again heard, and her brood, with their black downy covering, hurry onwards, with a speed not greatly inferior to that of the mother, to join her. "Corncrakes," says Mr. Daniel in his *Rural Sports*, "are plentiful in some parts of these realms; in Ireland particularly so, where it is probable they pass the winter. They are in the greatest plenty in the Isle of Anglesea, where they appear about the third week in April, supposed to come there from Ireland; at their first arrival it is common to shoot seven or eight in a morning. They abound in the county of Caithness in Scotland, and are found in most of the Hebrides and the Orkneys. Few places in England are destitute of them in summer; but they are nowhere what may be called common. It is observed, wherever quails are in plenty, the crake abounds. On their first appearance in England, they are so lean as to weigh less than six ounces, but, before their departure, have been known to exceed eight; and are so fat, that this same author asserts he has been frequently obliged to wrap his handkerchief round them, to prevent the fat, which exuded from the shotholes like oil, from soiling other birds: their flesh is reckoned an exquisite morsel." (Vol. iii. p. 187.)

2712. *Shooting the landrail.* Talk of sport! we think that we ourselves have been, and should be yet as fond of shooting as any man living, were we not obliged to stay at home all day, ay, and trim the midnight lamp also, to complete the work before us. Yet, with all this attachment to the dog and gun, we do not now think that the tantalising crek, from the finest and largest expanse of meadow that was ever beheld, could tempt us to commit ourselves by entering it. No, no! we have seen our staunchest pointer *dumbfoundered* in the pursuit; and although not a little anxious to reward both the dog and ourselves by dropping this vagrant, who, unseen, has at one moment called to us most lustily in the middle of a field, which we and our dogs were hunting carefully, and the next, or as the Irishman would say, in no time or less, was heard crek, creking, far away in the next. We will, therefore, have no more of him; but should you, brother sportsman, be tempted to go out purposely for landrail shooting, take two steady spaniels that will range close yet thoroughly, in preference to a pointer, whom it is vexing to see cautiously pursuing the fleeting scent and tracking steps more nimble than his own even. We cannot close our account without noticing the following curious fact, mentioned in the *Library of Entertaining Knowledge*, on the Faculty of Birds, — that a young corncrake, kept by a Mr. Jervis, showed so extreme an attachment to water, that when it was placed before it, it would swim, dive to the bottom, and play about in it with the greatest apparent satisfaction, and with as much activity as if it had never been used to any other element. This bird is said to lay twelve or fourteen eggs, a little less than those of the partridge, but longer; their colour is that of a muddy white. Where they migrate to, does not seem to be precisely known, but it is supposed they go southward, probably into Africa. In our former remarks on the migration of birds, if we mistake not, we noticed that of the landrail and quail. Pennant finds no difficulty in accounting for the motive of migrations: a defect of food at certain seasons, or the want of a secure asylum from the persecutions of man during the time of courtship, incubation, and nutrition. He considers that "most of the birds which leave us in spring to spend the summer elsewhere have been traced to Lapland, a country of lakes, rivers, swamps, and Alps covered with thick and gloomy forests that afford shelter during summer to the fowls, which in winter disperse over the greater part of Europe. In these arctic regions, in consequence of the thickness of the woods, the ground remains soft and penetrable to the woodcocks, and other slender billed fowl." (P. 278.)

Subsect. 6. *The Waterrail.*

2713. *The waterrail* (*Rallus Aquaticus* Linn.). This bird and the last are sometimes cor founded with each other, but our figure (439.), we think, will sufficiently indicate that the are as distinct birds in external appearance they are in their habits and localisation. N sportsman, we presume, would fall into suc an error as this, which would present him or day a bird quite at home in the high grass an upland district, and the next day to b found only in a low watery locality, wher rivulets, marshes, and ponds abound, or in th sedges and reeds, in which only the waterra delights to dwell. The waterrail is not alto gether so invisible as the landrail; he may b seen if close hunted, and though sufficientl disposed to hide himself, and almost as un willing to get up as his namesake, yet, with good water spaniel, may be quested to hi destruction. We once hunted a waterrail i a marshy situation, he took a flight some twenty or thirty yards, and dropped among the sedge at the edge of a piece of still water. Our eyes at that time were good, and we being then very much engaged in this wild shooting, it was difficult for a bird not totally invisible to escape them. Our dog was ahead, feathering actively near where we marked him down. We advanced cautiously, expecting that he would be flushed immediately. Our dog looked us attentively in the face, and next as attentively to the bank on which we marked the bird, and as we never lost sight of the spot he dropped on, and the keen nosed spaniel indicated the same, we examined every part around, likely and unlikely. At last, by chance, we discovered the head of the wary bird at the edge of the brook; no other part of the body being visible, we in vain endeavoured to point him out to the spaniel, for we were anxious he should see him, that we might observe the mutual actions of the pursuer and the pursued: having however failed in this, we fired low, and the watchful dog caught sight of the bird as his death struggles threw him above the surface, and within a minute he was in our hand. We mention this, not as any thing extraordinary, but merely as a hint to the junior sportsman, that he must keep a very sharp look-out, particularly when a rail is concerned, Nature, it may be observed, gives much caution and cunning wherever the means of resistance in her creatures are sparingly supplied.

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WATERRAIL.

2714. *The shooting of the waterrail* is sought after by such as wish to be continually excited by hope. A pottering shooter may make one last him out a day; nay, with good management, he may hunt him a week. Mr. Johnson tells us, that the flesh of this bird is of a delicious flavour: we think that of the landrail far superior; however, a fat waterrail is preferable to a poor landrail. This bird is found with us the whole year: it builds a rude nest composed of sedge and coarse grass, and lays five or six white eggs (Bechstein says, eight to twelve), rather larger than those of the blackbird. The lesser dabchick and little diver, noted by Bewick, will also sometimes attract the attention of the sportsman in his rambles. Two or three varieties of grebes likewise present themselves in our larger waters, which rank under the name of meres, all of which afford sport for the shooter during the barren seasons of professed game shooting. Of the dab or dabchick we remark, that the shooting of it sometimes engages the individuals of a pretty considerable party, who bet against each other as to the capability of firing so quick as that the shot shall reach the bird before it shall dive, which is done almost with the rapidity of lightning. Where a very ready shooter is concerned, the chances are in his favour; if otherwise, two to one against him. Colonel Montague says of this bird, " It seldom takes wing, but dives on the least alarm, and will remain under water amongst the reeds or other aquatic plants with only its bill above for respiration. Its nest is formed, like the rest of the grebes, of a prodigious quantity of flags or other water plants, but is generally fastened to the reeds or flags, in order to prevent its being carried away by the current. Temminck gives a similar statement. The eggs are five or six in number, of a dirty white; the shape oblong, and less than those of a pigeon. These are generally covered with weeds, so that when the bird quits her nest suddenly they are not exposed to view. Notwithstanding this precaution they are frequently destroyed by the water rat. In large rivers these birds are frequently devoured by pike and trout while they are diving in pursuit of small fish. We once took from the stomach of the last a water rat weighing fifteen ounces, the trout weighed only four pounds. After the breeding season the bird is frequently seen in some of our inlets of the sea, where it is said to feed on shrimps." (*Ornithological Dictionary*, p. 127.) The waterrail will eat every variety of aquatic insects. We have detected them in the crop of this bird mixed with the tender tops of aquatic plants.

Subsect. 7. *The Moorhen.*

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THE MOORHEN.

2715. *The gallinule, or moorhen* (*Furtica Chloropus* Linn., *fig.* 440.). If any advanced sportsman, like ourselves, will look back to his younger days, and remember with what delight he set out, by previous concert, with one or two other juveniles to hunt and shoot the moorhen, although he may now wisely avoid the cold and the loss of time which would be incurred in such a profitless sport, yet we much doubt, whether he will not dwell with some complacency on the retrospect of this youthful shooting, when himself and companions, in despite of their quick sight, ready aim, and well charged guns, had, after the first successful shot or two, found the birds too many for them by instantly diving at the flash of the pan, or perhaps even on hearing the nick of the hammer; for in the degree in which animals are exposed to danger, so in the same degree they are rendered both wary and expert in avoiding it. Thus it is, as we have already hinted, that on a pond over which a gun is seldom or ever fired, these birds may for some little time fall a sacrifice to the shooter, but becoming a little used to the common enemy, they dive and avoid the shot. In such case however, as with the waterrail last described, by firing a little under them their dip is often circumvented. Nor is man alone the enemy of this harmless sailor on the ponds; we say harmless with confidence, for he is no destroyer of fish; he lives on insects, aquatic plants, and seeds only. With little cunning and much confidence, he is however a most expert swimmer and diver, and for running he has few equals. We are not sure but that we would accept moderate odds between him and the corncrake for running. Whoever has watched his motions must have been struck likewise with the quick elevation of his tail in jerks as a continual habit. The nest of the moorhen is an artless one, and, like those of some other aquatic birds, it may be frequently found within the bend of a willow stump, &c. &c. On one occasion we had an opportunity of remarking an instance of great forethought in a moorhen that resided in a large mill-pond that was alternately high and low, as the mill was or was not at work. The *instinct* of the animal (who would be self-sufficient enough to say it was not the *rationality?*) devised the means of building a floating nest by intertwining its materials between two briar stems, which, being lodged on the water, were subject to rising and falling as the water became high or low. Here, by looking over the sides of the bank to fish up a night line we had laid a few days before, we discovered the nest, and also the parent bird *sitting hard.* We instantly withdrew, and left the night line to its fate; but as we frequented this pond much, but never with a gun, it is more than probable that the bird, accustomed to see us, but not as an enemy, would have retained her seat; as even the most shy birds will do after they have become fully aware that no harm is intended them. Walk quickly, and in a direct line, past a bird's nest, and although the bird be of a very shy kind, and though you almost touch the nest with some part of your dress, yet it is seldom that it will be flushed by your passage. The moorhen's nest usually contains from seven to ten eggs of a light brown colour with rust coloured spots. The young, like those of the two last described birds, are not naked when hatched, but on the contrary are covered with a dark down; they can also exhibit considerable agility, and run or swim with the mother. We would hint to the encouragers of the moorhen, that the young have numerous and potent enemies. Pike swallow them whenever they can reach them; and as coots are also very often found in large ponds, small lakes, &c. &c. the young moorhens are sure to find in them a dexterous and inveterate foe: if therefore you wish to preserve the moorhens, kill off the coots. The moorhen is so well known that we need not give any further ornithological description of it, but refer the inquirer to Bewick, Daniel, or any other acknowledged authority.

Subsect. 8. *The Coot.*

2716. *The coot* (*Fulica atra* Linn.) is also frequently called the bald coot, from a bald white mark in the forehead, but which during the breeding season becomes of a deep red, being then turgescent with blood. Its manners, at no time very mild or conciliating, then become pugnacious in the extreme, to the utter disquietude of every other inhabitant of the pond, and this is sometimes carried to such a length that the coots are forced to be shot off to preserve peace. At all times they are very destructive to the fry and spawn of fish, and we believe are only tolerated to give an appearance of life to a large pond; nor are they much followed by any but youths and such persons as in their rambles carry a light gun instead of a walkingstick; which custom we would recommend to the elderly sportsmen of bygone days, in whom the gunning ardour, though damped by approaching infirmity, is not quite extinguished. Such an one, although too much advanced in life to toil over the moors, or even to beat the stubbles day after day, yet, being armed with a light single gun, or, if preferred, with Day's walkingstick gun, can march out in the remembrance of early days, and perchance meet an opportunity of bringing to bag or pocket some one or more of these subordinates of the feathered race, without breach of the game laws, or fear of prosecution for shooting without a licence. If therefore any of our readers of high sporting caste should think we lose our own caste by expending our pen, paper, and cogitation, on these humble subjects, be it known our reasons for so doing will bear us harmless. The bald coot, like the moorhen, is a very common bird throughout England, and a permanent resident. Of all the aquatic birds he confines himself most to the water, being seldom if ever seen on land. Many of them are found to abide so steadily by their birthplace, even though it may be a small pond, as never to leave it: others of them, however, will pay a visit to the sea in winter. The coot swims well, and also dives equally well; and when by necessity he is forced on land, he exhibits rather a waddle than a walk. He is of so solitary a turn that he skulks all day among the sedges, and only comes boldly forth at night, or on a very lowering cloudy day. Indeed, so shy is he, that it is usually in vain to attempt to flush him without a very determined and close-hunting spaniel, and one who will take the water like an otter. Thus provided, interesting sport may be often had in coot hunting, the opposed parties being so well matched. It is, however, then more than an even chance that the coot escapes by diving and hiding himself in the mud, or more frequently, like the waterrail, to sink at the side of the sedge, with its head only above water, by which respiration being kept up, it can remain concealed until his pursuers are tired of searching for it. A still more methodical mode of pursuing the coot and moorhen may be practised on large rivers, as in the Thames for instance, where along its course so many islands and willow beds present themselves, in which not only the coot and moorhen are to be met, but also flappers; and sometimes the parent ducks, waterrail, sandpipers, and dabchicks, are also almost sure to be present. Two persons besides the boatman are requisite, and one very steady and active water dog used to the sport must be taken. Thus armed, beat all the river from Brentford to Wallingford, or as much of it as your time will allow; and the scenery and the little adventures that will be likely to fall in the way can hardly fail to make it a most delightful trip. We have ourselves gone over every inch of the ground we point out, and always were gratified with our sport. Colonel Montague says that the Isle of Sheppy is remarked for harbouring coots, which are in great abundance there; vast flocks of them also are seen in Southampton river. Mr. Daniel says, "The female makes her nest in the rushes, surrounded by the water, with a large quantity of coarse dried weeds well matted together, and lines it with soft fine grass: she lays from twelve to fifteen (some say eighteen or twenty) eggs, about the size of a pullet's, and of a pale brownish white colour speckled with numerous small dark spots, which at the thicker end seem as if they had run into each other, and formed bigger blotches. So soon as the young quit the shell, they plunge into the water, dive, and swim with much ease, but they still gather together about the mother, take shelter under her wings, and do not forsake her for some time. From the circumstance of coots laying so numerously, and hatching twice in a season, they might be expected to be more abundant; but they are at first covered with a sooty coloured down, and are of a shapeless appearance; and while in this state, and before they have learned by experience to shun their foes, the moor buzzard, kite, and others of the hawk tribe, make dreadful havoc among them: the pike is also the indiscriminate devourer of the young of all these water birds." (*Rural Sports*, vol. iii. p. 241.) He likewise enlightens us on a point we believe not generally known, that the goodness of this bird is what many persons are not acquainted with. "The young ones are extremely good put into pies, or boiled with onions like rabbits; and in the winter when fat, and they haunt the sea-shore, they are of as high a flavour and equally as pleasant to the taste as a widgeon." (*Ibid.* p. 243.) Colonel Hawker also appears to think highly of the coot, both as an edible and as a sporting favourite, these birds being in great requisition when they arrive for the winter on the coast, from the immense numbers that may be killed at a shot, as they roost on the mud banks. We are likewise favoured by the colonel with a recipe for the cleaning of them, so as to render them not merely eatable, but also a wholesome food. After being picked of their feathers, cleaned from their black down by means of powdered resin and boiling water, and being further soaked all night in cold water, they look as delicate as a chicken, and eat well. Without this care, however, they are rank and fishy both in taste and smell. The colonel likewise recommends the skinning of them, and then twenty-four hours' soaking in water, when they may be baked either in a pudding or pie, or served soup fashion. A very good practical remark of this writer should not be lost on the coot shooter, which is, to shoot well forward, as one shot before, under the wing, is better than ten in the hinder parts. Reader, *experto crede.*

2717. *There is also a greater coot*, the *Fulica aterrima*, but it is not frequently met with. It differs but little from the former except in size, and having a white forehead and red garters, as Bewick expresses it. Foreigners, we are told, eat them on *maigre* days; consesequently their fishy taste will reconcile us to their scarcity.

Subsect. 9. *The Curlew.*

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The Curlew.

2718. *The curlew* (*Scolopax Aquata* Linn., *fig.* 441.) is considered by Linnæus as a species of snipe. With ourselves he is a very favourite object of diversion to follow; he is an excellent edible when taken, but much caution is required in the pursuit; nevertheless, we hardly know any bird we have pursued with so much perseverance on many parts of the English, Irish, and Welsh coasts, on which it abounds in the winter. In summer, also, it may be very commonly met with, but differently localised: in that season it frequents the mountains and moors. When we sojourned at Hexham, the extensive moorland tract between that town and Alston in Cumberland, was a very common harbour for them, but they were so shy that it required much caution to get near them. There are either several kinds of them, or otherwise they differ much in size from each other; we have ourselves shot them of the weight of twenty-six ounces, and we have also killed a few which reached to thirty-six ounces, and very many of thirty-three and thirty-four ounces. The birds which thus presented such different weights, did not vary much as regarded their colours or markings, or we should have carefully noticed them as distinct varieties. The description Montague gives of the curlew is: — "Bill from six to seven inches long, dusky black, irides hazel; the head, neck, scapulars, and coverts of the wings, pale brown, each feather black in the middle, and lightest at the edges; breast and belly white, marked with oblong black spots; lower part of the back white, with a few dusky spots; the tail and its upper coverts barred with yellowish white and black; quills black, spotted on the inner webs with white; and the legs are long, of a bluish grey colour. Male and female much alike." (*Ornithological Dictionary*, p. 124.) The curlew makes her nest of any of the soft materials which surround her locality, as heath grass, &c. She lays from three to five eggs, of an olive tint spotted with brown. This bird is, of olden date, well prized; and we can bear testimony to the truth of the old proverb, that

"A curlew, be she white, or be she black,
She carries twelve pence on her back;"

for we consider the flesh of the curlew as excellent eating, but more particularly so during their retreat to the land districts. In the winter some of them, but not all even then, are apt to taste fishy from their shore feeding.

2719. *The shooting of curlew.* These birds are shy, and require much art and caution in the approach towards them. When we were engaged in curlew shooting, which we have followed both in summer and in winter, we were much guided by circumstances. In summer, when they retreat toward the moors, we found that they took a pattern from the plover, and flew aloft around us; and although they did it much more cautiously, yet we seldom failed to get a shot; and as we used a single gun of length and substance purposely for this shooting, we frequently succeeded in bringing them to bag. We have also met with very good curlew shooting on the sea-coast, particularly in the vicinity of Drogheda in Ireland, about the spring time. One season we were very successful on the hills and heaths in Wales, where also we met all the varieties which leave the water to breed on the moors. A large curlew, we would observe, will take a very severe rap to bring him down, and therefore we seldom fired at one with less shot than No. 3.; in boisterous weather we used No. 2. They are suspicious birds, and consequently wary of the gun; it is therefore prudent to make a moderate *détour* in your approach toward them, and also to call your dog in to your heels if you have one; we often however found, that we did our business in this line better without than with a dog. In firing, take the bird as it recedes from you in its circular or oblique course; for although they are not as thickly clad as the duck, they are most effectually secured when struck *with* the feathers than *against* them. There is also a migratory bird known as the *stone curlew*, that is seen amongst us in small numbers in the spring. It breeds in the fallows, and the young, like the partridge, run nimbly immediately they leave the nest.

2720. *Of punt and shore shooting of curlews,* Colonel Hawker says truly, that in autumn they congregate in vast numbers on the sea-coast, roosting in some two or three favourite spots. When these are known, "send a person towards the others with a lantern, on seeing which they will immediately take wing, and may be heard repairing to their next evening haunt, with cries which echo through the air for miles." They may also be approached, he tells us, when on shore, by means of a punt or canoe, particularly in a white frost; and when the tide is up either just after or before daybreak. They are very cautious of alighting until a very strict scrutiny has been made; consequently every precaution should be taken by the sportsmen to conceal themselves from them, by stooping or lying down in the punt, or by keeping close alongside, or, as a sailor would say, "hugging the land;" by which means a raking fire from each gunner may be got, by one party taking a ground shot, and the other taking them as they rise. We cannot quite agree with the colonel, that the curlew, even when he locates near the shore, is so fishy as to be scarcely eatable. We have eaten this bird at every time of the year, and pursued him with avidity in many counties, and we might say countries also; yet he was always to us toothsome food. He is not so good, certainly, when he lives wholly on the sea-shore; but we did not despise him even then. Nothing can be more practically true than that a second gun in reserve is useful in curlew shooting, because, as Colonel Hawker remarks, if one is winged his cries will generally collect the flock around him, some of which will pitch down almost upon him, and offer the shooter some excellent shots. The curlew, according to him, is a great enemy of the punt shooters of the Hampshire coasts, by its springing up from the edges of the creeks, and thus alarming the widgeon settled on the mud.

2721. *The whimbril* is common on the Devonshire coast, and is there called the hilly curlew. It breeds in small numbers on the north coast of Sutherland, and makes its nest in a heather hillock. The nest is merely a small hollow scraped out, in which are deposited four eggs. Colonel Hawker notices Titterals, Langston Harbour, and Romney Marsh, as yielding abundance of them. They were also not infrequent on the Essex coast.

Subsect. 10. *Seafowl Shooting.*

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SEAFOWL SHOOTING.

2722. *Seafowl shooting* (*fig.* 442.) may be nominally considered as distinct from wildfowl shooting, not only because the former objects are seldom to be met with inland, but also because they are pursued principally in sport, as little profit is to be derived from the greater number of them, they being almost wholly piscivorous; consequently none but those very hard pressed for food can subsist on them. In treating of them, brother sportsman, we are glad to be enabled to relieve you for a little time from the tedium of wading through so much as already has appeared on the land and fenbirds. Fearing, therefore, that our long detail on them might somewhat tire you, we have thus varied our subject, thereby to show our faith in the old saw, that "change of work is play;" and we are convinced that this love of variety, under proper bounds, was implanted in us for the purpose of increasing our observation, and stimulating us both to renewed mental inquiry and to bodily exertion. Hence it is that change and variety are so eagerly sought for by our children, as soon as their faculties begin to dawn. Were they content with one object, they would know little beyond that object; but curiosity being implanted in their mind, they vary their inquiries, and ultimately become informed on every subject. It was only a little time since that the child of a friend of ours, a thorough sportsman, was presented by his father with a rocking-horse, thereby attesting his good opinion of the soundness of the command, "Train up," &c. Our little friend was so delighted with his present that he, for a few days, might be said almost to live on his steed; but, true to nature, and in a little time becoming tired, variety was sought for, and his father, in a frolic, again placed him on the horse, but facing the tail of the figure instead of the head. Here was novelty, which was all the child wanted, and it had its full effect on him; this horse, he said, went higher and faster than the other; and although he could not fall over his head, he was nearly canted over his tail; but this was a trifle in his estimation, as he had somewhat of a new object to amuse him.

This, however, is but a prelude to the purport we are intent on, that of exemplifying the inherent love of novelty in sporting, which shows itself in some persons, and is then usually carried to an extent, that however their circumstances may allow them to partake of all the various pleasures around them, they are not satisfied unless they can also witness the sportings which are pursued in a manner opposite to their own, on animals that are new to them, and in localities far distant from the scenes of their former chasings. Such was the case with the father of the child who bestrode the rocking-horse. He was in the full possession of every means of enjoying hunting, fishing, and shooting, which latter he most affected, and this was consequently what he was most likely to *run amuck* on. Some friends of his having lately returned from a shooting excursion to St. Kilda's inclement isle, and, travellers like, having probably painted somewhat imaginary scenes of their darings and their doings, awakened in his breast an uncontrolable desire to do the same, and, instead of mounting a rocking-horse like his son, he mounted the deck of a small sailing vessel, which he furnished with all the munitions for a warfare on the seals, the cormorants, swans, geese, gulls, and, in fact, on all the vast varieties of seafowl which inhabited these almost hyperborean regions. In vain his amiable wife represented to him the dangers of such a trip; in vain did the juvenile horseman tell his papa that he should want him to new shoe his nag to make him go faster; in vain did his friends, of whom he had many, endeavour to put before him the perspective of the delights which awaited him, of having his shooting pony brought to the door to take him to his well stocked manor, this year glutted with game, his new gun untried, his dogs the envy of the country, and his assistants ready and on the alert to aid in making his sportings efficient. Alas! he also had mounted the rocking-horse, and was irresistibly beset with the mania of *seafowl shooting* abroad, instead of grouse, partridge, and pheasant shooting at home, garnished as the months advanced with the pursuit of woodcocks, snipes, &c. St. Kilda and seafowl shooting had taken a firm hold of his imagination. He smiled at the accounts presented to him of this isolated spot, the inhabitants of which were cut off, if not from the sympathies of life, at least from all safe communication, at certain periods, with the living beings on the main land, and its inhabitants generally.

This Scottish island, it is true, is celebrated for the vast number and variety of seafowls, which congregate on and around it, and perch on its rocky heights, the numbers being such as to yield endless sport to the gunner, who particularly admires this variety of shooting. Nevertheless, to leave such a home, and such means of enjoying both sporting and social delights, as we have drawn a faithful portrait of, is indeed, to use a vulgar saying, "paying too dear for a whistle." Not but we must confess, were our age different, and had we not the social ties which at present bind us to home, we should be well inclined to risk every danger to witness the scenes of enterprise between offending and defending birds, even in Scotland and the Scottish Isles. The perpetual conflicts which are taking place between the raven and the eagle in the Hebrides, are frequently noted by naturalists and travellers as interesting in the extreme, as well as the battles between the squa-gull and eagle, which are always fierce. Our friend was eloquent on all these subjects, but, as often happens, that which particularly interests one person will not equally interest another.

2723. *The stormy petrel* (*Procellaria Pelagica* Linn.) was an object that seemed to have commanded much of his attention, and he never tired when relating the pains he took to discover the nests of these birds, which abound here and breed in the fissures of the tremendous rocks that overhang the sea around; and, certain it is, that the stormy petrel (*fig.* 443.) always engages much of the attention of travellers and naturalists from its striking peculiarities of form and manner. When we inquired after the success he met with, in attempting to shoot them, he candidly told us he killed very few, and all shooters agree that it is one of the most difficult birds to hit. It is also the least web footed bird known, being about the size of the swallow, and is

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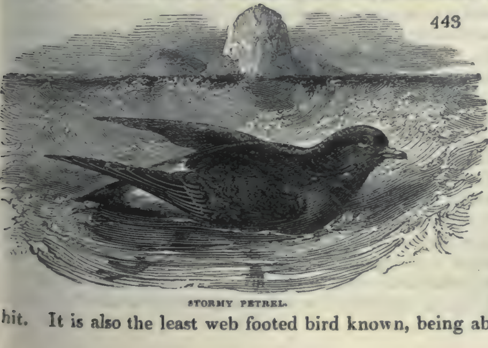

STORMY PETREL.

occasionally seen congregating in numbers under the wake of a ship; and when such is the case, however calm the weather may then be, it is a certain harbinger of a forthcoming storm. It is also a curious circumstance in the history of these birds, that they are only heard at night, when their cry is shrill, continuous, and piercing; occasionally only one has been seen and shot on land. Of the interest which this bird excites, the following extract from Mr. Loudon's *Magazine of Natural History* is an example: — "As the stormy petrel is scarcely ever to be seen near the land except in very boisterous weather, one of the natives, for a trifling remuneration, agreed to traverse the face of this rock, and take me some from out its fissures: accordingly, accoutred with a rope of hemp and hogs' bristles, coiled over his shoulders, he proceeded to the cliff. Having made one end fast by means of a stake, he threw the coil over the face of the rock, and gradually lowered himself down, but with the utmost caution and circumspection, carefully pressing his foot hard upon the narrow ridges before he at all loosened his firm grasp of the rope which he never altogether abandoned. I had previously thrown myself upon my chest to enable me to have a better view of him by looking over the cliff, and, certainly, to see the dexterity and bravery with which he threw himself from one aperture to another was truly grand. The tumbling roar of the Atlantic was foaming many hundreds of feet beneath, and dashing its curling cream-like surge against the dark base of the cliff in sheets of the most beautiful white, while the herring and black backed gulls alternately sweeping past him, so as to be almost in reach of his arm, threw a wildness into the scene by the discordant scream of the former, and the laughing oft-repeated bark of the latter. This, however, he appeared entirely to disregard, and continuing his search, returned in about half an hour with seven or eight of the stormy petrel tied up in an old stocking and a pair of the Manx puffins, together with their eggs. The birds, he told me, he had no difficulty in capturing. The eggs of the stormy petrel are surprisingly large, considering the diminutive size of the bird, being as large as those of the thrush. The female lays two eggs of a dirty or dingy white, encircled at the larger end by a ring of fine rust coloured freckles. The birds merely collect a few pieces of dried grass, with a feather or two, barely sufficient to prevent the eggs from rolling or moving on the rock. That of the Manx puffin (the bird laying but one) is of a very round shape, and uniformly white, very much resembling that of a hen. These birds very often excavate a small hole, if the stratum is soft enough to admit of it, like the common puffin (*Alca Arctica* Linn.) by means of their small sharp claws, on the ground of which they deposit their single eggs." (Loudon's *Mag. Nat. Hist.* vol. iii. p. 325.)

2724. *Arrived at St. Kilda*, our voyager, as yet undismayed with his tempestuous tossings as he visited other of the Scottish islands and the main shores, but on the contrary, being rather more keenly bent on further exploration, he landed, or rather stranded, on this spot. Elevated far above the surrounding waters, its rocky sides shoot upwards, presenting vast fissures which the industry of the natives have converted into rude apologies for roads. The summit of the table land is occupied by the natives, who are equally fishermen, fowlers, and agriculturists. One small village contains all the inhabitants of the island. The soil of their island is thin, gravelly, and poor, in its natural state; but it has been fertilised by the industry of the inhabitants. The dwellings of the natives are built of masses of stone huddled together, as it is said, without mortar or any intervening cement, and are flat roofed and very little elevated, the better to bear up against the tempests which continually rage there. An account we have received states, that the male inhabitants are divided into fowlers, fishermen, and husbandmen; but we believe that most of them engage in these several occupations as long as their strength enables them to do so. They rear sheep successfully, and these with the wildfowl, which they take in vast numbers, supply their wants.

2725. *The fowlers of St. Kilda* cannot fail to interest every reader of their adventurous employ. The face of the shores of their island in all parts are precipitous and lofty in their turn; in some it is said the rocks are almost perpendicular, and little less than a mile in height. It is in the fissures and cavities of these that an almost endless variety of seafowls retire both to rest and to breed. The waves beneath that continually beat at the base, often wear the shore into an impending boldness, so that it seems to jut out over the water, while the raging of the sea makes the place inaccessible from below. These are the places to which seafowl chiefly resort for the purpose of propagation, and where indeed they might bring up their young in undisturbed security were it not for the arts and enterprise of the fowler. The face of the shore in some parts offers to the view a wall of massive stone ten times higher than our tallest steeples. The rocks of St. Kilda, for instance, are nearly a mile in height. What must be our awe on approaching the edge of that impending height, and to look down on the unfathomable vacuity below, to ponder on the terrors of falling to the bottom, where the waves that swell like mountains are scarcely seen to curl on the surface, and the roar of an ocean a thousand leagues broad appears softer than the murmur of a brook. It is in these formidable and terrific mansions that myriads of sea fowls are for ever seen sporting, flying in security down the depth half a mile below the feet of the spectator. To these frightful precipices the cormorant, the garnet, the tarrock, the terne, the gull, &c. resort, and seem to remain in undisputed possession, liable however to the depredations of their most formidable enemy, man. Not that this scene of animation is altogether of a peaceable description, as nothing is more common in the breeding season than the most violent contests. One bird which happens to have no nest of its own will frequently dispossess another, and take possession of the place. This often happens among the gull kind; and the poor bird thus dispossessed by her more powerful invader, may be seen sitting near the nest in pensive discontent, while the other appears quite comfortable in her new habitation. Yet this place of pre-eminence is not obtained without difficulty, nor yet maintained in undisturbed security; for the instant the invader goes to snatch a momentary sustenance, the other ventures upon her own, and always hazards another battle before she relinquishes the justness of her claim. The contemplation of a cliff, thus covered with hatching birds, affords a very agreeable entertainment; and as they sit upon the ledges of the rocks one above another, with their white breasts forward, the whole group has not unaptly been compared to an apothecary's shop.

The celebrated Harvey observes, "There is a small island, called the Bass, not more than a mile in circumference. The surface is almost wholly covered during the months of May and June with the nests, the eggs, and the young of these birds. It is scarcely possible to walk without treading on them; the flocks of birds upon the wing are so numerous as to darken the air like a cloud; and their noise is such that one cannot without difficulty be heard by the person next to him. When one looks down upon the sea from the precipice, its whole surface seems covered with an infinite number of birds of different descriptions swimming and pursuing their prey. If in sailing round the island, one surveys its hanging cliffs, in every crag or fissure of the broken rocks may be seen innumerable birds of various sorts and sizes, more than the stars of heaven when viewed in a serene night. If they are viewed at a distance, either receding or in the approach to the island, they seem like one vast swarm of bees." They are not less frequent upon the rocks of St. Kilda.

2726. *The inhabitants of this island* consume annually nearly twenty-three thousand young birds, besides an amazing quantity of their eggs. On these they principally subsist throughout the year; and from the number of these visitants make an estimate of their plenty for the season. They preserve both the eggs and fowls in pyramidal stone buildings, covering them with turf ashes to prevent the evaporation of their moisture. Such is the principal food of the inhabitants of Feroe and St. Kilda, as well as several other of our little northern islands. Almost all delicacy is a relative thing; and the man who repines at the luxuries of a well served table, starves not for want but from comparison; and it is probable enough that a St. Kilda or Feroe man may be found to exist who surpasses Apicius himself in the pleasures of the table. Indeed, if it be true that the meat most dangerously earned is the sweetest, no man can dine so luxuriously as he, as none ventures so hardily in the pursuit of a dinner. It cannot be expressed with what pains and danger these men take the birds in those high steep cliffs. But there are men apt by nature and fit for the work who take them usually in two ways: they either climb from below into these high promontories that are as steep as a wall, or they let themselves down with a rope from above. When they climb from below, they have a pole five or six yards long, with an iron hook at the end, which they that are underneath fasten to the man's girdle, helping him up thus to the highest place where he can get a footing; afterwards they also help up another man; and thus several climb up as high as they possibly can; and, where they find difficulty, they assist one another by thrusting with their poles. When they arrive at the places where the birds build, they then go about as well as they can in those dangerous spots; the one holding the rope at one end and fixing himself to the rock, the other going at the other end from place to place. If he should happen to fall, the other that stands fast holds him and helps him up again; but if he passes safely, he likewise fastens himself till his companion has also passed the dangerous place. Thus they go about the cliffs after their game almost as they please. A year, however, seldom passes that some of these daring adventurers do not lose their lives. But as some rocks are inaccessible from below, they descend from the top by a rope to those places where their game is found in abundance. The rope is from eighty to one hundred yards in length, the end of which the fowler fastens round his waist and between his legs, so that he can sit thereon holding the fowling staff in his hand. He is thus let down by several of his companions, who lay a large piece of wood on the brink of the rock, upon which the rope runs, and which prevents its being rubbed to pieces by the hard and rough edges of the stone. They have besides another small line, which is fastened to the fowler's body, and which he pulls, in order to let them know how they should let down the great rope, either higher or lower, or to hold still, that he may remain in the place which he has reached. This smaller rope is also used, from time to time, to convey the game to those on the top of the precipice. The fowling parties of St. Kilda generally consist of four persons, each of whom must have a rope of the length mentioned above, or perhaps longer: it is made of a strong cow hide, salted for the purpose, and cut circularly into three thongs of equal length; these thongs being closely twisted together form a threefold cord able to sustain a vast weight, and durable enough to last two generations; to prevent its receiving injury, it is covered with sheep skins dressed in the same manner.

2727. *This rope is the most valuable piece of furniture* of which a St. Kildan can be possessed; it makes the first article in the testament of a father; and if it fall to a daughter's share, she is esteemed one of the best matches in the island. By the help of these ropes they descend the most frightful precipices. Mr. Macauley gives an instance of the dexterity of a St. Kilda man, of which he was an eyewitness. "One of them fixed himself to a craggy shelf; his companion descended about sixty feet below, and having darted himself away from the face of a most frightful rock hanging over the sea, began to play his gambols: he swung merrily, and laughed very heartily; and after some time, having afforded all the entertainment he could, he returned in triumph, full of his own merit, with a large string of birds about his neck, and a number of eggs in his bosom. When a fowler is under the necessity of descending the rocks without any assistance from his fellows, he drives a post sloping into the earth, and by fastening the rope to it, lets himself down thereby, without the help of any person whatever. The principal use of the staff used in the descent is to shoot the fowler from one place to another. It sometimes happens that a sort of cavern is formed in the rock, beneath the ceilings of which numbers of birds are frequently taken. A St. Kilda fowler can shoot himself into one of these places, and there take firm footing: on these occasions he frequently unfastens the rope from his body, ties it to a crag that it may not slip from him, and then goes about in the rock, taking what fowls he can meet with." (*Annals of Sporting*, No. xx. p. 97.)

But independent of this taking of fowl for their food, these islanders reap much benefit also by attending adventurous gunners who visit these regions to see the sun, as it were, darkened with the feathered multitude, who mock the gunner, and in derision dart down within a few feet of his head; we have even heard of their rapping it with both wings and beak. Here twenty guns may find work in plenty. Each sportsman, however, should have duplicates of them; otherwise continued firing will endanger both gun and gunner. These incessant firings can hardly fail of making a ready sporter of the most timid person. No home shooting can trepidate one who has shot in these scenes. We have not, however, frequently heard of such a visit being repeated, although the seafowl, in all their varieties, are not the only objects of interest seen here. The whale frequently sports his vast mass in the water, and his *blowing* may be heard from the shore even. The seal also may be observed basking on a rock, or he may be seen better employed in breaking up the carcass of a huge cod, &c. Where Nature does little, more room is left for manual labour, and nothing tends more to beget such exertions than the certainty that the common wants of nature can only be supplied thereby. Nothing but ample cogitation and much manipulation could have produced a St. Kilda mountain rope. The adventurous seafowl shooter, whose frolic we have related, returned fortunately in safety; but although he spoke in admiration of his late voyage as far as regarded the shooting, he dropped no hint of repeating his visit to St. Kilda's rocky shores. But while we are allowed to marvel at that energetic state of mind which could support an absence from a home where such endearing ties existed, we must yet recollect, were every one to feel these ties of home irresistibly, little would be known of the world at large, Nature's stores would not be ransacked, and our knowledge often would be confined to very limited manifestations. When we think of the vast variety of the feathered race almost unknown, which sport their forms in distant regions, it naturally excites our wish to see these forms; but not *mewed* up, not in the cages of the Zoological Gardens, but in Nature's wilds, and perched on the loftiest summits. The golden eagle, for instance, who would not travel afar to see the male and female busily employed in searching for some suitable crevice at the summit of an inaccessible cliff, into which she deposits sometimes one and sometimes two eggs, of a dirty white with purple spottings? Who would not watch the solicitude of the parents when making their excursions in search of food for the young when these eggs were hatched? See the gyrations of the noble eagle marauding; he has some plot in view: mark that dart, but it was a miss; see another; and now what has he got clutched so fast in his talons? It is some large fowl with which he wings his way to his nest.

"High from the summit of a craggy cliff
Hung o'er the deep, such as amazing frowns
On utmost Kilda's shore, whose lonely race
Resign the setting sun to Indian worlds,
The royal eagle draws his vigorous young.
Strong pounced, and ardent with paternal fire,
Now fit to raise a kingdom of their own,
He drives them from his fort, the towering seat,
For ages of his empire; which in peace,
Unstained he holds, while many a league to sea
He wings his course, and preys in distant isles."
Thomson's Seasons.

2728. *Seafowl,* as understood by seafowl shooters, consist of a great variety of birds, many of which belong to northern climates, but occasionally visit our shores; and a few also of the seafowl of the tropics sometimes pay us a visit, of which the albatross is an example. It is common at the Cape, and is so large as to measure from the tip of one wing to the tip of the other, ten and sometimes eleven feet; in fact, it is as large as a pelican. It preys on the wing, and is generally shot with a rifle, at which sport some Africans are very famous, and occasionally one has been pulled down by our own countrymen on the islands of the Scottish border. This bird is said to be particularly fond of the flying fish, and that it is at the moment when it darts on one of these ere it drops into the water, that the practised sportsmen take the opportunity of firing. It is with the flying fish only a choice of his executioner. He rises from the water to escape the jaws of the devourers below, particularly of the dolphin, who is seen to dart into the air after him. It would be most interesting, with a punt gun well shotted with small bullets, to be able to seize the moment when both dolphin and albatross have reached the flying fish.

2729. *The gull family* (*Larus* Linn.) is a very extensive one, even the albatross is a member of it. Their generic characters are, bill compressed, elongated, pointed, with the upper mandible bent towards the end, and the lower forming underneath a salient angle; their nostrils, placed toward the middle of the bill, are long, narrow, and bored through; their tail is full; their legs rather long; and the thumb short. There are several species, we believe not less than thirty, and all are voracious in the extreme; they build some in the sand, and others in the clefts of rocks. The common gull, or seamew (*Larus Canus* Linn.), is too well known to render any particular description of him necessary, yet he has many estimable qualities. With a strong and straight bill, but bent downwards at the point, it possesses the means of taking a firm hold of its prey. A lesser variety of gull is also observed here, but which does not differ in body or habits from the larger one; each lives on dead as well as living matter, and sailors who have visited the north seas describe the extraordinary number of these birds congregated together, and seen devouring the remains of the carcass of a dead whale. Among the varieties of the gull met with on our seas, we may particularly notice the black and white, the great grey, the black backed, and the silvery, the common seamew, and the kitty-wake. The seafowl shooter may however, without being many leagues from the British shore, meet with twelve or fourteen kinds of gulls; Colonel Hawker says thirteen. Gulls, when shot on shore, are usually brought down by the gunner taking them in any other direction than when they face him. When shot at from the deck of a vessel, there are usually so many hovering around, that it is only requisite to wait a little for any variety of shot you may choose. The gun used should be of the kind recommended for duck shooting generally, its weight when the gunner is on board being not of much consequence; and it must be remembered that these birds will most of them require a full sized gun, full sized shot; and if the heavy shot noted by us when treating of shot, p. 766., be used, so much will the chance of success be increased. From what we have seen of deck or vessel shooting, we have witnessed the best amusement from the gull tribe congregating around; therefore secure one as soon as possible, and having so done, strip off the skin with the feathers from the carcass of the bird, which may be thrown away. His head, wings, and legs, must be preserved entire, and some light matters, as rags, &c. being put within the skin, tack it up, attaching it to twenty or thirty yards of packthread. As the birds fly around the vessel, throw up the stuffed bird towards them, which will induce them to follow it, and come within shot. This ruse will succeed in most cases, and many shots may be obtained by its means. Some deck gunners are singularly adroit also in imitating the call of the birds which fly around the vessel, whether it be a whistle, a scream, or a hiss, &c. Any other sounds also, which are made by the seabirds generally, when well imitated, will draw them within shot of the vessel. The decoy figure we have mentioned, when thrown on the water, and suffered to lie, will often attract them to dart on it; and we have many times obtained a shot by this ruse, both by land and water; it is often likewise very successful when thrown among plovers on land. To detail in this sketch all the varieties of seabirds which may come within the watchful gunner's reach from the deck of a large vessel, or the thwarts of a small one, would carry us to an almost interminable length. One sea trip will do more to initiate the inexperienced than all we can dictate on the subject. We cannot, however, let these scanty remarks on the gull pass without adding thereto their quality of being certain harbingers of bad weather. When no longer able to keep the sea, they naturally repair to the land; and as prevention is preferable to cure, so instinct enabling them to foresee a storm, they come inland of their own accord, without waiting to be forcibly thrown on our shores. Instinct is here preferable to intellectuality, and their own feelings dictate to them the coming storm more than all the instruments of the philosopher. Even old Betty's corns beat her master's barometer by some hours' advance. It is by these internal warnings that the habits of animals present almost a certain indication that storms of wind or water are approaching. When sheep are seen to eat greedily, those who observe their manners daily prognosticate rain; and they are themselves probably laying in provisions purposely for the rainy day. When also they are more than usually alert, and gambol about, it is observed that rain is not far off, but being near at hand, certain indications within lead them thus to expend their stores of excitability, that when the storm does arrive they can content themselves in quiet repose. Ducks and geese are clamorous before rain and wind. Are they calling for more water, which certainly brings before them more worms, &c.? Does the moor game quit the mountains, and visit the stooks below, because rain is at hand?

Sect. IV. *Wildfowl and Wildfowl Shooting.*

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WILDFOWL SHOOTING.

2730. *Wildfowl and wildfowl shooting* though of a less masculine character than the sport last described, but being equally a legitimate object of the gunner's pursuit, will next occupy our attention. Cold and bleak as the weather may be, such a hold has this sport on the minds of some persons, that wholly independent of any other return than the mere capture of these birds, innumerable difficulties and dangers are encountered. Cold must necessarily be despised, hunger must present no terrors, as it is by no means an infrequent accompaniment of the chase; for should the pursuit be made in a punt, one rolling wave, should it do no further mischief, it may wet the inmates to the skin, and saturate all the eatables on board the vessel, however carefully packed by the butler or cook, and that even when the anxiety of the mistress herself has overlooked the process of both cooking and packing. As to the disappointments and the ambiguous pleasures of hope deferred, they are constant garnitures of the sport: "the worse our luck to-day, the better to-morrow," says the true zealot; and we ourselves well know how to appreciate the value of this balm. It is not unlikely that there may be yet some veterans in the horse artillery who may remember something of this wildfowl shooting mania in ourselves, then an officer in the B. Troop, when it was quartered at Lewes in Sussex. They may also remember how our own ardour in this sport was responded to by that of two servants, our man and our dog, both as zealous in the cause as ourselves.

Our dog so valued was a cross between a pointer and a water spaniel: our attention to this animal, and his own great docility, enabled him to enact the parts both of pointer and spaniel very respectably. In our mind's eye we now see him, nearly covered with snow, plunge into the river after our shot, bring his bird, and then immediately (notwithstanding all we could do to prevent it) roll in the snow, as Paddy would say, "to dry himself." As the frost was severe, it followed that the snow soon became ice, and the poor beast so stiffened as to be incapable of proceeding. We, in memory's eye, see ourself and our man servant busily employed in cutting away the icicles to liberate him. We notice this so circumstantially as a practical hint to the wildfowl shooter; for a gentleman who also frequented the Lewes Levels at the same time with ourselves, neglecting to do this, had his dog frozen to death, with the deserved stigma of cruelty attached to him for neglecting a faithful servant. When dogs will roll in the snow after having been in the water, if the weather be severe, the snow should be either wiped, brushed, or (if already become hard) cut off, or the poor brute will be so frozen as to be incapable of proceeding, and must perish of cold, to the disgrace of the master and the loss of the dog. For ourselves we look back with delight at the scenes we then passed over, for the various wildfowl were so plentiful, that it only required a little nerve to brave the cold, and difficulties which half frozen ditches, a continual pelting of storms of hail and snow, ever and anon showered down; we repeat, it was only requisite to brave these to get almost as many *wildfowls* of various kinds as we pleased. Our man servant likewise deserves honourable mention for his zeal in our service, who, although of a delicate constitution, would brave cold, wet, and every privation, to bear us company in our sportings, which were at these times pursued with an ardour that was not to be defended, because it risked the health and life of both parties. Many times during that winter, after spending some hours on the levels, and having gone home, have we both returned to them in the evening, to watch the night flights, and seldom returned unrewarded. That winter proved to us the most productive of wildfowl, both in number and variety, of any we remember before or since. Indeed, one such season is calculated to fix the love of this variety of shooting deeply in the minds of many, who might be before even indifferent to it. We have heard of more than one who never suffered during the winter months one night to pass away without a walk to the oozes, the shores, or the river sides, on every favourable night of this memorable winter.

2731. *A nightly excursion on shore*, however productive of sport, has, nevertheless, not satisfied many zealots in wildfowl shooting; but to enjoy the sport in greater perfection, some, we know, have abandoned their homes for weeks even, having furnished themselves, at considerable expense, with a small sailing smack, fitted up with the necessary accommodations of sleeping berths, cooking conveniences, suitable attendants, a row boat for creeks, and a punt for oozes, with two or three water dogs, &c. &c. Thus equipped they have taken coasting voyages that have extended half way around our island; some few have gone entirely round it; although it must be confessed that the northern coasts have less frequently been traversed than the other shores of our country for winter shooting. During the summer months it is very common to extend the trip, and the adventurous will then continue their course to a very considerable extent. On such an expedition we also once ventured in all the ecstasy of hope; for having, as we have shown, enjoyed the sport in perfection on shore, we could not but expect uninterrupted happiness afloat. But alas! how our passions blind us! for we forgot to take into our account our tendency to sea sickness, when the water was any thing but smooth. We would not, however, disappoint our kind invitor, and therefore we went on board; and while the water continued unruffled, and the glass and joke went round, we remained pleased, and indeed delighted with our meditated excursion. Alas! evening arrived, the wind sprung up, our stomach began to rebel and heave with every heaving wave. Repentance overtook us, but it was too late; and no means offered of being relieved from a most distressing sea sickness through the whole of the night. Morning dawned, and we were put on shore, right glad to be there; and although not cured of our attachment to the sport, yet we thought the purchase too dear, if always to be thus paid for; and we have remained a shore shooter to the present time. Nevertheless, an expedition like that we have noticed, offers a fund of amusement not easy to be met with on any other plan; and the sea-coast gunner, be it remarked, can accomplish his purpose without turning his stomach inside out by a heavy lurch, or violent pitch of a rigged vessel. He can construct a punt or small boat for navigating the shallows; but he, nevertheless, must not consider himself as perfectly exempt from danger even then. If ice be in the river which feeds the oozes he shoots over, it will accumulate, and it may in some cases crush his feeble vessel: many other casualties he may also be overtaken by. The French hut-shooting therefore, figured at p. 93. would suit an old or timid sportsman determined to persevere, better than a more active pursuit of these wanderers through all their wide spread rangings. A detailed account is there to be met of this *domestic shooting*, which, for convenience, can only be matched by the situation of some millers whose machinery, commanding a view of an extensive sheet of water, enables them, through loopholes in their boardings, to pick off these wild travellers as fast as they arrive, which, under some circumstances of weather is very often.

2732. *A general enumeration of the seafowl*, which form the principal objects of the gunner's pursuit, will next occupy our attention. Most of them are web footed, and such as do not breed on our coasts visit us during the winter months, leaving the frost and snow of their own localities to partake of our mild climate, and recreate in the plenty they find. We also levy heavy contributions on them for this their freedom. They therefore borrow their food from us, and repay us by leaving their bodies in the hands of the gunner.

2733. *The swan family* (*Anas* Linn.) stand at the head of web footed birds, and will therefore first engage our inquiry. Colonel Hawker has taken much pains to illustrate the different species of this bird; and also Mr. Yarrel; and to the works of those gentlemen we would refer the reader for information on the subject. The two last discovered species have, with much justice to that critical artist and naturalist, Bewick, been termed *Cygnus Bewickii*, and may be seen at the house of that excellent bird-stuffer, Leadbeater. The hooper is the only swan that breeds in the northern British isles. The Polish and Bewick's swans visit the unfrozen lakes and most salt-water bays in the north during winter, but go still further north to breed. Every winter, some of the three specimens are shot about Little-ferry and Bonar Bridge, in the county of Sutherland. Colonel Hawker states, that in the winter of 1838 he killed several; their weights ranging from thirteen to twenty-one pounds (8th edition, p. 260.). Such sportsmen, however, as visit the western sles of Scotland may meet with them all the year round, in consequence of its being a breedng station. In Iceland, as already noticed (p. 80.), they are likewise caught during their moult, being hunted by mounted sportsmen with fleet and hardy dogs. The rapidity of the flight of the wild swan is almost proverbial. Hearne in noticing it observes, that, "notwithstanding their size, these birds are so extremely swift on the wing when in full feather, as to make them more difficult to shoot than almost any others, it being frequently necessary to take sight ten or twelve feet before their bills. This, however, is only when they are flying before the wind in a brisk gale, at which time they seldom fly at a less rate than a hundred miles an hour; but when flying across the wind, or against it, they are not able to make any very great progress." Of the Brent geese he says, that, "when migrating to the south, they generally avail themselves of a strong north or north-westerly wind, which makes their flight so swift, that when he has killed four or five at a shot, not one of them fell less than from twenty to fifty yards from the perpendicular spot where they were killed." This is a most interesting bird in many points of view, but our limits forbid us to enlarge on it further than by a few words hereafter.

2734. *Wild geese* (*Anser* Linn.) also occupy the wildfowl shooter's attention. Of these there are six sorts which visit us in the winter. The grey-lag is the first, and is notable as being that from which we derive our common goose, but which is now become by domestication considerably larger than its primogenitor. On the wing these birds may be distinguished by always flying in a figure. In their wild state, and in their winter visits to us, they feed on the coasts, and often enter inland to seek for such grasses as suit them; more particularly they are fond of green wheat. When thus discovered, by stalking under cover of a living horse by means of a screen of boughs, they often may be approached, and a remunerating shot made for what they have eaten. Colonel Hawker recommends that we "ascertain in the water meads what parts they have used (which we shall be able to see by their dung and feathers), and then that we should wait for them at dusk in some ambush that commands the fresh places adjoining. Contrive, he says, if possible to get the line of a dyke or drain, so as to take the company on their flank." (P. 219.) As an edible, we are told by sportsmen that this goose is inferior to the Bernacle or even the Brent goose. In the month of March, flocks of wild geese come from the south to the Highlands of Scotland, frequenting the lochs, and feeding on the grass at their margins. By lying in ambush one may kill as many as six of a morning, particularly on Loch Shin, Loch Largail, and Loch Arigel, in Sutherlandshire. In August, these lochs afford first-rate flapper (young wild geese) shooting, which is practised similarly to wild duck flapper shooting, but is nobler sport. The "gray-lag" breeds in a great many of the fresh water lochs of the counties of Ross and Sutherland. It lays from six to ten eggs, which are usually hatched by the 20th of May. The "bean" goose is another bird that breeds in the same counties, but it is much more rare, and usually later in making its nest than the "gray-lag." Loch Shin, in Sutherlandshire, and Sheeness-Caig Loch in Wester-Ross, have generally a few pairs breeding in the season. The white-fronted goose visits all the northern fresh-water lochs that have grassy bottoms, and when the lochs are frozen they retire to the sea. They do not breed in any of the British isles. The Brent and Bernacle species also visit our northern sea-shores during winter. Their edible qualities are not good, as they taste fishy, from feeding much on sea-weed.

2735. *Of the Siberian goose* (*Anser ruficollis*) and the laughing goose, or white-fronted (*Anser albifrons*), we have little to say of our own knowledge. Colonel Hawker tells us, that they were unknown to the gunners on the Hampshire coast until the frost of 1830, when about eighty of them pitched in a field near the village of Milford, where, in a humorous description, he informs us how they were beset by a host of gunners with only moderate success; but that, on the next day, a volley from the colonel's two large barrels brought down about twenty, of which number twelve only could be taken up. It is further remarked, that they take a very hard blow to bring them decidedly into the shooter's possession.

2736. *The cormorant* (*Pelicanus Corbo* Linn.). This family owns three varieties, — the great black, the colegoose, and the crested. The common cormorant weighs about seven pounds. Colonel Montague, however, notices one which weighed eight, and was three feet three inches long, and four feet eleven in breadth. In colour it varies, — being sometimes dusky, and dashed over with an ashy tint; the belly of a dirty white; a short pendent crest also graces the neck of some. It breeds on most of our sea rocks near the very summit. The shag is often its neighbour, but usually builds its nest somewhat lower down. In the winter the cormorant frequents the fresh waters, in which its aptitude in diving is very great, and enables it to subsist by taking the fish found there. Did our sheets allow us space, we could offer some entertaining accounts of its habits; the reader, however, will find these, and much other interesting matter concerning it, by referring to Rennie's edition of Colonel Montague's *Ornithological Dictionary*. Mr. Dunbar says of these birds, that there are only *two* varieties of the cormorant — the common, and the green, or the "green shag." The colegeese, he says, are the young of the common cormorant in their first year's plumage. They do not attain the black plumage until the second breeding season. They breed the next year after they are hatched. In winter both old and young have the same plumage. They never breed in the same rocks with the green shag, but select rocks for themselves. They choose for their nests higher and more inaccessible rocks than the green shags do.

The cormorant visits the fresh waters also; indeed, we have ourselves seen it in the

Welsh rivers and lakes; and we have occasionally observed it perched in the trees. Colonel Montague likewise furnishes an amusing account of the readiness of the cormorant to submit to domestication, under which it even becomes so tame as to be troublesome. One sent to the colonel he notices thus: — "Having received it after a twenty-four hours' journey by coach, every sort of food at hand was offered to it and rejected; even raw flesh was unacceptable, and no fish could then be procured: he was, consequently, compelled to cram it with raw flesh, which it took reluctantly, but without offering any offence with its formidable bill. Having retired to the library after seeing it fed, he was surprised, in a few minutes, to see the stranger walk boldly into the room, and join him at the fireside with the utmost familiarity, resuming the task of dressing its feathers, until it was removed to an aquatic menagerie. At the sight of water it became restless, and when liberated, plunged and dived incessantly for a considerable time without obtaining a single fish; after this it made no further attempt for three days, appearing convinced there were none to be found." (*Ornithological Dictionary*, p. 101.) The cormorant is often followed by the gunner for shooting practice; but it offers no temptation on the score of its table qualities, being rank in the extreme. We have elsewhere detailed its valuable qualities as a fishing bird for the use of its master (see *antè*, p. 22.). "In England," as Willoughby informs us, "they were employed to take fish, being first hood-winked, after the manner of falcons; and a leather thong was fastened around the lower part of the neck to prevent them from swallowing their prey. When taken to the river the hoods are taken off, and they presently dive under water, and pursue the fish; when they have caught, they arise quickly to the surface, and swallow the fish, till each bird has swallowed five or six; their keepers then call them to the fist, to which they readily fly, and one after another throw up their booty, a little bruised with the nip given them by their bills. When they have done fishing, they loose the string from their necks, leaving the passage to the stomach free and open, and for their reward give them part of the fishes they have caught." Whitlock tells us, that "He had a cast of corvorants, *manned* like hawks, which would come to hand." He took much pleasure in them; and relates, that "the best he had was one presented to him by Mr. Wood, master of the corvorants to Charles the First."

2737. *The wild duck* (*Anas Boschas* Linn., *fig.* 445.) in size is rather less than the tame duck, which has been somewhat enlarged by the fostering of domestication. In its plumage the wild differs but little from the tame duck. The wild mallard, or drake, weighs usually about two pounds and a half; but has been known to reach to three and a half. The bill is yellow; the head and upper part of the neck are ornamented by a deep glassy green, terminating in a white ring. The female is less in size, and not distinguished by any splendour in the colours of her plumage. A somewhat larger variety is sometimes taken in decoys, and is also occasionally brought down in wildfowl shooting. This difference in size puzzles some persons as to the designation to be given to such birds; but we would inform them that they are nothing but ducks that have been bred between the wild and tame birds, which, being forced by frosts out of the farm ponds or canals, are obliged to take to the company of the wild breed altogether. Among wild ducks we hardly need observe, that the male is called the *mallard*, and the young birds are designated *flappers*. The parents pair in the spring, and the hens incubate in some slight shelter, and lay from ten to fourteen eggs, which she sits on about thirty days. True to nature, the ducklings have been seen almost as soon as clear of the shell to roll into the water, which instinct has taught them immediately to love, and to frolic about in with delight as their proper element. It is well for them that they possess this precocity, otherwise the slow growth of their wing feathers would make prisoners of them to their utter destruction. When hatched at a considerable distance from the water the old duck, it is said, has been seen to take her young in her beak, or between her feet; probably she has employed both beak and feet to remove them to the water as their natural element, where they at once swim with ease and

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confidence. Such are the impressions of instinct. Mr. Daniel very justly remarks, that "the wild duck is an artful bird, and does not always make its nest close to the water; an instance Mr. Tunstall mentions of a nest being found at Etchingham, in Sussex, upon an oak tree twenty-five feet from the ground, where the old duck was sitting upon nine eggs, which were supported by some small twigs laid crossways."

The gamekeepers of Mr. Eyre of Passop, Derbyshire, in 1801 observed a wild duck fly out of a large oak, in which the year preceding there was a hawk's nest; upon examining, the nest was found in complete repair, and contained two eggs recently laid by the duck in it." It is a curious circumstance, but, as we see, not more curious than true, that the caution of wild ducks in many cases leads them to build in trees. Percy Scott, Esq. a worthy and well informed magistrate of Newport, Isle of Wight, has assured us of several instances of this kind, which had fallen under his notice in Ireland, and more than one has also passed under our own. Wild ducks are, therefore, native here; but they by no means breed with us in numbers sufficient to supply the wants either of sportsmen or of a consuming public. When you have either shot, or are going to purchase what you consider to be a wild duck, examine the colour of the claws, which are black in the wild species, but of a dingy yellow in the tame. As wild ducks separate to breed, they usually may be found in pairs on the rivers; and the law has wisely endeavoured to throw its shield over them, to prevent the double destruction of themselves and progeny. But it happens that many wild ducks being bred here, they do not congregate; at least they do not join the great shore flights we shall yet have to notice. These ducks, however, have their morning and evening flights, at which times the gunner may lie in wait for them a little before dusk; by carefully concealing himself, he may get a shot as they go to or return from their evening visit. When it is moonlight, they will often wait until late; but then the sport is most certain, as the birds feel more security at that time than at any other, and will approach less warily. Nor is it generally known how usual it is for almost every tolerably large pond to be visited by wild ducks, provided such pond be not in the immediate vicinity of inhabited houses.

2738. *In-shore shooting of wild ducks* may be said to be legitimate sporting as soon as the *flappers*, now young ducks, take wing, which occurs towards the middle of August, until which time they are not worth shooting, for the table at least, unless they be the produce of a very early hatch. It is true that Colonel Hawker directs that in July you should hunt the rushes in the deepest and most retired parts of some stream, and when you have sprung the old duck, you may be tolerably certain that the flappers may be found also; and as their wings are not yet strong, they will fall an easy sacrifice. True, colonel, they may; but surely you would hardly call this sport, or even fair play; nay, the pot shooter would, in all probability, refuse to be concerned in it, for the birds at this age are not worth eating; nor will we believe that so finished a sportsman as Colonel Hawker would himself be engaged in what may be called "a murder of the innocents." Indeed, he himself remarks on the practice, that "it is more like hunting water rats than shooting birds." But when the flappers have taken wing, then indeed the shooting of them may be fairly termed legitimate sporting. In this case walk in a very deliberate manner along the side of a brook or rivulet. If it be not too deep, it will increase the chances to walk up the brook itself, having with you one or more well broken water spaniels, if mute so much the better; at all events they must not be such as flounder on before you, disturbing every living creature in their passage; on the contrary, let them be well nosed, but very patient: they must be as still in their manœuvres as in their tongues, hunting here and there, as it were, on the sneak, and yet with an intensity of purpose that shall not pass over any lurking bird however secreted. For this purpose Colonel Hawker with much judgment recommends a mute water spaniel.

The fens of Lincolnshire, Cambridge, and Martin Mere in Lancashire, are excellent localities for duck as well as every other wildfowl shooting. This species of shooting both of duck and flapper can likewise be pursued in perfection on the borders of many of the rivers of North and South Wales. It is true that in some localities it will be necessary to ask permission, but in many others none is required. In some of the lakes of South Wales this shooting is also admirable, but in Scotland it is even more so; and there it is, in most instances, entirely at the sportsman's pleasure to do as he chooses. Reed shores form admirable scenes for good fowl shooting on the large meres, if you lie in wait for the passage of the birds, with a steady dog that will stand at your heels without sound or motion. So situated it is seldom that half an hour passes without a shot presenting itself, even in the daytime. In the morning and evening flights the chances will be greatly increased; but in these cases the stranger must have a guide, or he must have made some previous observation, to insure success. Streams which are sheltered by trees and hedges are the chose resort of the duck tribe, and the certain rendezvous of that sporting trump the teal. I is however but proper to observe, that while we, like other sportsmen, would eulogise and be very apt to take a shot at a flapper, if it came in our way, yet are constrained t state that the deed is illegal, the last game act having a clause to prevent wildfowl, eithe young or old, from being killed from the last day of March to the first of October. Whil we would protect all indigenous breeds of game, those wild birds that visit us in myriad during certain seasons, and then locate themselves here wherever they find food, should, as we think, be considered fair game at any time of the year. We should be inclined to suspect that the owner of some decoy had had a hand in framing this interdiction.

2739. *The pochard or dun bird* (*Anas Ferina* Linn.), as Daniel observes, "is about the size of a widgeon, weighs one pound twelve ounces; its length is nineteen inches; breadth two feet and a half; the bill is broader than the widgeon's, of a deep lead colour, with a black tip; irides orange; the head and neck deep chesnut, with a small triangular spot of white under the centre of the lower mandible; the lower part of the neck and breast, and upper part of the back, dusky black; scapulars and wing-coverts nearest the body of a greyish white, elegantly marked with narrow lines of black; the exterior wing-coverts and quills dusky brown; secondary quill feathers regularly edged with a stripe of white; the belly ash coloured and brown; vent feathers and coverts of tail black; the tail consists of twelve short feathers of a deep grey; the legs lead coloured. The female has the head of a pale reddish brown; the breast is rather of a deeper colour; wing-coverts and belly cinereous; the back marked like that of the male. These birds are eagerly bought by the London poulterers under the name of dun birds, as they are deemed excellent eating: the greater part of what appear in the markets are caught in decoys; but the construction and mode of working are perfectly distinct from that wherein the other wildfowl are taken. A decoy for dun birds is called a flight-pond, and has nets fastened to tall stout poles twenty-eight or thirty feet long; at the bottom of each pole is a box fixed, filled with heavy stones, sufficient to elevate the poles and nets the instant an iron pin is withdrawn, which retains the nets and poles flat upon the reeds, small willow boughs, or furze. Withinside the nets are small pens, made of reeds about three feet high, for the reception of the birds that strike against the net and fall down; and such is the form and shortness of wing in the pochard, that they cannot ascend again from these little inclosures if they would; besides, the numbers which are usually knocked into these pens preclude all chance of escape from them by the wing. A decoyman will sometimes allow the haunt of dun birds to be so great, that the whole surface of the pond shall be covered with them previous to his attempting to take one. Upon such occasions, he bespeaks all the assistants he can get to complete the slaughter by breaking their necks. When all is ready, the dun birds are roused from the pond, and as all wildfowl rise against the wind, the poles in that quarter are unpinned, and fly up with the nets at the instant the dun birds begin to leave the surface of the water, so as to meet them in their first ascent, and they are thus beat down by hundreds. At the pond of Mr. Buxton at Goldanger, in Essex, as many pochards have been taken at one *drop* as filled a waggon, so as to require four stout horses to carry them away; and the lower birds in the pens have been known to be killed and pressed entirely flat from the numbers of their companions heaped up above them by the fatal stoppage of the poles and nets. The few attempts made to domesticate the pochard have been hitherto unsuccessful. They do tolerably well where there is plenty of water, but cannot bear walking about on hard pebbly grounds." (*Rural Sports*, vol. iii. p. 281.) We have followed the above quotation throughout its whole length, from the interest which the detail excites. Colonel Montague kept a dun bird for some years in his menagerie, which was very tame, and appeared happy. The male bird has a tracheal labyrinth, which is shorter than that of the scaup, and nearly round throughout, according to the description which Dr. Latham has given of it. It is more round than the upper side, but is crossed with a small bony partition as in the scaup; but in this bird it forms an obtuse angle with the rest of the trachea; whereas, in the scaup, it is continued onwards in a straight course. The use of this apparatus is, without doubt, to enable the bird to make certain intimations, by which it communicates with its fellows; it is, in fact, his horn of communication.

2740. *The widgeon* (*Anas Penelope* Linn., *fig.* 446.) provincially known as the pundle wheme or whim; is too common in every poulterer's shop to need any particularisation, further than that it weighs about twenty-four ounces, and measures twenty inches in length. It is subject to considerable variety in its plumage, which is another reason for not entering upon a more critical detail of it. The hen widgeon is of a more rusty brown than the cock; the tips of the lesser quill feathers are white, as is the belly also. Mr. Daniel observes, "This species is common on most parts of the old continent; it is caught as low as Egypt, from the middle to the end of November, by nets in the marshes, before the departure of the waters; it is also found at Aleppo in plenty during the winter;

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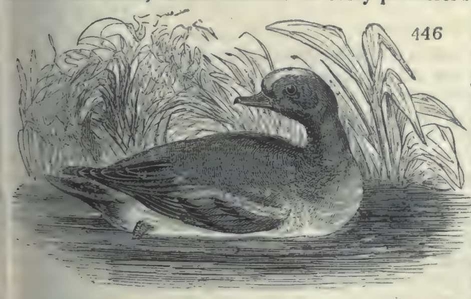

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is observed likewise in the Caspian Sea and its neighbourhood; and in most parts of Europe, as far as Sweden. It abounds in England during the winter months, and is caught in the decoys. It is said not to breed in France; nor is it certain that it does in this country. Both sexes are alike until the spring after hatching (this obtains in the pintail, the gadwall, and the shoveller, which are all grey, and have no beautiful feathers when young), when the males about March gain their full plumage, but lose it again the end of July. Mr. Dunbar says the widgeon breeds in Sutherlandshire, and in the island of Lewis. It lays from six to nine eggs, rather elongated in shape and of a cream colour. The summer plumage is very beautiful, and the feathers of the male are much sought after for making artificial flies. Only of late years it has been discovered that the widgeon bred in the British isles.

2741. *The divers* form an assemblage of birds so named by decoymen, and the term is adopted by some naturalists to distinguish a group having a singular adroitness in diving. Mr. Daniel particularises the scoter, scaup, golden eye, and morillon, among them. Colonel Hawker informs us, that " of those birds literally and properly called divers, there are seven kinds to be found in Great Britain, exclusive of six others which are separately classed as the genus *Mergus*." (P. 209. 8th ed.) Mr. Daniel says of them that " they vary much both in plumage and size; some weighing two pounds and a half, and others a pound less, are caught in the decoys with the ducks, &c." In hard weather they frequent the shores and the tide rivers in great plenty, and are almost always at that season fat and in good condition: they do not fly in such large flocks as many of the duck species, and usually close to the surface of the water, and bear very hard blows from the shot without dropping, unless struck upon the head or wing. The scoter is seen in prodigious numbers from November to March on the French coasts, especially if the wind be from the north or north-west. The day seems to be spent by these birds between diving and flying to small distances over the water, which they do so low as often to dip their legs in it: they swallow their food whole, and soon digest the shells, which are found crumbled to powder among their excrements. They have been kept tame for some time, and will feed on soaked bread. The flesh tastes fishy in the extreme, and, from this cause, is allowed by the Roman Catholics to be eaten on fast days and in Lent. The morillon is the young of the golden eye in its first year's plumage.

2742. *The teal* (*Anas Crecca* Linn., *fig.* 447.) is a deserved favourite with the sportsman, as well as the epicure. Colonel Hawker says of it, " Of all the prizes that a wildfowl shooter could wish to meet with, a flock of teal is the very first. Independently of their being by far the best birds of the whole *anas* tribe, they are so much easier of access, and require such a slight blow, that no matter whether you are prepared for wildfowl, partridges, or snipe, you may at most times, with very little trouble, contrive to get near them; and this being once done, you have only to shoot straight to be pretty sure of killing." (Hawker on *Shooting*, p. 264.) Mr. Daniel also remarks on it as one of the most delicate birds that grace our tables. Like some other wildfowl, it is so well known to every one as not to require any critical description. It is somewhat remarkable for having a semi-cartilaginous labyrinth towards the end of the windpipe. Some others, also, of the wildfowl exhibit structural peculiarities here, adapted to the particular sounds they emit, which are in many cases very singular; indeed, so much so, that they could not be emitted through any other agency than a structural one particularly adapted to the required modification. The male bird weighs twelve ounces, and measures rather more than fourteen inches in length. The female is less ornamented than the male; her wing, however, bears a beautiful green spot like that of the male, but she wants the splendid markings of his head. It is, says Colonel Montague, " the smallest of the duck tribe. It comes to us in winter, and frequents our fresh waters in small flocks. Many are caught in the decoys; and some few breed with us." " Mr. White in his *Natural History of Selborne* mentions young teal having been taken on the verge of a pond in Wolmer Forest. It is

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also said to breed in the mosses about Carlisle; and we are informed they have been known to breed even in confinement.

"The nest of the teal is said to be uncommon in France, and that its breeding grounds are more towards the north. It is made of rushes, lined with down, placed on the side of a pond, so as to rise or fall with the water. The eggs are about the size of those of a pigeon, of a dirty white, spotted with brown. This bird, like most of the duck tribe, is subject to variety, which has occasioned it to be divided into two or three species, to one of of which has been given the name of summer teal." (Montague's *Ornithological Dictionary*, p. 508.) "Buffon, however, is sceptical on its rarity in France, and gives an account confirmatory of its remaining there throughout the summer, and breeding likewise. His accounts go to state, that they come there the beginning of March, when they distribute themselves on the coast. About April they collect a quantity of grass and rushes, and make a covered nest, the opening for the most part to the south; in this they lay from ten to fourteen eggs, of a dirty white, and as big as those of a pullet (a proof, by the way, that it is a distinct species, as the eggs of the common teal are not larger than those of a pigeon), and sit from twenty to twenty-three days. Buffon likewise observes, that the male loses the plumage of distinction after the time of incubation is over, becoming so like the female as not to be distinguished; but regains it after January. He adds also, that this bird cannot bear the cold, and does not frequent the northern countries." (Daniel's *Rural Sports*, p. 277.) Mr. Dunbar says, "the nest of the teal is never placed in such a situation as tc rise and fall with the water. It is found on all the grassy lochs in the north, and sometimes some hundred yards from the water's edge, and at others close by; but at all times a dry spot is selected, where it deposits ten to sixteen eggs, not much larger than a pigeon's, but longer and of a cream colour, without any spots. There is no species of duck more prolific.

2743. *Teal shooting* is however followed with much avidity, and not unfrequently by gunners who will hardly stoop to any other water shooting. It has, indeed, a certain resemblance to some of our inland shootings, which are neither common nor within the reach of every one, which may give it a charm in the eyes of fastidious shooters: and indeed it cannot be denied that it is most animating sport when pursued on the banks of a small river or even a large brook, well sheltered by bushes, and having one or two orderly spaniels (not babblers) as attendants in company with another gunner, who will take the opposite side, and thus act in concert. Both gunners and dogs being thus divided, there will be little chance, although they crouch and hide much, of passing over them. When hunted up, a teal seldom rises in the air, but usually skims along the stream, and presents a fair shot. If it cannot be got at for the interception of trees or large bushes, let one person run forward so as to circumvent his entire escape out of reach. It is not often, however, that a teal flies away altogether; there are usually at hand some sympathetic ties of a mate or brood, which will confine him, her, or them, from straying far out of the purlieus of the locality. Avoid therefore shooting at random, and when it is seen that your shot has not taken effect, if there be two of you, let one get ahead to either take his chance of a shot, or to prevent the total departure of the bird or birds. Colonel Hawker very justly says, "If you spring a teal, he will not soar up and leave the country like a wild duck, but most probably keep along the brook like a sharp flying woodcock, and then drop suddenly down; but you must keep your eye on the place, as he is very apt to get up again, and fly to another before he will quietly settle. He will frequently, too, swim down stream the moment after he drops; so that if you do not cast your eye quickly that way, instead of continuing to look for him in one spot, he will probably catch sight of you and fly up, while your attention is directed to the wrong place." (P. 264.) We have reason to believe that the teal does not leave us earlier than October, and, as before observed, some remain with us altogether.

Subsect. 1. *Coast Shooting of Wildfowl.*

2744. *The shooting of the wildfowl* which frequent our coasts, has very long been pursued with much activity and perseverance by individuals actuated by different motives. The hardy race that employ their time in fishing during the summer, pursue the feathered tribes in the winter for the support of themselves and familes; and from their exertions our markets are partly supplied. Wildfowl shooting is also pursued with ardour by many gentlemen as a recreation; and probably it is not too much to say, that nowhere has the practice been brought to greater perfection than on the southern coasts of our island. The practice was slowly progressing when Mr. Gilpin so ably described it; but it has gained much since then, and has advanced with greater rapidity towards perfection since Colonel Hawker, becoming himself a zealot in the sport, lent his strong mind, his command of money, and all his energies, to the purpose of making the practice more efficient. Every year has witnessed some improvement in the gunnery employed, and in the means of producing the greatest return of the animals sought after, with the least possible danger to the persons engaged in the pursuit of them. At the outset we shall confine ourselves to the southern coast wildfowl shooting, as depicting the *élite* of the practice. As we advance we shall notice the methods employed in other parts of our island.

2745. *Mr Gilpin's account of the wildfowl shooting on the Hampshire coast* is to the following purport: — "The coast between Hampshire and the Isle of Wight is peculiar, consisting at ebb-tide of vast muddy flats, covered with green seaweed: it affords the fowler an opportunity of practising arts perhaps not elsewhere resorted to. Fowling and fishing," says Mr. Gilpin, "are indeed on this coast commonly the employments of the same person. He who in summer with his line or net plies the shores when they are overflowed by the tide, in winter with his gun, as evening draws on, runs up in his boat among the little creeks which the tide leaves in the mudlands, and lies in patient expectation of his prey. Seafowl usually feed by night, when, in all their multitudes, they come down to graze on the savannahs of the shore. As the sonorous cloud advances (for their noise in the air resembles a pack of hounds in full cry), the attentive fowler listens which way they bend their course; perhaps he has the mortification to hear them alight at too great a distance for his gun (though of the longest barrel) to reach them; and if he cannot edge his boat round some winding creek, which it is not always in his power to do, he despairs of success that night; perhaps, however, he is more fortunate, and has the satisfaction to hear the airy noise approach nearer, till at length the host settles on some plain upon the edge of which his boat is moored: he now as silently as possible primes both his pieces anew (for he is generally double armed), and listens with all his attention. It is so dark that he can take no aim; for if he could discern the birds, they would also see him, and being extremely timorous, would seek some other pasture. Though they march with noise, they feed in silence; some indistinct noises however, if the night be still, issue from so vast a concourse; he directs his piece, therefore, towards the sound, fires at a venture, and instantly catching up his other gun, discharges it where he supposes the flock to rise on the wing. His gains for the night are now decided, and he has only to gather his harvest; he immediately puts on his mud-pattens (flat square pieces of board, which the fowler ties to his feet that he may not sink in the ooze), ignorant yet of his success, and goes groping about in the dark in quest of his booty, picking up sometimes many, and perhaps not one; so hardly does the poor fowler earn a few shillings, exposed in an open boat, during a solitary winter night, to the weather as it comes, rain, hail, or snow, on a bleak coast a league probably from the beach, and often liable, without great care, to be fixed in the mud, where he would become an inevitable prey to the returning tide. I have heard (continues Mr. Gilpin) one of these poor fellows say, he never takes a dog with him in these expeditions, because no dog could bear the cold which he is obliged to suffer; and, after all, others frequently enjoy more from his labours than himself; for the tide often throws next day, on different parts of the shore, many of the birds which he had killed, but could not find in the night."

2746. "*The danger*," says Mr. Daniel, "of attacking the wildfowl in their small boats is considerably increased when there is much ice in the river, by which they sometimes get encircled, and then can only float with the current, and are often kept two or three tides before they can extricate themselves; and their punt is but ill calculated to sustain pressure against its sides, which are not twenty inches high from the surface of the water; in this the punter by night drops down with the tide, or uses his paddles after the fowl; he knows their haunts, and takes every advantage of wind, tide, moon, &c.: his gun, which carries as much as a little cannon, is laid with the muzzle over the stern of the punt in a hitch, which regulates the line of aim: at the bottom of the punt he lies upon his belly, and gets as near the route of fowl that are upon the water as possible; when within the range of his gun, he rattles with his feet against the bottom of his punt, and when the fowl begin to spring at this unexpected sound, at that moment he pulls the trigger, and cuts a lane through their ranks; he instantly follows the direction of his shot, and gathers up those that are killed or just expiring, for very seldom he makes it answer to row after fowl that are only wounded: he then charges his gun, and drifts further down the river, in hopes of a second, third, and successive shots. By this mode a man has brought home from fourscore to a hundred wildfowl of various kinds in one night's excursion; and this will not seem an exaggerated account, when the multitudes which, in hard frosty weather, with the wind at east or north-east, haunt the Blackwater river are known."

The numbers that are seen in their day flights, and the noises of various kinds at night, are almost beyond belief: to Mr. Daniel, prepared as he was to behold amazing quantities, they exhibited far beyond what he was led to expect; and to others who have seen their throngs, the astonishment has been perhaps still greater. A punt shooter, of the name of Bowles, has been known to clear upwards of 100*l.* in a season by his gun: the wildfowl were sold to the higglers, &c. at 2*s.* a couple, one with the other: allowing his expenses to be only 30*l.*, here were 2600 birds brought home; an immense destruction, when the whole period allotted for it does not much exceed five months. Forty-two widgeons have been killed at a single shot in the daytime, and the difficulty of approaching the great flocks of fowl in the light is tenfold. A man in whose punt the compiler was, got eighteen widgeons at one shot, and many that were crippled escaped. If in the day, or at night, the punters get a shot at the fowl at feed upon the ooze, they tie on their plashes (similar to the mud-pattens used in Hampshire), and collect the spoil. The best time for this shooting is stated to be the first or second day's thaw after a sharp frost; which we know by our own experience to be true, and likewise at such times when deep snow has long covered the ground; for the fowl are flying in every direction to dabble in the fresh water, which then appears all around inviting them. Another favourable opportunity is at the commencement of a frost, with the wind strong at east, and a sleet or snow falling; if the guns can but be kept dry, there is no complaint about using them, and the fowl in such weather always fly lower than when the atmosphere is clear.

2747. *In the day shooting upon the river below Goldanger in Essex*, near to which we ourselves resided, at half ebb the very extensive oozes of this locality become dry, leaving a surface of a long grass, upon which the wildfowl feed. The nicety required here is, so to place the punt in some of the creeks which intersect these oozes as to intercept the birds either in coming to their feed when the tide recedes, or, as Mr. Daniel has it, "when it makes so as to cover the feeding ground and drives them from the spot. It is then the shooter has full employment for an hour and a half or two hours; after which the fowl either get settled upon their feed beyond the reach of interruption, or, if driven from it by the tide, they hasten to the various decoy ponds upon that river to repose themselves." The gun proper for this shooting when followed as an amusement, has no occasion to be more than three feet four inches in the barrel. The regular shooter for profit uses one of three feet eight, which should not weigh less than twelve pounds (upon this scale the whole gun will be about eighteen pounds' weight); this quantity of iron of the above length will be as capable, or more so, of throwing shot sharp and distant as a barrel two feet longer. Should this heavy mass be objected to as cumbersome to carry, let it be remembered, that these guns are not meant to lie upon the arm, or to be carried about in the fields; the shooter is either seated in a boat, or upon a marsh; in either situation the gun does not fatigue him, since he has nothing to do but elevate it as the wildfowl fly over his head; and, after firing and charging, let it again lie beside him until fresh objects require its use. Without this ponderous substance, no man can stand the recoil of a gun that will carry a sufficient charge for doing execution at great lengths, and to kill many birds at a shot. A common fowlingpiece may do its business well, so far as its capacity extends, but it will carry very few pellets of either single or double Bristol shot; the latter is generally used by the punters for day, and the former for night shooting; the largest BB patent shot is too light for either; but even with that a gun with a common sized bore would not carry enough to do any great execution, if a rout of fowl were ever so numerous." We regret that our want of room prevents us from introducing much other interesting and instructive matter of our own made on the spot, and of much more that may be met with in Mr. Daniel's pages who resided in the vicinity of these scenes much longer than ourselves; and to his work on *Rural Sports*, vol. iii. we would refer the inquirer.

2748. *The dress of the wildfowl shooter* is an important matter, and is thus touched on by Mr. Daniel, and further detailed by the *Magnus Apollo* of the pursuit, Colonel Hawker. We will however first quote Mr. Daniel, who tells us that, "To be properly equipped for this sport in *severe* weather, it is essentially requisite to be well clothed. Flannel shirt, drawers, and additional exterior and warm garments, will not be found unpleasant to those who face the cold winds upon the marshes, or sit fixed in a punt alongside the oozes; thick yarn stockings, and over them what are termed wads by the fishermen (knit woollen stockings that come up to the middle, and however inelegant in their appearance, prove very solid comforts to the wearer); and over these double defenders of the legs, a pair of waterproof boots will also be found indispensable. A cap must be worn made of skin, instead of a hat; the fowl will not approach near the latter, and nothing so much or so soon shies them." (*Ibid.* p. 283.)

2749. *Colonel Hawker's instructions on the shooter's dress* are even more valuable and extensive. He commences with water-boots as essential in this sport, and recommends Mr. Sherb, of East Yarmouth, as the best maker of them, and directs that they should be worn over an extra pair of coarse yarn stockings. Be it noted, that boots will be much more impervious to water if kept at least half a year before they are worn, and that afterwards much attention is required to keep them from becoming too hard, which is best done by applying some good dressing to them. If they have already become hard, we ourselves recommend to apply oil of tar one part and neat's-foot oil three parts. To make them wholly impervious to wet, the colonel however directs, drying oil one pint, yellow wax two ounces, Burgundy pitch one ounce. Melt over a slow fire; and if you be particular as regards the smell arising from the mixture, add two or three drachms (we should say one drachm, for they are all dear), of any of the sweet scented essential oils, as oil of lavender, &c. To make the boots, the cap, and even the top cloak, impervious to the wet, boil any quantity of Indian rubber in four times the quantity of linseed, adding to it an ounce of spirit of turpentine, to render it sufficiently drying. Sailors' yarn stockings, which reach almost up to the middle, should in very cold weather be put on before the boots, which therefore should be of an extra size. A very warm waistcoat, surmounted by a jacket of sheep-skin or swan-skin is necessary. Over a Welsh wig wear a leathern cap, so dressed as to be impervious to wet. Wear an Anglesea to defend the chest, and by no means, in cold or blowing weather, forget some warm cuffs, as they impart warmth to the hands as well as the wrists, as we have often had occasion to remark. For more full directions on every point connected with the equipment of the wildfowl gunner, we would recommend him to Colonel Hawker on *Shooting*, 8th ed. concluding our own hints with this remark, that the gunner's dress, be it what it may, should harmonise with the ground usually met with, and the mud of the shores; but it should be somewhat lighter.

2750. *Flight shooting.* The uninitiated in this sport, without other company than one friend, or his servant, may commence with this shooting by following these instructions: — Buy either a punt or canoe, provided you can pitch on a retired spot not followed up either by the fishermen or the rabble of the neighbourhood. In a canoe, either by rowing or shoving yourselves along between the banks of a creek, being well secured from observation, your chance of success is in the proportion of your prudence in keeping yourselves completely concealed, and in the dexterity of your manipulations when the fowl begin to arrive in small trips towards nightfall. Being provided each with a handy duck-gun, wait their arrival patiently. Now, as Colonel Hawker most descriptively expresses it, you will probably soon hear "the whistle of the approaching widgeon," the stormy rush of the dun birds, the plaintive notes of the plover, and the shrill sounds of the approach of the wild ducks. It will offer you more chance of success should the weather be somewhat boisterous, and still more if the birds are forced to fly against the wind, which not only makes them fly low, but pretty closely together also. Be particularly careful that nothing you have on can make a glare; be still as death, yet watchful as life can make you; and as the birds in the flight up the creek lower themselves, shoot well forwards, say one or two feet, before their heads, according to the rate they fly at. If you can find, or can make any screen, one may leave the boat, and wait the flight of a trip coming on the marsh to feed; the other may wait his own chance with patience in the boat. This shooting may also be attempted, and often successfully, when alone, and likewise without a boat, provided you have the means of concealing yourself, which will in all probability happen by taking advantage of some of the deep indentations made by storms, currents, or under the banks of a brook. Wait patiently in such a situation, and you will be almost certain of success, particularly about the dusk of the evening; and if you are as great a zealot as we have been at the sport, try the grey of the morning, which we have commonly found the best time, because the least employed for this purpose.

SUBSECT. 2. *Lake and Pond Shooting.*

2751. *Lake and pond shooting.* If a lake or large pond be in the vicinity, and circumstances prevent you from taking advantage of the resources mentioned, first inspect the lake or pond that you may acquaint yourself with its safety as to paths, otherwise by going at twilight you might be lost in some gully, ravine, &c. Look well about you to observe whether feathers are spread on the sides of the ponds, as indications that the birds do visit it. If the lake or pond be supplied with a rivulet or spring, which, in all probability, will be the case, take your stand as near to it as convenience will permit, be well concealed, and be not in a hurry to fire, as we have had many occasions to complain of the impatient, when perhaps one bird only has been shot. On the contrary, if sufficient time be allowed, the birds will be coming in in small trips, and the patient gunner may then "double up" his eight or ten, and, if two guns are present, one may take the swim and the other the mount, by which we mean the first shot should be directed against those in the water, and the next against those which have taken wing. While treating of lake, mere, broad, and pond shooting, we must not locate or confine our views to any one particular spot, or we shall cripple our practice more than the birds. In the fens of Lincolnshire and Cambridgeshire this shooting is pursued with extreme ardour. The grounds there are particularly favourable to secreting the fowl, and consequently we find many of the duck tribe remain to breed there, whereas on our southern coasts, as those of Hampshire, Essex, &c. they come for food only during the severities of winter; but in the fens, meres, and broads, we repeat, they become localised and produce young, and the interesting consequences that ensue are, that in August the flapper shooting there (*i. e.* young ducks) is excellent, when on the coast nothing of the kind is met with. If the rivulets which feed many of the meres be ascended to their sources with two or three good water-dogs, and there be one on each side of the bank, and a servant to mark, the dodging teal will break away, or the mallard will rise high in the air; while the female duck will remain until her tiny brood are hid in safety, when she also essays a flight, which one of you will probably stop. In these localities the summer habits of many birds become familiar to us, but are utterly unknown to the great gunners on the southern coasts, which, however, have their own peculiar sports.

2752. *For summer shooting* on the meres, broads, &c. of our fenny districts, the sportsman may boast of the variety he meets with. When he extends his trips, he also may have variety, or he may purposely (as we have known to be done) confine himself to the shooting of the flappers, and those only. Here coots, dabchicks, waterrails, and some other birds, congregate and furnish the general shooter with amusement. In other districts, besides those we have mentioned, wildfowl shooting of the best kind is likewise to be met with. On the Suffolk coast we have had excellent sport; there the bittern booms his hollow tone, and the heron watches the finny tribes, while plover, curlew, &c. abound. Stretch we away into Wales, either North or South, there excellent lakes are found, abounding with fowl. On the lochs of Scotland, masculine shooting at all varieties of wild fowl may be met with; for here the eagle tribe are fishers, and surely it is no misnomer to call them *wild* fowl. Here our sea-eagle (*Albicilla*), and the osprey (*Pandion Halietus*), well known by its name of the fishing eagle, ravage the finny tribes from the Lochs of Lomond, Aire, and Marree. Here the ravenous bird may be seen hovering over a piece of water in which aquatic plants have congregated ducks, coots, &c. &c., which, by their numbers and variety, offer him the choice of prey. Next see the marauder, winding his way towards his nest in yonder craggy clift; but mark! the quick-eyed gunner has brought him down.

Ireland, as well as England, Wales, and Scotland, presents the sportsman with excellent wildfowl shooting on the banks of its rivers, its lakes, and its shores generally. When we were in that country the principal oozes were at a distance, so we did not visit them: but as we were in constant communication with native sportsmen, we learned much of the practices of this extensive and intrinsically sporting country, where not to be *au fait* in all rural sports was a disgrace.

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WILD-FOWL SHOOTING.

2753. *Wildfowl shooting is also pursued with ardour in India*, as well by the natives as the visitors. "The English," says Pennant, "send out their servants as well as Indians to shoot these birds on their passage. It is in vain to follow them; they therefore form a row of huts made of boughs, at musket-shot distance from each other, and place them in a line across the parts of the vast marshes of the country where the fowl are expected to pass. Each stand is occupied by a single person; these, on the approach of the birds, mimic their *cackle* so well that they will answer, wheel, and come nearer the hovel. The sportsman keeps motionless and on his knees, with his gun cocked, and never fires till he has seen the eyes of the wildfowl. He fires as they are going from him; then picks up another gun that lies by him, and discharges that. The fowl killed he sets up on sticks, as if alive, to decoy others; he also makes artificial birds for the same purpose." Every sort of wildfowl has a different call, but the Indians are admirable in their imitation of each.

Subsect. 3. *Hampshire Coast Punt Shooting.*

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PUNT SHOOTING.

2754. *Hampshire coast shooting with a launching punt* (*fig.* 449.). It is probable that this shooting, and the management of a punt, have been brought to a greater perfection here than in any other part, and that principally by the exertions of one individual. It is not too much to say, that Colonel Hawker was the first punt gunner in Great Britain. The Hampshire fishermen, who are equally expert at wildfowl shooting, are acknowledged to be the most dexterous and adventurous of their kind; and when the fowls were as heretofore plentiful, and the shores less invaded by idlers, they proved themselves the most successful of any of the same calling. Indeed, had they been as prudent as they were successful, they might each have laid by "sufficient for a rainy day." But "light come, light go," was their motto, and their practice also; and now that the birds are more scarce, and shooters numerous, they sigh over their lost avocations. The *take* now made would be still less than it is, had not Colonel Hawker introduced many improvements, both in the vessels employed and in the practice of wildfowl gunnery: his ardour in the sport, and his mind being devoted to the entire subject, have at once rendered the manipulation more systematic, and the vessels and other means employed more effective. The most simple among the vessels used for wildfowl shooting is a punt, extremely light, but remarkably well put together. Those now employed to traverse the great oozes on the Hampshire coast are built round at the stern, an elm plank of only a moderate thickness forming the bottom. In length they average about fourteen feet, and in breadth about fifteen inches, ten inches of height increasing to two feet six inches at the gunwales. Colonel Hawker recommends a solid block of elm, as best adapted to form the knee of the vessel, which is fixed firmly to the bottom.

2755. *A gun of fifty pounds weight*, Colonel Hawker thinks, answers the purpose here intended best: the old heavy gun, of seventy or eighty pounds, rendered the punt immovable almost when fouled on grass or winkles, which are shells strewed over the oozes in myriads. The sportsman in such a punt rows with his back to the gun until he sees the fowl, when he turns on his face and works himself along with a kind of prong, weighted to catch the ground. When there is so much water that the shoving-pole cannot readily reach the ground, two paddles are made use of to push the adventurer forward. Having given these instructions in justice to ourselves, we now, in equal justice to the reader, recommend him, if he feels the smallest inclination to become fully initiated in this sport, to immediately supply himself with Colonel Hawker's work, eighth edition, which is actually essential to any one wishing to become a wildfowl pursuer, were it even at double or treble the price it costs. In this book may be seen, plans and elevations almost endless, and every one extremely well executed, exhibiting each variety of vessel that is used, from that under the denomination of the *light punt*, just noticed, *to one* of a size and substance to carry two staunchion guns of seventy or eighty pounds. To facilitate the gunner when obliged to walk over the oozes, mud-pattens or mud-boards are used, and may be seen figured, together with the punt and the leaded stick and paddles, at p. 350. of the colonel's work, eighth edition. It is however worthy of remark, that this method of reaching wildfowl by means of a launching punt, had an unfortunate effect on the birds by driving them in a great measure from the Lymington shores to Poole Harbour and other localities, where the mud will not admit of "launching." Several other modifications of the launching punt, also in use on the coasts, appear; for figures of which, and explicit directions with regard to the proper methods of using them, we would refer the inquirer to the same work, premising for his information, as regards these very necessary vessels, that the principal varieties, and the most important among them, are the launching-sledge, the Sussex mud-boat, the Poole canoe, and the new light punt which is still more highly praised by our director-general than the others. To these figures and descriptions are appended important general instructions for the practice of sea-coast shooting afloat; on which subject, having already descanted, we shall only add a few other practical hints from the colonel's code, in aid of our own matter which is to follow.

2756. *Shore shooting of curlews, plovers, &c. &c.* We have already given a description of a number of interesting birds, which, it may be said, are claimed both by the sea and the land; and we have given practical directions from our own shooting, how to bring them to bag. Now, as these birds begin to move from their summer quarters (from whence we have already been instructing the sportsman how to disturb them for his amusement and his profit), they assemble towards the latter part of October on the oozes and mud shores, some weeks before the great flights of the birds, which constitute what we understand by the term wildfowl, or the web footed tribes arrive. Consequently there would be, were it not for them, a vacancy and a stop to the sport of the shooting zealot, particularly if he reside near the coast. In such case we would recommend that Colonel Hawker's ingenious method should be adopted. We however shall first premise, that the olden plan of pursuing them on a point at high water, or to use his own words, "on the edge of the mud, just as the tide begins to fall," does not succeed so well as formerly; for, as he humourously observes, "no sooner does the fall arrive than there is scarcely a point to be seen but what is garnished with the shock-head of some shore-popper or other." Since population has increased to the degree it has, and honest industry has given place to a love of pleasure and excitement; since that time, on the southern coast at the ebb of the tide the ground is generally occupied by shooters of the class we hint at; and consequently all attraction is lost to the gentleman gunner. On the Hampshire coast we have been describing, it is well known that at low water the oozes or mud shores are so flat, that even the curlews are washed off their legs by the flowing tide, before any regular shooter with a punt can find water to get to them. To afford his readers amusement, even in this exigence, this indefatigable sportsman says, "The plan I adopted a few seasons ago, was to make an island in the middle of the ooze where I was sure of the first shot, unless any one was there whose punt drew less water than mine, which happened not to be the case.

"The way to make an island that will stand the overwhelming south-westers, is this:—go at low water and drive strong poles, from nine to twelve feet long, into the mud, at about the interval usual for hedge-stakes, till they stand no more than two or three feet in height. Then make a hedge to inclose as much space as you may wish your gun to sweep. fill in your fence with faggots, well lashed on; and then cover them with mud, seaweed, and light gravel, taking care to leave a smooth up-hill surface, which your gun will play well upon, and without leaving any protuberance that would protect the birds from the shot. After your island has stood a few heavy gales, you will then see whether you have to replenish it or not; and when all appears to stand well, go and cut off your stakes level with the island, as they might otherwise wholly alarm the birds, or partly protect them from your shot. Let your island be completed a few weeks before the autumnal passage of the birds, and I'll warrant that the first heavy gale and spring tide will drive to it some home-bred oxbirds, if not curlews. These, provided they are not driven away by some premature tyro of a gunner, will bring down the birds of passage which migrate to the coast; so that, with the first *good tide* and very *high wind*, you may expect to see—not one particle of your island—but only the rug or carpet, as it were, which is formed by the innumerable birds that cover it." (*Instruction to Young Sportsmen*, eighth edition, p. 441.)

SECT. V. *The Pigeon, and its Natural History.*

2757. *Pigeons, both tame and wild,* have more claims on our attention than are apparent at first sight. So extensive is the distribution of this genus, that it is found in all the warm and temperate regions of the globe; and so numerous are the species which compose it as to exceed more than a hundred. As an article of commerce their worth is considerable, and as messengers they have conferred important benefits, by reaching distant destinations when the telegraph even was useless. The Society of Amateurs at Antwerp sent ninety carriers to Paris to fly for a prize. They were started from thence at seven in the morning, and by noon of the same day thirteen of them had reached home. This instinctive aptitude for domesticity has always marked them. Anacreon has immortalised them in his odes as the bearers of epistles. Taurosthenes sent to his father by these means the glad tidings of his success in the Olympic Games on the day it occurred. Pliny notices the communications kept up by pigeons at the siege of Modena. Ariosto (canto 15.) makes the Castellan di Damiata spread the news of Orillo's death all over Egypt. Sir John Maundeville, in the reigns of our second and third Edward, especially notices the value of the *colverees* in

China, for the transmission of letters on important occasions. Pigeons are also important in a commercial point of view, many thousand dozens being annually bred to supply the markets, and many to gratify the pigeon shooters' wants. Under this view, were there no other, the natural history of these popular and universally distributed birds must prove interesting to the lover of Nature as well as the sportsman. This family has more numerous varieties than most others, and no one is more extensively diffused than this, nor has any excited more inquiry, or encouraged more disputation. Among the best authorities vast differences have arisen as to their systematic placing among the winged tribes. Aristotle very early noticed five if not six varieties in the pigeon group. Pliny has floundered about them and their varieties until, getting lost, he contents himself with collecting a history of their habits. Belon notices *ramiers, tourterelles, bisets, pigeons-fuyards,* and *pigeons elect,* among the birds, "qu'on trouve viander indifféremment en tous lieux," placing them between the wry neck and the blue thrush. Gesner arranged them between the gallinaceous birds and the bustards. It would however be endless to enumerate the different niches they have occupied in the arrangements of our most eminent ornithologists, which in our opinion tends to heighten their real importance, by showing how intimate and extensive are their connections. Le Vaillant has been, however, complimented as the first who arranged them into three well defined sections: the first contained *colombes, ramiers,* and *tourterelles;* the second the *columbars;* and the third the *colombi-gallines.* Linnæus placed them among the *passeres,* or sparrows; and his reason for so doing was the great analogy between them,— both pair in the season of love, both work jointly in making the nest, and take their turns in sitting. To this placing we cannot bow, the gallinaceous birds are almost all polygamous, a habit unknown among pigeons. The first lay many eggs, the pigeons usually only two; but a more essential difference in the pigeon from the gallinaceous birds is, that its posterior toe is articulated at the bottom of the tarsus, on the same plane as the anterior toes. (See our figures of the *ringdove* and *stockdove,* p. 928. 930.) In the gallinaceous birds, on the contrary, the hind toe is articulated much higher than the plane of the other toes. At the present time, however, our highest authorities incline with Cuvier and Illiger, to consider the pigeon tribe as a sub-division of the gallinaceous kind. "The family of *Columbidæ,*" says Mr. Vigors (*Linn. Trans.* xiv. 410.), alternately arranged by systematic writers among the perching and gallinaceous orders, and not unfrequently grouped as a separate order between the two, at once indicates where the point of junction exists between them. These birds, although we have the high authority of Linnæus for uniting them with that division of our perchers, which form his *passeres,* I do not hesitate in arranging, conformably to the opinion of MM. Cuvier and Illiger, as a sub-division of the gallinaceous birds."

SUBSECT. 1. *Pigeon-match Shooting.*

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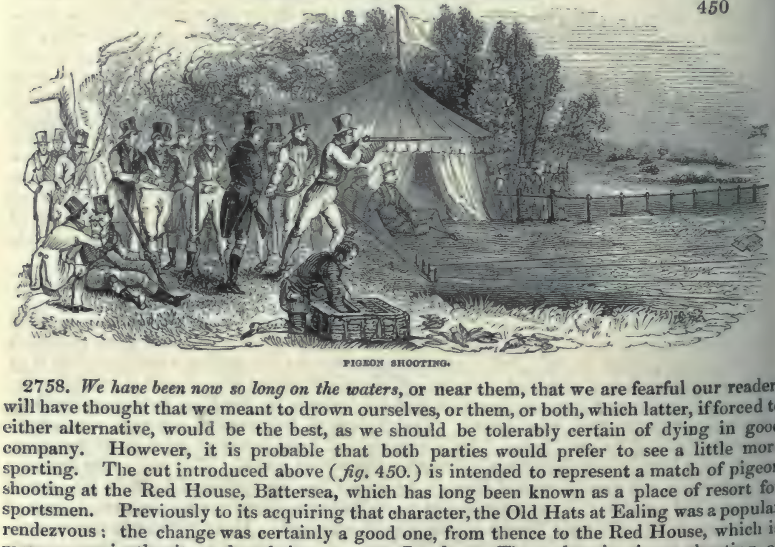

PIGEON SHOOTING.

2758. *We have been now so long on the waters,* or near them, that we are fearful our readers will have thought that we meant to drown ourselves, or them, or both, which latter, if forced to either alternative, would be the best, as we should be tolerably certain of dying in good company. However, it is probable that both parties would prefer to see a little more sporting. The cut introduced above (*fig.* 450.) is intended to represent a match of pigeon shooting at the Red House, Battersea, which has long been known as a place of resort for sportsmen. Previously to its acquiring that character, the Old Hats at Ealing was a popular rendezvous: the change was certainly a good one, from thence to the Red House, which is more conveniently situated, as being nearer to London. The zealots in pigeon shooting, of which there are many among the wealthy and influential, are loud in praise of this sport, and consider it as the perfection of the art of shooting flying. Nor is it possible to avoid being struck with admiration at the certitude of the eye and the sympathetic readiness of the hand to follow its guidance in arresting the progress of flight in a bird so notoriously rapid in its motions as a healthy pigeon when flying for its life. But when we are told, that to become a ready and certain shot at game of all kinds, we must commence with pigeon shooting, and that, having gained a certain degree of proficiency in that practice, success in the other varieties follows as a matter of course, we dissent, and we do it from much inquiry and much observation. We are more inclined to think with Mr. Daniel, that "shooting of pigeons and of game is so widely different, that a person may almost always strike his bird from the box, that scarcely ever makes shift to hit it when rising from the bush, unless a pointer ascertains to an inch from what spot he may expect the bird to spring. No method is so advantageous in learning to shoot well as acquiring it by practising it at game: the pigeon from the trap glides off in silence, and not a nerve is discomposed by the smallest alarm; but in the field, where the partridge or pheasant rises with all the vigour of an animal exerting his powers to preserve life and liberty, the consequent sound of their pinions in their ascent into the air, which is always attended with considerable noise, will perhaps create more of that trepidation (which, when possessed even in a trifling degree, effectually deters from steadiness in shooting), than if the shooter had never accustomed himself to fire at objects whose flight is so dissimilar. Many young shooters exercise their skill at swallows, swifts, and martins; but the flight of these is so irregular, and unlike that of every other bird which the sportsman pursues, that even a certainty of killing them (which, by the way, a despicable bad shot may acquire a knack of doing by seizing a particular moment when they are just upon the turn, and are for an instant stationary), does not at all forward their dexterity in bringing down any other species of game." (*Rural Sports*, vol. iii. p. 363.) Mr. Daniel also observes on it, that "as a mode of shooting to bet large sums of money upon pigeon-match shooting is perhaps the least objectionable, since every shooter has an equal chance as to the distance from whence the bird is sprung; but it certainly is not exactly the kind of shooting that a sportsman will ever try or fancy as an amusement." (*Ibid.* p. 362.) A decided favourer of this sport observes, that "whatever degree of utility may otherwise attach to it, pigeon shooting has the further merit of annually delivering some hundreds of miserable birds from the clutches of metropolitan blackguard fanciers by whom they are too often kept in an unnatural and torturing state of confinement. Indeed, their carriage in sacks to the place of execution is no mitigation of their tortures, yet happy are those which there find their *quietus*. Farther, it is an Englishman's sport, since it is a free one, in which a man may exercise his gun although of the unprivileged class." (*Sporting Annals*, p. 237.)

2759. *Of the exact time when pigeon-match shooting came into vogue* we have no authentic records, but we can distinctly trace it to more than half a century back. The *Old Sporting Magazine* for Feb. 1793, names it as in general practice at that time; and as the account given of the mode of conducting it then assimilates much with that pursued now, it may not be uninteresting to the reader to have it laid before him:—"The great celebrity of this sport, in which some of the first shots in England are so frequently engaged, encourages us to communicate an account of its fashionable influence and increasing prevalence, as a subject entitled to a place in our sporting detail. Matches coming under this denomination are of two kinds, — the first are supported by private subscription, amongst such gentlemen only as are members of their distinct and separate clubs. Others of an inferior complexion come on, or take place, by public contribution from candidates of every description, and are generally excited and brought about by the landlords of inns, who offer prizes of pieces of plate, purses of sovereigns, &c. &c. to be shot for. This practice of pigeon-match shooting is also common in almost every part of the kingdom, but in none is it so frequently repeated or so fashionably followed as in and around London. In the counties of Buckinghamshire, Berkshire, Hampshire, and Surrey, it is patronised, where at this season of the year it is in perpetual succession at one spot or another. Having proceeded thus far in our general account, it becomes us now to enter on such a description of the sport as may render it perfectly easy of comprehension to those who have never had an opportunity to be present at so earnest a struggle for superiority. In direct conformity with propriety, we advert first to the match, as it is generally made and decided between a given number of gentlemen from different clubs opposed to each other, or members of the same club, when, by tossing up for the first choice, they continue to choose in rotation till the party is completely formed, which may be contracted or extended to any number required for the convenience of the company intending to shoot. The match thus made, and the names of the opponents arranged upon paper by the arbiter, the sport begins in the following way: —

2760. "*Several dozens of pigeons having been provided for the purpose* are disposed in baskets behind the company, there to wait the destructive crisis, the 'deadly level,' that dooms them to instant death, or gives them liberty. A shallow box of about a foot long and eight or ten inches wide, is sunk in the ground parallel with the surface, and just twenty-one yards from the footmark at which each gunner is bound to take his aim. The box has a sliding lid, to which is affixed a string held by one appointed to that office, who is placed next the person going to shoot, from whom he takes the word of command for drawing the string whenever he is ready to take his aim, another pigeon being so expeditiously placed in the box, for the succeeding shot stands ready (by the runners that furnish the pigeons), that ten, twelve, or fifteen dozen of pigeons are deposited in the box, flown, and shot at in much less time than it is possible to conceive. The gunner is not permitted to put his gun to his shoulder till the bird is on wing; and the bird must fall within one hundred yards of the box, or is deemed a lost shot. During this rapid succession (one of each side shooting alternately), the arbiter is employed in pencilling opposite to each name the success of every individual, by A 1, or A 0; this, at the end of the match, denotes the superiority, by demonstrating which party has killed most pigeons at the least number of shots. Exclusive of the general betting upon the match, there is a variety amongst individuals — the shots of some against others, and the field betting of the bird against the gun, as fancy may prompt or the reputation of the gunner dictate. He that kills most pigeons in the match, at an equal number of shots with the rest, is by such preeminence the *captain* of the day, stands elected as chairman for the meeting, and does the offices of the table accordingly.

2761. " *Matches of an inferior description* are still more numerous, and generally come under the denomination of an help-ale, or make-feast, at the instigation of those industrious! liberal! landlords who advertise! three pieces of plate to be given to the three best shots! but at the moment of entering the lists, it becomes a collateral part of the contract, that each adventurer is to contribute his proportion towards the gifts of plate, to pay for his pigeons, and to dine at the ordinary. These matters properly adjusted, the shooting is carried on precisely in the manner before described, with this exception only, that here every individual shoots for himself alone, without any connection with party. The candidate killing most pigeons, at the least number of shots, becomes entitled to the piece of plate highest in value, and so in proportion: but in so great a number of candidates there is frequently an equality of success; in such cases they are called ties, and are shot off at remaining pigeons till the superiority is ascertained, and the victor proclaimed. This done, the day concludes with the same degree of festivity and superabundance as before described, but in a style of inferiority necessarily regulated by the pecuniary resources of the parties concerned. Looking however to its attraction as a matter of sport, little or nothing can be said in its favour when put in competition with the more noble and manly enjoyment of the sports of the field. The liberal mind feels a temporary repugnance at the idea of first confining, and then liberating from that confinement, hundreds of domestic animals doomed to instant death, with a very slender probability in their favour, when a moderate shot will bring down fourteen or fifteen, and some nineteen out of twenty. This picture affords but an indifferent idea of the sportsman's humanity who indulges largely in this species of gratification. And further, we presume to observe, for the information of the inexperienced, that it is the most infatuating and expensive amusement the juvenile sportsman can possibly engage in; for one day very seldom terminates without the appointment of a second; one extravagance as constantly engenders another, to the utter exclusion of economy, which is upon all similar occasions generally laughed out of countenance. Experience has also convinced us, that eight, nine, or ten pounds for pigeons, in addition to the bill of fashionable exorbitancies for the day (amounting to the inconsiderable reckoning of two or three guineas each), has sent many a pigeon shooter to his bed, and awakened him to the pillow of reflection."

2762. *The Red House* does not confine its amusements to such fly-away subjects as pigeons, but boasts also some heavier and equally entertaining scenes on the waters; for rowing matches are frequently got up here. It also possesses other advantages from its easily accessible situation, and offering the choice to gentlemen, either of going by water or land to the inclosure. " The above matches, of each kind, not only produce some excellent dinners provided by 'mine host' in first-rate style, but some capital convivial evenings likewise, which exhibit a very fine feature of the *spirit* and *game* which generally attaches to meetings of a sporting description, and more especially over 'the gaily circling glass!'" (*Pierce Egan's Book of Sports*, p. 372.) There are likewise some other places of resort, where pigeon-match shooting is practised. Chalk Farm used to exhibit a very respectable assemblage of pigeon-match shooters; but, *sic transit gloria mundi* — the North Western railway, and the modern villas and terraces bordering its route, have destroyed all the rurality and much of the sporting for which it was formerly renowned. Still, some pigeon and sparrow-shooting is carried on there. We shall in a subsequent page name some other places where the same entertainment is afforded.

2763. *Gold Cups* are not unfrequently shot for among the higher order of pigeon-match shooters, and in some instances one and even two thousand sovereigns are said to have been staked on a match; but these, like all pecuniary transactions in the present day, admit of considerable allowance being made for exaggeration. Undoubtedly there used to be matches made for large sums at the Red House; but these were in the palmier, more exclusive, days of pigeon-shooting, such as is described in the following account. On Monday 30th of June, 1829, the following we might almost say unparalleled shooting of pigeons took place in a sweepstakes made on the occasion of Captain Ross leaving town for the season. The parties were Lord Ranelagh, Captain Ross, Messrs. Osbaldeston, Grant, and Shoubridge; Lord R. and Mr. Grant receiving four dead birds in advance. The match came off a tie at the fifteenth double shot, between Captain Ross and Mr. Shoubridge. Captain R. and Mr. S. then shot the tie off. Capt. R. led, and killed his three double shots in succession; Mr. S. followed with the same success. Capt. R. in his next double shot missed one bird, and Mr. S. killed both his, and was declared the winner. This was considered by all amateurs present the best shooting ever witnessed, Mr. S. having killed the unprecedented number of ten double shots out of the last eleven, and the first bird of the eleventh, making twenty-one birds out of twenty-two. 1000*l.* to 100*l.* was offered, that no person can be produced to excel this performance. In the next year the Red House Inclosure was again honoured with the company of the principal performers of the last match to engage in another. These were Hon. Colonel Anson, Captain Ross, Messrs. Osbaldeston, and Mr. Shoubridge. At the commencement of the shooting the Hon. Col. Anson and Mr. Osbaldeston were the favourites, at five to four. Captain Ross made some of the most surprising double shots ever made on the ground; the distance was twenty yards with the five traps, at twenty-five double shots each. The betting was five to one, both birds being killed against both being missed. At the conclusion the numbers were, — Mr. Shoubridge, twenty-seven; Capt. Ross, twenty-six; Hon. Col. Anson, twenty-five; Mr. Osbaldeston, twenty-four. The betting on the next day's shooting was in favour of the Hon. Col. Anson. The match was fired with shot. Two matches were then shot by Capt. Ross and Mr. Osbaldeston, at thirty yards, with the five traps, at twelve birds each. Capt. Ross was the winner of both matches, having killed ten out of twelve. The matches were shot with Eley's improved cartridges, the shooting of which was most excellent, and gave to the gentlemen great satisfaction. Did our limits permit, we might add to these other extraordinary performances of a like kind, but as they do not, we recommend the reader for a more full detail to that amusing olio, known as *Pierce Egan's Book of Sports*, from which we have drawn some of our notices. Our memoranda also notice the shooting exploit of a gentleman of Nottingham, whose name we are not in possession of. He was to shoot at and hit penny-pieces to the number of twelve, and small stones six, which were to be thrown up successively, which match he accomplished in this manner: —

1st	shot,	penny-piece	hit with	7 corns.
2d	-	-	-	17
3d	-	-	-	13
4th	-	-	-	35
5th	-	-	-	17
6th	-	-	-	9
7th	-	-	-	7
8th	-	-	-	2
9th	-	-	-	21
10th	-	-	-	9
11th	-	-	-	7
12th	shot,	penny-piece	hit with	13 corns.
13th		halfpenny	-	1
14th	-	-	-	7
15th		small stone	-	6
16th	-	-	-	9
17th	-	-	-	12
18th	-	-	-	10
19th	-	-	-	13
20th	-	-	-	8
Averaging eleven corns ; total				223

To this expert marksman's exploits we would append those of the celebrated brothers, Richard and Edward Toomer, who, with their rifles and a single ball, killed eight pigeons out of twelve, shooting alternately; and one of the pigeons that did not drop, had a leg carried off by the ball. They likewise with a single ball struck twice, out of four shots, a cricket-ball thrown into the air; and Richard Toomer, at a cricket-match near Hartford Bridge, Hants, his gun being loaded with *shot*, struck the ball *twelve* successive times, when bowled by Harris, known as one of the sharpest bowlers in England; this Toomer deemed one of his best and most difficult performances. Richard Toomer is the person whom we have already named, as having trained a sow to hunt and stand to game. So thoroughly was shooting, both with gun and pistols, reduced to a science by the two brothers, that numbers of gentlemen became their pupils, and received instruction from them: nor was their knowledge confined merely to the use and effect of the gun; in hunting and fishing they were equally well experienced. To Mr. Richard Toomer's activity and resolution in securing some of the most desperate deer-stealers and poachers that infested the New Forest, the noblemen and gentlemen concerned in the preservation of the deer and game in that district can bear abundant testimony.

It may not be irrelevant to state, that the exploits which Mr. Richard Toomer performed in shooting with such apparent ease, soon convinced the persons who saw them that they were done methodically; and this was completely ascertained by his frequently suffering himself to be blinded with a double handkerchief over his eyes, after having taken his aim, and then to fire and hit a small object. Sometime previous to his death, he went to Moyles Court, near Kingwood, for a day's rook shooting; he made some trifling bet with Mr. Mist, that he killed more birds with his rifle and a single ball than Mr. Mist did with his fowling-piece and shot. The number of shots was limited to twenty. Mr. T. killed every shot, Mr. M. nineteen, who expressed his surprise at the event, remarking that, as the trees were very lofty, Mr. Toomer's eyesight must be superior to that of others. Mr. T.'s answer was, "I will convince you, my friend, there is not such wonderful eyesight required, and that what you have seen is not so difficult as you imagine:" he selected a rook, levelled his rifle, and then desired Mr. Mist to tie a handkerchief over his eyes, so that he was in perfect darkness: after this was done he fired, and brought down the bird; he reloaded, and repeated this a second time with the same effect, to the astonishment of many spectators. Mr. T. was satisfied that birds might be readily killed flying, with a single ball, if the lock to the gun was not too large, and the spring so tempered, that the mainspring and that of the hammer acted in concert, and that the fire was emitted freely, and the explosion of course instantaneous at the stroke of the flint. In improving gunpowder as to its quickness in firing, Mr. Toomer, after visiting different powder mills, and trying experiments in various parts of the process whilst making, had completely succeeded: the secret now remains in the family, and a considerable advantage is made of the sale of the powder so prepared. But it was not *fire-arms exclusively* that Mr. Toomer was so expertly versed in: the air-gun had from him received many improvements: he has killed fifty brace of bucks in one season with his air-gun, and was busied in adding to its further utility at the time when he died, which was at the early age of thirty-seven years, extremely lamented by all who knew him. (*Rural Sports*, vol. iii. p. 373.) Having ourselves lived in the country where the exploits of these celebrated marksmen were exhibited, and knowing that the accounts, surprising as they appear, are correctly stated, we are prompted to thus enlarge our detail. We presume that we hardly need to state, that the blue rock pigeon is that usually employed in this sport as the most quick and steady flyer.

2764. *Pigeon-match shooting*, as being pursued throughout all the year, gives it favour in the eyes of many. Neither time, season, nor locality, impedes it. It is practised in every part of the kingdom, but evidently thrives best in the neighbourhood of the metropolis and its circumjacent districts. Several of these present spots appropriated to the sport. Besides that of Battersea, the principal, meetings are also held at Brompton, Hornsey Wood House, the Edinburgh Castle, Stepney, Wade's Mill, and in many other localities of less note. The rules and regulations of the practice of pigeon-match shooting necessarily vary with the views of, and with the agreements made between, the contending parties. Sometimes a sweepstakes is entered into: occasionally matches are advertised as open to all England: in other instances the matches are confined to be shot between established members of a club, where now and then the shooters are handcapped by distance. Sometimes single, and sometimes double, guns are employed, according to the agreement previously entered into. The weight of shot to be used is arranged between the parties before the match commences: two ounces may be considered as the medium. The distance also is regulated in some matches by the calibre of the gun used.

2765. *Sparrow shooting matches* are also occasionally made; of late they have been frequent, and are advertised in *Bell's Life in London*. Chalk Farm, Hornsey Wood, and numerous other localities, have habitually been the scenes of the destruction of such small game. Leeds, Birmingham, Manchester, and almost all large towns, have their shooting-grounds, generally the property of the licensed victuallers, where the feathered tribe suffer an apparently exterminating slaughter.

SUBSECT. 2. *Wild Pigeons.*

2766. *The ringdove, cushat or queest* (*Columba Palumbus* Linn.), is the most popular bird among sportsmen of the dove varieties. Colonel Montague says of it, that "it weighs about twenty-two ounces; length eighteen inches. The bill yellowish; the head, coverts of the wings, and scapulars, are of a deep bluish ash colour; the neck and breast vinaceous, beautifully glossed with green and copper colour, changeable in different lights; on each side of the neck is a large patch of glossy white, which almost joins behind; the back and tail ash colour, the latter black at the end; vent and thighs white, tinged with ash colour; the bastard-wing almost black, behind which a few of the coverts are white, forming a line down to the greater quills, which are dusky edged with white; the legs are feathered much below the knee, which, with the feet, are of a purplish red. There is little or no distinction in the plumage of the sexes; but the female is not quite so large. (*Ornithological Dictionary*, p 422.) Its nest, as every schoolboy knows, is rudely constructed. This bird is very

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THE RINGDOVE.

commonly known by name as the *wood-pigeon*, and may be described as the largest of the tribe; and further, as being as good to eat as it is difficult to approach. Many an one, however, have we in our youth brought down from the beech and oak trees of the large woods both of Herts and Bucks. The greater part emigrate at the beginning of winter, and return in the spring (some deny this; we do not, but on the contrary believe it); at which season they commence building their nests, usually at a considerable elevation, in the beech, oak, and other trees. Sixty or seventy years ago their numbers were almost incalculable, and their emigrations more confined, as their persecutions were less; but an increased population, a lawless thirst for pleasure and plunder, together with a felling of the large woods they used to rest in, have combined to drive great numbers away, never to return. Of late years, since the vast increase of turnips, that vegetable has furnished a great part of their support in hard weather; and the holes they pick in these roots are supposed to greatly damage the crop. From the turnips their flesh contracts a rancidness which occasions them at this season to be rejected by nicer epicures; but by filling the inside of the bird with bread, much of the disagreeable taste will be removed. Wood-pigeons are excellent guards against poachers; for the cabal they make effectually alarms the keepers, and prevents the poachers from using their air-guns, usually employed against the pheasants.

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WOOD-PIGEON SHOOTING.

2767. *Woodpigeon shooting* is still practised, but with little success in comparison with that we have noted as common formerly. A party examine a wood, and by the marks of the meetings of the birds they discover the spot of their usual roosting. The party have now to conceal themselves here and there, and to do it dexterously, exactly in the rear of the flight; and as one and all roost with their heads towards the wind, so it prevents either any rustling or any emanations from the gunners from reaching the birds, who are thus by the moon's light picked off with a moderate certainty; and if a double gun be used, a second effective shot may often be made. The sport can also be followed during the day with success, provided a turnip field be near the favourite wood they perch in. Behind some hedge, or behind an artificial hide, between the turnip field and their roosting place, one or two persons may secrete themselves, and probably obtain several shots at the birds, either as they go to or come from the turnips. On the nest of this bird Grahame says,

"So rudely is it formed,
That oft the simple boy, who counts the hours
By blowing off the dandelion flowers,
Mistakes the witch knots for the cushat's nest."

2768. *The stockdove* (*Columba Œnas* Linn., *fig.* 453.). We approach this subject not without fear that we are in error with regard to its correct denomination. If we really do err, our only consolation is, that we do it in good company; for this bird, or at least his variety of denominations, has been a stumbling-block to numbers. Bewick calls it the wild pigeon; Colonel Montague, the rockdove or rockier; and he remarks on it, that "Ornithologists seem to differ in opinion concerning the rock and the stockpigeon, though it appears almost impossible to conceive them a distinct species. In those described under such names there seems to be so much similitude, except what may be expected from a species half reclaimed, and frequently returning to their natural wild habits again, that we cannot but consider them as one and the same species." (*Ornithological Dictionary*, p. 425.) Bewick partaking of this incertitude says, the stockdove, rockpigeon, and woodpigeon, with some small differences, may be included under the same denomination. We certainly think the same with regard to the rock and stockdove, but we cannot so readily yield our credence to the assimilation of the woodpigeon with our domestic pigeons, because no efforts made could ever produce any sexual intercourse between them, although the woodpigeon has been known to roost with them. His determinate size also, from which we have never seen him vary, is contradictory to such a presumption. Of the shooting of these birds we have little to say, as we have not seen them in congregated multitudes, except when they were preparing to emigrate. We have occasionally pulled one down when winging his way from wood to wood; and we can assure our readers that he likewise makes very toothsome food.

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STOCK-DOVE.

2769. *The turtledove* is an elegant minikin pigeon, which visits us in the spring, and remigrates in September. As there is much reason to believe that these birds visit us principally to breed in our woods and groves, we would plead for them, not only by words but by example, for many a one has passed us in the fields quite within shot without our interference; and as we can assure the reader that we never did either hit or shoot at one, so we do think we may request the same forbearance from him. It is but a morsel, weighing only six ounces, is of very pleasing colours in its plumage, particularly the male. It is rather circumscribed in its localisation; we have frequently seen it in the Isle of Wight. In Kent they are also said to be more plentiful than in any other county, where they are observed to visit the pea-fields very assiduously. They have also been seen in small flocks in Romney Marsh; but this must have been either soon after their arrival or a little before their departure. Turtledoves incubate in the deep recesses of woods, and make a true pigeon's nest, circular in form, but very loosely put together in material. The largest and longest twigs are laid as a foundation, and upon them others of smaller dimensions; in this nest are laid two white eggs, which being hatched, the young are assiduously attended by the parent birds. This pigeon, in common with others of this vast family, is able to supply, if not lactiferously, at least a very nutritious secretion from glands near the crop, with which it feeds its young. This secretion, as we have elsewhere observed, renders the supposed wittiness of *sending an unlucky wight for pigeon's milk*, a self-stultification on the part of the sender.

"A variety of the common turtle has been described by the name of the spotted necked turtledove (*Lath. Syn.* vol. iv. p. 645. pl. 40. *a.*; *Ind. Orn.* vol. ii. p. 606. pl. 47. *β.*) The difference consists in the whole side of the neck being black, and instead of those feathers being tipped with white, there is a round spot of white on each, very near the end. Dr. Latham says this bird was shot in Buckinghamshire, and that he observed one of these amongst some birds that came by the last expedition to the South Seas; but as it was in a parcel wherein were some which belonged to the Cape of Good Hope, it is possible that this might come from that place." (*Ornithological Dictionary*, p. 524.) Temminck says, "The bastard produce of the common wild turtle (*Turtur communis*) with the turtle of the aviary (*Turtur Risorius*), has been proved by frequent experiments to be barren, although the two species from whence it originates appear to be closely allied, and a mixed breed is easily procured; and such, we have no hesitation in saying, would be the event, if a cross could be obtained between the common pigeon and the ringpigeon, the woodpigeon, or any other species." These observations are well worthy of attention. The assertion respecting the bastard produce of the turtles made above, is corroborated by MM. Boitard and Corbié, in their *History of the Pigeons de Volière.* (*Penny Cyclopædia*, vol. vii. p. 372.)

SUBSECT. 3. *Rook Shooting.*

ROOK SHOOTING.

2770. *Rook shooting* (*fig.* 454.), if it be out of the pale of *field* sports, is yet strictly within that of *rural* sports; and if the cynic should tell us that we cannot call it the shooting of game, we reply that it is nevertheless a very pleasant game to shoot at. The rook Bewick describes as being about the size of the crow; which latter bird, however, wants much of that metallic lustre that shines on the plumage of the rook. A scabrous rough whitish skin extends from the root of the bill and nostrils as far as the eyes; and this marking is accounted for, from their habit of sinking their bills deep in the ground, in search of the erucæ of the chafer and other coleopterous insects, which destroy the roots of corn, grasses, &c. Thus, where extensive rookeries have been destroyed, it has happened that the next year the increase of the hedgechafer, or, as some call it, the cockchafer, has been so abundant (as happened in Ireland in the year 1747), that almost a famine was the consequence. It has been thought that the scabrous marking above the bill is not natural, but the effect only of the friction in digging it into the ground. We will, however, not venture peremptorily to deny, that were any mode to be devised by the rook to feed itself, that the scabrous mark might in such case not become conspicuous; but this we can affirm, that some tame rooks brought up from the nest, and artificially fed by hand, still exhibited the base of the bill rough and approaching to a white colour. Rooks build in communities, usually in tall trees, and very frequently around mansions, large farms, and churchyards. Occasionally, however, they are found to build in trees not lofty, and that by choice. It is hard to divine the reason for it, but they have showed much predilection for a London residence. They formerly used the trees of the Temple Gardens as a building site, and in the gardens of Carlton Palace they did the same until the trees there were cut down, when they removed to the trees behind New Street, Spring Gardens.

" Some years ago there were several large elm trees in the college garden behind the Ecclesiastical Court, Doctors' Commons, in which a number of rooks had taken up their abode, forming in appearance a sort of *convocation* of aërial ecclesiastics. A young gentleman who lodged in an attic, and was their close neighbour, frequently entertained himself with thinning this covey of black game by means of a crossbow. On the opposite side lived a curious old civilian, who observing from his study that the rooks often dropped senseless from their perch, or, as it may be said, without using a figure, *hopp'd the twig*, ' making no sign,' nor any sign being made to his vision to account for the phenomenon, set his wits to work to consider the cause. It was probably during a *profitless* time of peace, and the doctor having plenty of leisure, weighed the matter over and over, till he was at length fully satisfied that he had made a great ornithological discovery, that its promulgation would give wings to his fame, and that he was fated by means of these rooks to say

' Volito vivus per ora virum.'

His goosequill and foolscap were quickly in requisition, and he actually wrote a treatise, stating circumstantially what he himself had seen, and, in conclusion, giving it as the settled conviction of his mind, that *rooks* were subject to the *falling sickness*." (*Every Day Book*, i. 494, 5.)

2771. *The crow* is not a model of the rook. The bill of the former is more arched; and its tail feathers are less rounded than those of the rook. The last year's nest is again made use of, and trimmed up and put into fresh order; and where a robbery has been committed, the stolen pieces are replaced with new ones. Bewick says they will rob each other when they can: and it is to be regretted that few rookeries are peaceable, something or other always occurring to call up fierce contention among them. A few *Johnny Newcomes* will frequently occasion terrible warfare in the colony, which is seldom settled but by the expulsion of the intruders.

2772. *Rook shooting.* When the young birds are able to leave the nest, which occurs earlier or later in May, according to circumstances, they are usually seen sitting round the edge of the nest awaiting the visit of the parent bird to feed them. Every day they may be observed to gather strength and to become more active, hopping from bough to bough, and now supporting themselves with their wings, when unbalanced by the wind or their own exertions. It is now that they are assailed with the crossbow, the boltbow, or with the bow and arrow, which, making little disturbance, does not injure the rookery, and finds practice for the younger as well as more experienced sportsman. The air-gun still finds favour in some eyes, but it requires caution and much experience in the user. Jackson's patent steel crossbow is now in request for this sport, and, no less so, that of the ingenious Mr. Braggs, of Holborn, figured and described at p. 146., with full directions for its use. Of course these are principally employed in firing at the sitting birds. The *élite* among the shooters, however, take the birds on the wing, with either the common shot gun loaded with No. 5. shot, or with Eley's patent shot chargers, or some use the rifle, and even thus bring them down with precision. Such are the sports of rook shooting, and when the birds are strong on the wing it offers very pleasing diversion; and although we cannot say that rook pie equals pigeon pie, yet we were always content to partake of it, particularly when it was the produce of our own, or the united labours of a friendly rook shooting party.

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ROOK SHOOTING.

SUBSECT. 4. *Redwing, Fieldfare, and Lark Shooting.*

2773. *Redwing, fieldfare, and lark shooting,* although minor sports, yet serve to circulate our blood in frosty weather; and, beyond that, to give us exquisite morsels as edibles. Both the fieldfare and the redwing interest us much, both by their external beauty and the regularity of their appearance among us, the redwing being a little in advance of the fieldfare; and both act as heralds in proclaiming the approach of the woodcock. The redwing (*Turdus Iliacus* Linn.) is about eight inches long, and weighs nearly two ounces and a half. It is in plumage not unlike the thrush, but is distinguished from it by a considerable white streak over the eye. It is a winter visitor, and leaves us in the spring, emigrating to Norway and Sweden, where it is prized for the sweetness of its song, and formerly was fattened for, and then transported to, Italy for the Roman epicures, being indeed a delicate morsel. It is like other flock birds most approachable in very hard weather, but even when a flight is on the ground we have, as with fieldfares, always observed one or more scouts posted aloft on some tree top to give notice of the advance of an enemy.

2774. *The fieldfare* (*Turdus Pilaris*, Linn.) in length rather exceeds the redwing, being ten inches long and seventeen broad, and weighs near four ounces. Its yellowish black tipped bill and its whisker, or mouth hairs, are observable characters: its head is of a light ash colour and its rump also: its breast, spotted as it is with dark markings, adds much to its gaiety of appearance. It arrives in October in prodigious flocks; and when the weather is very hard is tolerably approachable, so as to be shot in numbers from the bushes. They may likewise be approached when a flock has settled on the ground in search of food; but having even then a scout perched aloft, it is prudent to have a fixed hiding-place, from which they may be fired at. We used on such occasions not to leave our hide after our shot, but waited, and it usually happened that the same flock again descended in the same place, or so near it, that we could take another shot. Mr. White has remarked, that it is somewhat surprising that, so very similar in habits, &c. &c., as the fieldfares are to blackbirds and thrushes, they should never breed together in England. Another singularity in their habits is, that whereas they sit in lofty trees and tall hedges during the day, they prefer to roost on the ground at night; and hence they are so often taken in the nets swept over the stubbles and meadows by night netters. The redwings, on the contrary, are often taken by bat fowling nets from the hedges in which they roost.

2775. *Lark shooting* is an amusement that we presume most of our sporting readers have at some period of their lives engaged in, particularly in winter, when a moderate fall of snow at once congregates these birds in vast flocks, and sends them into the stubble fields in search of food. Very few morsels excel larks in flavour. The lark (*Alauda Arvensis* Linn.) is about seven inches long, and wears a general tint of rufous brown, more lively in some parts of the body than in others, but pleasing in all. It bears, also, on the crown of the head, a set of feathers rather longer than the rest, which it erects at pleasure. Mr. Mudie says, "The lark selects her ground with care, avoiding clayey places, unless she can find two clods so placed as that no part of a nest between them would be below the surface. In more friable soils she scrapes till she has not only formed a little cavity, but loosened the bottom of it to some depth. Over this the first layers are placed very loosely, so that if any rain should get in at the top, it may sink to the bottom, and there be absorbed by the soil. The edges of the nest are also raised a little above the surface, have a slope outwards, and are, as it were, thatched. The position in which the bird sits is a further security; the head is always turned to the weather; the feathers of the breast and throat completely prevent the rain from entering the nest at the side, while the wings and tail act as pent-houses in the other parts; and if the weather be violent, and the rain fall at a small angle with the horizon, the forepart of the bird, upon which the plumage is thickest, receives the whole of it." (*British Naturalist*, ii. p. 118.) Grahame on the same subject says,

> "The daisied lea he loves, where turfs of grass
> Luxuriant crown the ridge; there, with his mate,
> He founds their lowly house of withered herbs
> And coarsest spear-grass; next, the inner work
> With finer and still finer fibres lays,
> Rounding it curious with his speckled breast."

It generally lays four eggs, which are a little larger than those of a titlark, and which it deposits in May, but if any thing happens to frustrate its purpose, it has been known to lay as late as September. Few are aware of the importance of this bird as an edible in some countries. Doctor Latham remarks, that the duty paid at Leipzic for larks amounts to twelve thousand crowns per annum, at a grosch, or twopence halfpenny, for every sixty larks; we may therefore suppose how extremely plentiful they are there. In shooting these birds what we have already said contains nearly all that is necessary, except that when it is practised in a snow, it may be well to hint that in home fields it is an excellent lure to sweep away the top snow and then to sprinkle chaff over the swept surface. We will suppose one of an area of twenty yards: if the weather be not sufficiently severe to have tamed the birds, do this in such a manner that a hedge shall intervene between the marksman and the larks. By this method many other birds may come within the line of aim, and the sport may be also carried on at slight intervals during the whole of the day. It is in this way that in very severe winters wood pigeons also are brought to bag. We have seen a field in Hertfordshire studded with them, intermixed with larks, fieldfares, sparrows, and in fact with all the grain-eating tribes; at the same time we knew a gardener in Kent who so lessened a large team of wildfowl that visited his cabbages, as eventually to leave but three or four alive. It is however only in frosts of great length and intensity of cold that such scenes are met with.

Our own natural attachment to animals in general has prevented any wanton waste of life; and it has been in pursuance of our wish to imbue others with the same feelings, that we have so often and so strongly recommended to the sportsman to mix with his field pursuits the study of Natural History as an acquirement that would tend to lessen his desire for destruction, and increase his ardour in forming a more interesting acquaintance with the objects of his pursuit, than that of enrolling them among the number of victims in his game list. "In Natural History," says Mudie, "and more especially in the natural history of birds, which, from the fleetness of their aërial motions, carry the mind more readily and directly over the general map of the earth than any other class of the earth's productions, this inversion of the order of Nature — this substitution of the end for the beginning — is peculiarly hurtful, and must be the cause why people, even well informed otherwise, know so very little about the nature and habits of those species which are before their eyes every day, and which appear to come for the express purpose of being observed and studied. Take, as a familiar instance, the common redbreast, and ask your next neighbour when and where it builds its nest, what are the number and colour of its eggs, how long the incubation lasts, how the young are fed, and on what, and the chances are many to one that you do not get direct answers; and if you do, they are the second-hand answers of some one who has written a description of the bird, which, if original at all, has most probably been obtained from observations in a climate differing from yours, and therefore is not quite as accurate as the description of your redbreast. Carry your interrogations a little farther: ask what is the geographical distribution of the bird? what are its uses in the general economy of Nature? and you will find the answers still more difficult to be obtained, as well as more unsatisfactory in the few cases where you can obtain them." (*Natural History of Birds*, p. 21.)

2776. Subsect. 5. *We append a list of London Gun-makers for* 1858, *extracted from the Post-Office Directory.*

Adams. Henry, 54. Gray's-inn-lane, Holborn.
Adams, Robert, Henry-street, Bermondsey.
Ashton, Mrs. I., Swallow's-gardens, Goodman's flds.
Baker, Elizabth. and Son, 7, Union-street, Whitchpl.
Baker, Fred. Thos., 88. Fleet-street.
Barnes, Frederic, and Co., 109. Fenchurch street.
Barnett, John Edward, and Sons, 134. Minories.
Beattie, James, 205. Regent-street.
Beckwith, Hy., 33. Fieldgate-street, Whitechapel.
Beckwith, William A., 58. Skinner-street, Snow-hill.
Bishop, Wm. (agent to W. Richards), 170. New Bond-street.
Bissell, Thomas, 75. Tooley-street.
Blake, John Alkin, and Co., 35. Upper East Smithfld.
Blanch, John, and Son, 29, Gracechurch-street.
Blissett, John, 322. High Holborn.
Bond, Edward and William, 142. Leadenhall-street, and Hooper-square, Goodman's-fields.
Boss, Thomas, (*patent*), 73. St. James's-street.
Chambers, John, 46. Lambeth-street, Hooper-square.
Cogswell, Benjamin, 224. Strand.
Colesby, Ephraim, 1. Black Horse-alley, Fleet-street.
Colt, Col. Saml., (*patent*), 14. Pall-mall; and manufactory, 27. Chandos-street.
Cressall, Wm., 45 Bedford-row, Holborn.
Deane, John, and Son, 30. King William-street, City.
Denyer, Bernard, 131. Holborn-hill.
Dickinson, Herbert, 2. Little Prescot-street.
Egg, Durs, 4. Colonnade, Pall-mall.
Egg, Henry, 1. Piccadilly.
Fairman, James, 23. Jermyn-street.
Fisher, Charles, 8. Princes-street, Soho.
Fisher, William, 9. Belvedere-crescent, Lambeth.
Fuller, George, 280. Strand.
Gilks, Charles Henry, 3. Union-row, Tower-hill, and 67. Minories.
Golding, Wm., 3. Mount row, Berkeley-square.
Greener, William, (Daniel Beale Harvey, agent), 42. Ely-place, Holborn.
Grey, William, 41. Old Bond-street.
Groom, Richard, 10. Wellington-passage, Stepney.
Harold, Victor, and Co., 9. Green-st., Leicester-sq.
Hast, Friedrich E. D., 18. Aldermanbury.
Heptinstall, Wm., and Son, 18. Swan-street, Minrs.
Holland, James, and Son, 44. Gt. Prescot-street, and 44. Tenter-street, south, Goodman's-fields.
Holland, Harris John, 9. King-street, Holborn.
Höller, Albert and Edward, 16. Gresham-street.
Jackson, Rd., 30. Portman-place, Edgeware-road.
Jackson, Thos., 29. Edward-street, Portman-square.
Keen, Job, and Son, 61. Glo'ster-st., Coml.-rd., east.
Lancaster, Charles, William, and Alfred, 151. New Bond-street, and 2. Little Bruton-street.
Lang, Joseph, 22. Cockspur-street, Charing-cross.
Leigh, John, and Son, 1. Duncan-street, Whitechpl.
Ling, William, 61. Jermyn-street, St. James's.
London Armoury Company (limited), (Robt. Adams, manager; Thos. Finlayson, sec.), Henry-street, Bermondsey-street.
London, Edward, 51. London-wall.
Malherbe, Prosper, and Co. (Rochussen and Co., *agents*), 13. Gt. St. Thomas Apostle, and 75. Cannon-street west.
Manton, John, and Co., 4. South-st., Grosvenor-sq.
Manton, John, and Son, (*patent*), 6. Dover-street.
Marnes, John, 7. Kennington-row.
Mason, Rt., 47. Tenter-st., south, Goodman's-fields.
Moore, William, and Co., 43. Old Bond-street.
Moore and Woodward, 64. St. James's-street.
Needham, Joseph, and Co., 26. Piccadilly.
Nock, Samuel, 116. Jermyn-street, St. James.
Parker, Field, and Son, 233. High Holborn, and 58. Mansell-street, Goodman's-fields.
Parkin, Mrs. C., 3. Marylebone-street.
Potts and Hunt, 32. and 33. Leman-street, and 27. Tenter-ground, Goodman's-fields.
Pritchett, Robert Taylor, 86. St. James's-street, and factories, 59. Chamber-street, and 24. Gt. Prescot-street, Goodman's-fields.
Proctor, William, 82. Leman-street.
Purdey, James, 314½. Oxford-street.
Reed, Archibald, 5. Fountain-place, City-road.
Reilly, Edward M., (*air*), 502. Oxford-street.
Reilly, Joseph Charles, 502. Oxford-street.
Richards, Westley, (W. Bishop, agent), 170. New Bond-street.
Riviere, Henry, 2. Davies-street, Berkeley-square.
Roberts, Geo., jun., 17. Gt. Chapel-st., Oxford-st.
Roberts, John, 6. Little Chapel-street, Soho.
Rutter, William, 48. Aldenham-street, Somers town
Smith, John, and Son, (Henry Adkins, agent), 4. Thavies-inn, Holborn.
Smith, Samuel, and Chas. 64. Princes-street, Soho.
Smith, Thomas, 13. Little Compton-street, Soho.
Spearman, J., 25. and 26. Chamber-st., Gdmn.'s-flds.
Stapp, Richard, 16. Road-side, Mile-end.
Stringer, William, 86. High street, Camden-town.
Sturman, Benjamin, 45. Kingsland-road.
Sturman, George, 4a. Church-row, Islington.
Tatham, H., 37. Charing-cross.
Turney, Hy., 2. Jamaica-ter., West India Dock-road.
Whistler, Edward, 11. Strand.
White, E., 3. Worcester-street, Old Gravel-lane.
Wilbraham, John, 5. Pavilion-terrace, Battersea.
Wilkinson and Son, 27. Pall-mall.
Witton, Brothers, 21. Great St. Helen's.
Witton and Daw, 57. Threadneedle-street.
Yeomans, Mrs. Elizabeth, Tenter-street, west, Goodman's-fields.

PART VIII.

FISHING.

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THE ANGLER EQUIPPED.

2777. Oh, for the spirit of Izaac Walton, to paint the charms of angling in their true colours! To write of angling, for the pleasure and instruction of the angler, is indeed a delicate task. On no subject is a stranger to the craft more instantly detected. It is a recreation, with a spirit of its *own*. Piscator '*nascitur, non fit.*' But let it not be deemed impertinent if we premise somewhat concerning the *objects* of our sport: their classification, habits, and organic construction. Walton, too, was a naturalist; though Linnæus and Cuvier were as yet unborn.

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CHAP. I.

THE NATURAL HISTORY OF FISHES.

2778. *Fishes form so large and so important a proportion of the animal kingdom*, and exhibit so much to interest us in their structure, habits, and instincts, that we shall be forgiven for entering into this branch of our art in some detail. Such knowledge adds a keener zest to sport. But it is to be lamented that to the study of ichthyology, or the knowledge of fishes, are added numerous obstacles which can hardly be said to belong to the other branches of zoology. The patience and exertions of man have enabled him to do much: by his enterprise he has been led to follow the wildest of the *Mammalia* into their retreats, and if he cannot yet entirely wing his aërial flight with the feathered race, he can still traverse the region of their wanderings by the sight, and can thus determine many of their habits. His leisure will enable him also to gain acquaintance with the forms and habits even of the wildest tribes, by forcing them into domestication with himself. But with the greatest efforts the element in which fishes live is in a great measure closed to him; no human invention can reach the depths of the ocean to critically observe the forms and manners of its inhabitants. With them our acquaintance under the most favourable circumstances is confined to transient glances, or to observations always made under disadvantages not easily overcome: nevertheless, the perseverance of the naturalist is triumphing over these obstacles by the invention of marine and fresh-water *Aquaria*. Our labours will commence by offering the systematic classification of fishes into orders, genera, and species, both of Cuvier and Linnæus. *Divide et impera.*

2779. *A systematic account of the nature and properties of fishes* is termed *Ichthyology*, and this constitutes so delightful a study to the angler, that we cannot proceed without a few remarks on the connexion of this with the objects of his pursuit. The numerous arts of fish to frustrate the fisherman must excite a wish for a more attentive examination of the animal than can be gained by merely taking it from the hook and transferring it to the basket. We are unwilling to suppose that the finny tribes, which present themselves to the angler in so many varieties of figure, displaying as they do such diversified habits, manners, and instincts, can raise no interest in his mind beyond that which attends the mere attempt at their destruction. On the contrary, we feel assured that such appearances as those we allude to will make him desirous to become more intimately acquainted with their natural history, and also with those physiological laws which regulate their existence; particularly if he wishes to learn how animals, formed like himself, of bone, flesh, and blood, are able to live and thrive in a medium speedily fatal to man. The interest of this consideration is greatly increased when he learns that the leading phenomena of *respiration* are the same in animals living in water as in those of dry land; and that the *air* is the *pabulum vitæ* both to the fisher and the fish. Can he, then, refrain from seeking to inform himself how these seeming inconsistencies can be reconciled?

Sect. I. *Systematic Division of Linnæus.*

2780. *The merits of Linnæus* in displaying every department of Nature are universally acknowledged. For ichthyology he first adopted the arrangement of Artedi, and thus the first edition of the *Systema Naturæ* presents the cetaceous or whale tribes as *fishes* of a particular kind; the *Malacopterygii* and *Acanthopterygii* as perfect fishes; while the *Branchiostegii* and *Chondropterygii* formed a kind of swimming amphibia, on a supposition that they had both gills and lungs. As the organisation of the subjects of the animal kingdom became more closely examined, the cetaceous tribes proved to be true *Mammalia*, and consequently were wholly removed from the ichthyological catalogue by the learned author himself. We must not, however, omit to notice in this place a name dear to every student of zoology; for while, in conformity with our plan, we are somewhat constrained to adopt the Linnæan system in our descriptions, we should do a manifest injustice to Baron Cuvier, did we not offer a few words on his ichthyological classification, which we recommend to the notice and admiration of the reader. At the same time truth obliges us to remark that his classification presents too much of an artificial basing, for it forces Nature rather than submits to her guidance.

Subsect. 1. *Systematic Division of Cuvier.*

2781. *Fishes are divided by Cuvier into two sub-classes:* 1. that of ordinary fishes, under the general denomination of *Ossei*, distinguished by having the skeleton bony, the osseous matter being disposed in fibres; the sutures of the cranium distinct; maxillary and intermaxillary bones, either one or both present. 2. that of the *Cartilaginei*, or *Chondropterygii*, distinguished by having the skeleton cartilaginous; the bones destitute of fibres; sutures of the cranium indistinct; maxillary and intermaxillary bones, either wanting or rudimentary, their place being supplied by the palatine or vomer. We should naturally conclude, from observing the great diversity in the general form of fishes, that the structure of their skeleton must be equally various. They agree together however, on the whole, in having a spine, which extends from the cranium to the tail-fin; and in having the other fins, particularly those of the thorax and abdomen, articulated with peculiar bones. They have, in general, unconnected with the rest of the skeleton, many more bones than the animals of the preceding classes. The cranium in several cartilaginous fishes (in the skate for instance) has a very simple structure, consisting chiefly of one large piece. In the bony fishes, on the contrary, its component parts are very numerous, amounting to eighty in the head of the *perch*. The majority of the latter have an under-jaw more or less movable.

2782. In the arrangement of Cuvier, which is adopted by Mr. Yarrell, the above subclass, *Ossei*, is divided into six orders; viz. 1. *Acanthopterygii* (or spinous fins, as Perch); 2. *Malacopterygii* (soft fins) *abdominales* (as Pike); 3. *M. subbranchiati* (as Cod); 4. *M. apodes* (or without abdominal fins, as Eel); 5. *Lophobranchii* (gills tufted, as in the *Hippocampus*, or sea-horse); and 6. *Plectognathi* (as the Sun-fish). The second sub-class, *Chondropterygii*, is also divided into three orders, viz. 1. *Sturiones* (as Sturgeon); 2. *Selachii* (as Sharks; and 3. *Cyclostomi* (Lamprey).

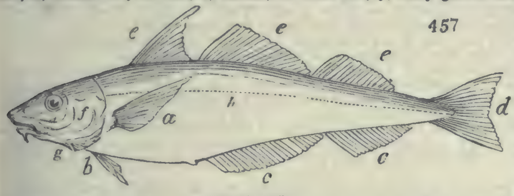
Subsect. 2. *Division of Agassiz and Müller.*

2783. Professor Agassiz, whose labours in the department of *Fossil* fishes are best known, afterwards proposed a division, founded on the structure of the *Scales*; and Prof. Müller, combining the systems of Cuvier and Agassiz, has divided Fish into five great orders: *Leptocardia*, *Cyclostomata*, *Teleostia*, *Ganoidea*, and *Selachia*. (See Dallas's *Animal Kingdom*, p. 291.) The nomenclature of Linnæus is followed here, except where otherwise specified.

2784. *The catalogue of fish in the Linnæan system* comprises about four hundred species. A great many have, however, been since added; and, without doubt, a certain number remain to be described. Of those, however, not enumerated by this truly great man, there are but few which would serve for the purposes of elucidation, and still fewer connected with the pursuits of the angler. Such, however, as come within either of these categories we shall not fail to notice.

2785. *Fishes form the fourth class of animals in the Linnæan system*, and are divided into six orders: — Orders 1, 2, 3, 4, are founded on the nature and situation of the *fins*, and also on the existence of *bony rays* in the gills; orders 5 and 6 are founded on a consideration of the nature of the *gills* and their appendages.

2786. *The fins are named according to their situation* (*fig.* 457.), as, *a*, pectoral fin; *b*, ventral fin; *c c*, anal fin; *d*, caudal fin, or tail; *e*, dorsal, or back fin; *f*, bony gill-covers; *g*, branchiostegous rays and their membranes; *h*, lateral or side line. The ventral fins are held to be analogous to the feet of quadrupeds, and thus the first order, or *apodal*, embraces such fishes as want the ventral fins; order 2, or jugular, includes those with ventral fins placed before the pectoral; order 3, or thoracic, includes such as have the ventral fins immediately under the pectoral; order 4, or abdominal, comprises those which have the ventral fins behind or beyond the pectoral; orders 5 and 6 comprehend the cartilaginous division, and are founded on the nature of the gills and their appendages.



FINS OF FISH.

2787. *The Linnæan genera* are derived from the situation of the fins, the shape of the body, the covering, figure, structure, and parts of the head, with the gills and their appendages, but particularly from the branchiostegous membrane. The *Linnæan specific character* is taken from the cirri, jaws, fins, spines, lateral line, digitated appendages, tail, and colour.

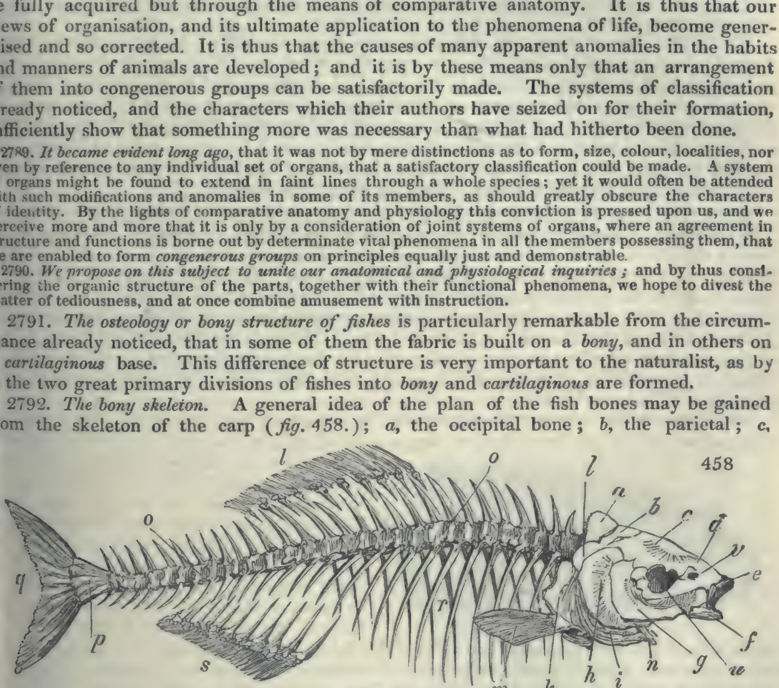
2788. *The anatomical examination of fishes* forms an interesting branch of their natural history. An extended philosophical acquaintance with the human frame necessarily requires the aids of human anatomy, nor can a similar knowledge of the animals around us be fully acquired but through the means of comparative anatomy. It is thus that our views of organisation, and its ultimate application to the phenomena of life, become generalised and so corrected. It is thus that the causes of many apparent anomalies in the habits and manners of animals are developed; and it is by these means only that an arrangement of them into congenerous groups can be satisfactorily made. The systems of classification already noticed, and the characters which their authors have seized on for their formation, sufficiently show that something more was necessary than what had hitherto been done.

2789. *It became evident long ago*, that it was not by mere distinctions as to form, size, colour, localities, nor even by reference to any individual set of organs, that a satisfactory classification could be made. A system of organs might be found to extend in faint lines through a whole species; yet it would often be attended with such modifications and anomalies in some of its members, as should greatly obscure the characters of identity. By the lights of comparative anatomy and physiology this conviction is pressed upon us, and we perceive more and more that it is only by a consideration of joint systems of organs, where an agreement in structure and functions is borne out by determinate vital phenomena in all the members possessing them, that we are enabled to form *congenerous groups* on principles equally just and demonstrable.

2790. *We propose on this subject to unite our anatomical and physiological inquiries*; and by thus considering the organic structure of the parts, together with their functional phenomena, we hope to divest the matter of tediousness, and at once combine amusement with instruction.

2791. *The osteology or bony structure of fishes* is particularly remarkable from the circumstance already noticed, that in some of them the fabric is built on a *bony*, and in others on a *cartilaginous* base. This difference of structure is very important to the naturalist, as by it the two great primary divisions of fishes into *bony* and *cartilaginous* are formed.

2792. *The bony skeleton.* A general idea of the plan of the fish bones may be gained from the skeleton of the carp (*fig.* 458.); *a*, the occipital bone; *b*, the parietal; *c*, frontal; *d*, nasal; *e*, superior maxillary or upper jaw bone, which is movable; *f*, in-



SKELETON OF FISH.

ferior maxillary, or lower jaw; *g*, os quadratum, a bone peculiar to fishes, compounded of the branch of the lower jaw and the temporal bones; *h*, operculum, or gill-cover; *i*, radii of the branchiostegous membrane, by which the genera are characterised; *k*, a kind of humerus, or arm bone, to which the thoracic fin or forearm is attached; *l*, an imperfect scapula; *m*, thoracic fin; *n*, lingual bone; *o, o*, the spine; *p*, extension of the last caudal vertebra for the attachment of the caudal or tail-fin; *q*, caudal or tail-fin; *r*, the ribs; *s*, anal or vent-fin; *t*, dorsal-fin; *u*, orbit, or cavity for lodging the eye; *v*, palatal bone.

2793. *It must not however be supposed*, that the bones of one fish can be with propriety taken as a correct type of the whole. The general assemblage of their osseous fabric is altogether more complicated than that of most other animals. It varies in form and proportion very greatly in different species, and in point of number there is hardly any affinity among them, there being three times as many bones in one fish as in another; this is particularly the case with the minute bones. Even in the division of fishes called osseous, the earthy part of the bones is less than in other animals, thus rendering them rather semicartilaginous than firm bone: and, on the other hand, in the cartilaginous fishes their cartilages are fortified by walls of ossified membrane; so that both divisions are somewhat approximated in structure, notwithstanding the distinctiveness of their appellations.

2794. *The cartilaginous skeleton* is very difficult to exemplify by any individual figure. Some of the larger flat fish, as the skate, may have their cartilaginous fabrics exemplified ere they fall into decay; but in the lesser cartilaginous fishes it is not an easy matter to represent them. There are head bones, so called; thoracic cartilages, or bones; a vertebral column extended into caudal vertebræ, or tail. There are also pelvic cartilages, or bones, to which the anal fins are articulated. Costæ, or ribs, are apparent, and surrounded by the pectoral fins, which in these flat fish appear like a continuation of the sides.

2795. *The bones of the head of fishes* being covered with skin only, give to this part a very rugged outline; and in most of them the head is large in proportion to the body, and is as diversified in figure as in the number of bones that enter into its composition. For, while the perch has eighty bones in its head, and some other fishes have many more, others have not half the number. In all they unite by ossification, as age advances. The skull is articulated with the neck by a single tubercle of the occiput in some fishes, and in others by means of two condyles; but in all it is so joined as to admit of little motion, which would have been inconvenient; and as they receive their food for the most part horizontally, it would also have been unnecessary.

2796. *The teeth of fishes* are not in general connected with the skeleton, and as by far the greater number do not masticate their food, their teeth are tentacular or hook-like; and are also variously placed, as in some on the tongue, in others on the palate, throat, and even on the cartilaginous arches of the gills. By means of these anomalous teeth they hold fast their prey, and when it is too large for perfect deglutition, they are enabled thus to retain it until the stomachic portion is dissolved. Such fishes as have no teeth within the mouth, are called *leather-mouthed*: such are the carp, sturgeon, &c. In the pike, on the contrary, the teeth cover the mouth and throat most extensively.

2797. *The vertebral column* is extremely varied in the number of its pieces, which however are determinate in nearly allied species. Artedi was induced to seize on them, as characters to distinguish the species; and the value of this anatomical fact is farther proved in the investigations of Mr. Yarrell, who considers himself thereby enabled to determine that the diminutive fish *whitebait* is not the young of the shad (*Clupea Alosa*), as hitherto considered by naturalists, the number of vertebræ in the shad being invariably fifty-five, whereas in the whitebait it is uniformly fifty-six. The vertebral column is sometimes angular, often cylindrical, and occasionally compressed.

2798. *The ribs of fishes* (*fig.* 458.) are very much diversified, being double in some, forked in others, and in a third variety altogether wanting. With regard to shape, they are compressed in the carp, round in the cod, and bristle-shaped in the herring. Within the area of the gills, the sternum or breast bone, the scapulæ or shoulder blades, and the clavicles or collar bones, are placed. Thus, amidst diversities of character the most extraordinary, there is exhibited throughout animated nature a traceable unity of design. In flat fish the want of ribs is compensated by the extreme length of the transverse processes. Two pelvic bones also exist, which defend the abdominal viscera.

2799. *The brain in fishes* is an object of extreme curiosity, for although it is of a thin jelly-like consistence only, yet its various parts are as distinct as those of quadrupeds and birds; the divisions of the cerebrum and cerebellum are even more numerous. (See Cuvier and Valenciennes, *Histoire Naturelle des Poissons*, i. 415—434, where the most complete works on the development of the brain in fishes are named, viz. those of Serre, Areaky, Desmoulins, &c.; see also Mr. Gore's illustrations appended to the *Comparative Anatomy* of Carus, published by Messrs. Longman and Co.) Through the intermediate spaces of the dorsal vertebræ may be seen the spinal cord, of a size not proportioned to the brain from which it proceeds, or of which it is a continuation, but always in proportion to the dimensions of the body.

2800. *Fishes, like other red blooded animals*, have most of them two eyes. We say most, because, while anatomy has failed to detect them at all in a few species, of which the gastrobranchus is an instance, the four eyed anableps, or loach (*fig.* 459.) exhibits the wonderful anomaly of four apparent eyes, looking through two orbits. Altogether the visual organs of fishes exhibit diversities of situation, form, and external appearance, more numerous and striking than those of most other animals. The general arrangement of the eyes in fishes is that of one on each side of the head: in what are termed flat fish, they are however both placed on the same side, with a slightly oblique aspect. As the habits of these fish force them to recline on one side on the ground, without this peculiar formation the sight of one eye would have been lost; but with the eyes thus placed, the fish can direct both of them upwards, as well to protect itself as to watch for its prey which swims over it.

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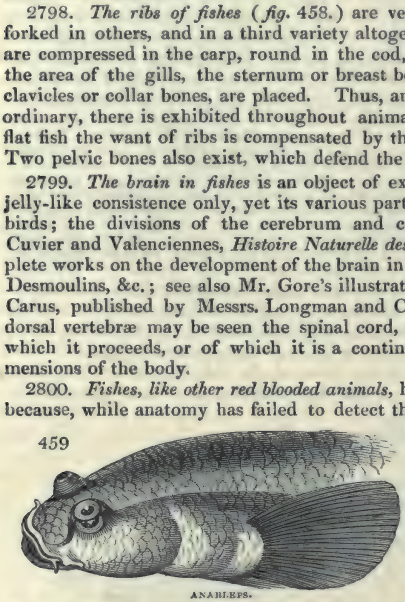

ANABLEPS.

2801. *The organs of hearing in fishes* have been the subjects of much discussion, their existence in fish having been denied by naturalists, until anatomy at length removed all doubt on this point, although some anglers are still sceptical on the subject. It is remarkable that even the observant Linnæus was not able to satisfy himself that any auditory organs could be discovered in fishes,—an oversight which probably arose from the particular specimens he examined, as in some fishes no external orifice can be detected. But even when it cannot, there is always an internal auditory apparatus, and the sonorous wave reaches a tremulous mass veiled under a thin bony lamella, from which the tremors are spread over the *sensitive* organ within. The Abbé Nollet ascertained, by conclusive experiments, detailed in the *Histoire de l'Academie des Sciences*, 1743, p. 26., that the human ear was susceptible to sound when immersed in water. The attention of Camper, Hunter, Vicq d'Azyr, and Monro, was afterwards directed to the demonstration of the auditive apparatus in these animals. (See *Phil. Trans.* 1782, p. 373.)

2802. *The auditive organ.* There is nothing on the exterior of the head of the fish to indicate that it is provided with an ear. In the higher animals the mechanical apparatus of hearing consists of an external and an internal portion: in fishes the internal portion alone exists, and is hardly inferior in perfection of form and structure to that of creatures placed higher in the animal scale. The nerves distributed to the organ of hearing are of large size, and the vital apparatus, or portion of brain, from which the former proceed, is also considerable. There exists, however, this important difference between the organ of hearing of terrestrial animals and fishes, namely, that the ear in the former is organised for the reception of the more delicate vibrations of the atmosphere, while in the latter it is adapted to the rude oscillations of a denser element. We may make this difference apparent by the following simple illustration. The impulse occasioned to the air by the ticking of a watch is so weak, as to be indistinctly heard when the watch is brought close to the ear; but if we convey the watch to a greater distance from the ear, and press it against the teeth, we hear the ticking with remarkable distinctness. In the language of science, solid and dense bodies vibrate with greater intensity than lighter media, such as the atmosphere. When the watch is held nigh to the ear, the atmosphere is the conductor; when the watch is connected with the ear, by the intervention of a rod of wood, or the solid parts of the head, these are the conductors. Now the apparatus of hearing of the fish presents conditions of the latter kind; water, a denser body than air, is the conducting medium; and the solid mass of the head, and, in fact, of the entire body, completes the conduction to the vital apparatus. Hence, in fishes, an humble contrivance is capable of effecting the same end as the higher-toned instrument of terrestrial animals.

2803. *As fishes thus evidently possess the organ of hearing in a moderate degree of perfection*, they must therefore hear with moderate acuteness, particularly such sounds as occasion a vibration of the element in which they reside; for example, an approaching footstep; while the sounds which proceed from musical instruments, being less easily conveyed, are probably unknown to them; certainly this is the case with regard to tone. Those curious porcelain-like bodies, which are found in the head of the fish, and which must be known to every investigator of the gastronomical merits of his game, form part of the mechanical apparatus of hearing.

2804. *The organs of taste in fishes are very obscure*, though there is little reason to doubt that they have some discriminating powers in the choice of their food beyond that of smell. The tongue is, however, very imperfectly developed; it presents no papillæ, and is supplied with none of the usual gustatory nerves. Fishes have been known to swallow the plummet of the fisherman instead of the bait; and hence it is probable that this sense is at least indistinct and weak. In this, however, as in every other part of our present subject, great diversity of opinion prevails. Cod will swallow almost any thing, such is their voracity and insensibility: but on the other hand it must be confessed, that some fishes are sufficiently dainty. Taste is at all times, and in all animals, a modification of common sensation, or the simple sense of touch. Its seat in fishes is probably the whole interior of the mouth, the tongue of these creatures being, as is well known, very small and very imperfectly developed. We cannot give the fish credit for any refinement of taste; which, with touch and feeling, occupies the lowest rank of the nervous senses.

2805. *The external or mechanical apparatus of the organ of smell* is a pair of small cavities or chambers, communicating with the aqueous element by means of four apertures, and situated near the extremity of the snout. The two openings of each olfactory chamber are intended to permit a free ingress and egress to the water in which the odorous principles are dissolved. But there exists no contrivance, as far as we know, for maintaining a constant current through the chambers. In this particular, the organ of smell of fishes is greatly inferior to that of higher animals; for in the latter, the olfactory chambers give passage to the greater part of the air which enters the lungs, and are thus enabled to test the quality of all the air received into the chest for inspiration. In fishes this power is less requisite, hence the inferiority of construction. The olfactory chambers are lined by a soft membrane, technically a mucous membrane, which is richly supplied with blood-vessels, and is brought into connection with the vital organs by means of a moderately large conducting nerve. The arrangement of this membrane evinces one of those beautiful contrivances which are so frequently met with in the animal machine, and which are intended to provide a large surface within a limited space. In order to increase the extent of this membrane as much as possible, it is thrown into a multitude of minute plaits which radiate from a central point, and have a very elegant appearance. From the back of the olfactory chambers there proceed, as we have already stated, two nervous cords, which conduct the impressions received by the mucous membrane to the brain. The vital apparatus of smell, like that of sight, consists of two round masses or lobes of nervous substance, which occupy the front of the brain, and preside over the manifestation of the olfactive faculty. They are inferior in size to the optic lobes, though often as large as the hemispheres of the brain. We are thus supplied with conclusive evidence of the possession by fishes of a power of smell, still so slight and undefinable that the use of scented baits is not advisable. The mechanical and vital portions of the apparatus, with the conducting nerve from the former to the latter, are complete; the only question which requires solution is the degree of the sentient power. The vital apparatus being large would be an argument in favour of vividness of perception; but the small mechanical portion, and especially the absence of a stream of water through the olfactory chambers, leave the organ imperfect. On these grounds we should be inclined to give the faculty of smell a position next in order to that of hearing, and greatly inferior to that of sight.

2806. *The organs of vision or sight in fish.* The mechanical apparatus of sight, the eye, or, as it is popularly termed, the eye-ball, or apple of the eye, is an optical instrument of great perfection. In man, and in the higher animals, the eye-ball is very nearly globular; the deviation from the perfectly spherical shape being in favour of a greater convexity of the transparent front of the organ. In fishes, on the contrary, the breadth of the eye greatly exceeds its depth, and it is flattened in front to a remarkable degree, presenting, in fact, the form of a segment of a sphere; hence, it is no uncommon thing to find the circumference of the eye-ball strengthened by a thin cup of gristle, and, in some instances, of bone. There is another remarkable difference between the eye of terrestrial animals and fishes — a difference which has reference to the nature of the medium in which the creature lives. For example, the density of water is so much greater than that of air, that it is employed in the construction of the eye-ball of man, and the rest of the air-breathing terrestrial animals, as a means of directing the rays of light towards the bottom of the eye, upon which the nervous curtain is spread which receives the picture of external nature. But in fishes it is evident that water, as a medium of refraction of the rays of light, would be perfectly useless, since the medium is aqueous through which all the rays reach the transparent window of the organ of vision. The chambers of the eye of the fish, which in other animals contain water, are consequently those which are most easily spared; and it is the reduction of capacity in them that gives rise to the flatness of the front of the eye. The proper refracting apparatus of the eye-ball of the fish is a transparent globe of considerable density and size, termed the lens. In terrestrial animals the lens is small, it is scarcely more convex than a common magnifying glass, and it is soft in its texture. That of the fish, however, is a much more powerful agent in the refraction of the rays of light, and approaches in some of its characters to the finest glass. By it the rays of light which pass through the transparent window (cornea) in the front of the eye are immediately received, and are as suddenly concentrated in the smooth expanse of the optic nerve, to be transferred by the latter to the vital apparatus. As is usual in optical instruments, there is a thin partition pierced with a circular aperture (the pupil), interposed between the transparent membrane of the front of the eye and the lens. This membrane is intended to regulate the admission of the luminous rays. In some fishes there are two apertures, or pupils, in place of one, in this partition,—a curious modification; while in some others, as in the common skate, a broad curtain with a vandyked border is suspended immediately behind the pupil at its upper part, and serves to veil the interior of the eye against the vertical rays, which would otherwise interfere with vision. The enumeration of all the modifications in the construction of the eye of the fish with which the naturalist is acquainted, would form of itself an interesting chapter; but the subject is too comprehensive to be more than glanced at in this brief sketch. The question is more fully treated of in a philosophical Essay written by Erasmus Wilson, F.R.S., for *A Handbook of Angling*, written by "Ephemera," and published by Messrs. Longman and Co.

2807. *The organs of touch in fishes* are not strongly marked. The skin is destitute of the papillary membrane; and this circumstance has engendered in the minds of anatomists a belief that the sense of touch is altogether wanting, or at best but very obscure. Sensation, like intellect, resides in the hemispheres of the brain, and the inference deduced from the smallness of these organs appears to be just with regard to the faculty in question. Fishes are as deficient in sensation as they are abundant in motion; but the last named faculty has no necessary connection with feeling: few of the motions of the fish are due to sensation, and almost as few to the will; therefore, motion alone cannot be taken as an index of sensation. In irritability they are not defective, as appears from the resistance they make to violence; but nevertheless we do not believe their feelings to be acute.

2808. *Fishes have no organs of voice.* This must be at once apparent, when we consider that they have neither larynx nor lungs properly so called. The small sound emitted by pike occasionally is a kind of sigh, produced by expelling the air through the nearly closed gill-flap. The dying snap of the herring is caused by a convulsive closing of the same part; and the sucking or chuck of the carp, in warm sunny days, when swimming near the surface, is, we are inclined to think, effected by the lips. This action may probably be occasioned by some application of the mouth to the large leaves of aquatic plants, for it is most observable when the fishes are beneath or near them.

Sect. III. *The Digestive System in Fishes.*

2809. *A view of the principal viscera*, employed as well in digestion as in other important functions, may be gained by judiciously placing a fish for the purpose of inspection. *Fig.* 460. exhibits a member of the carp family (*G. Cyprinus*): *a*, the heart, from which proceeds *b*, the dilated aorta; *c*, the diaphragm, or membrane which divides the head from the chest; *d*, the liver; *e e e e*, the intestines; *e e*, the stomach, seen protruding from under the liver; *f*, the rectum; *g*, the vent; *h h*, the kidneys, which in some fishes, as in the *Cyprinus*, are very large, and almost united in one uniform mass, not unlike the spleen; *i i i i*, the ovaries or spawn, seen much enlarged previous to spawning; *k*, the air bag or swim; *l*, the spleen; *m*, the bladder; *n n*, the pectoral fins; *o*, the anal fin; *p p*, the bronchial membrane stretched open by hooks in order to display the gills; *q q*, *r*, the cartilaginous arches of the gills.

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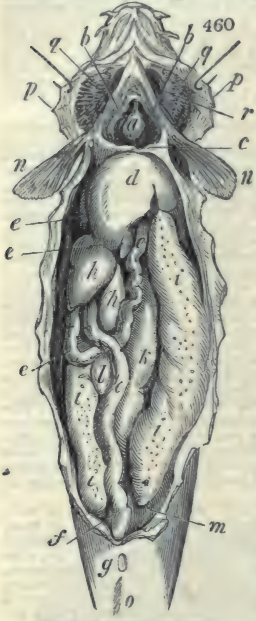

DIGESTIVE ORGANS OF FISH.

2810. *The digestive system in fishes* exhibits innumerable modifications in the form and structure of the organs concerned, as might be expected in animals which present the diversities of carnivorous, piscivorous, insectivorous, and omnivorous. The structure of their assimilating organs does not however follow all the analogies which usually present themselves in the parallel organs of carnivorous, graminivorous, and omnivorous *Mammalia*. On the contrary, in some fishes in whose stomachs the *Crustacea* are frequently found, the organ itself is rather thin and membranous; and in others, habituated, as we suppose, to feed on insects and the smaller fishes, a decidedly muscular gastric structure of considerable substance is present, as in the mullet, salmon, trout, &c. "The distinction," as observed by Cuvier, "between the large and small intestines in fishes cannot always be established with certainty. Sometimes it is the upper part next to the anus that is smallest, at the same time that its parietes are thinner than those of the intestines above it: such is the case in rays, sharks, the sturgeon, and the bichir, where the first part of the intestine has a spinal valve; and in the syngnathi, ostracious, and balistes, where the first is separated from the second part of the intestine by a circular valve. In other cases there is no difference in the diameter of the two divisions of the intestine; which however are distinguished by variations in the structure of the mucous membrane, or even by the presence of a circular valve. There is not any appendage to the intestine at the point where its two divisions (when they exist) communicate, the one portion inosculating with the other in such a manner as not to leave any *cul de sac* of sufficient importance to deserve to be distinguished by any particular name."

2811. *Among the peculiarities of structure* in the digestive organs of fishes, we must notice that of the stomach of the gillaroo trout, in which fish it much resembles a gizzard in structure, having thick muscular walls, not unlike those of large granivorous fowls. Among epicures it is usual to dress this part alone, on account of its great substance, firmness, and flavour.

2812. *The digestive process in fishes* is unquestionable, but it is conducted in them with some peculiarities. Thus, in the greater number, the food taken into the mouth receives no mastication, the teeth being merely prehensile, and the jaws having little lateral motion. Neither is there any salivary mixture, but the edible matter is at once swallowed. The gullet is so short in most fishes, that the stomach (*e e*, *fig.* 460.) appears almost to open into the mouth. The dilatability of the œsophagus must be familiar to the trolling angler, who beholds the enormous size of the fish that a moderately large pike is able to take into his maw. Occasionally the whole cannot be taken at once into the stomach, and in this case the remainder continues in the gullet until digestion has lessened the bulk of the part taken into the stomach. If the portion remaining within the œsophagus be sufficiently considerable to interfere with the motion of the gills, or the admission of water, the animal becomes choked, as not unfrequently happens with pike. In usual cases, the food being received within the stomach, is there acted upon as in other animals, first becoming macerated; and then, by some solvent power, it is gradually reduced into a soft pulp, the nutritious parts of which are absorbed, and go to nourish the frame, the remainder passing into the intestines.

2813. *The capacity of the digesting powers in fishes is very great;* some of them are voracious in the extreme, and can take a quarter of their own weight of food into the stomach every twenty-four hours, owing to the wonderful rapidity with which they digest their food, particularly salmon and pike; yet their capability of *fasting* is to the full as remarkable: they can subsist for weeks, and even months, without any other support than the water they inhabit; and it is the opinion of some, that they can so subsist during the period of their natural lives. The facts, however, brought forward in proof of this are not of sufficient weight to set aside the analogies of nature and the evidence of structure. It is indeed related, on the authority of Rondeletius, that his wife kept a fish in a glass vessel for three years on nothing but water; and might have kept it longer, if it had not out-grown the vessel. If the good lady had been much of an experimentalist, she would not have grudged a new vessel for the sake of prolonging the life of the fish; and we are warranted in saying that, with this indifference as to the result, but little dependence is to be placed on the previous treatment. The statements respecting the long fasts of gold and silver fish are probably, in an equal degree, derived from the doubtful testimony of servants, visitors, &c. In a state of confinement, they seldom, if ever, live beyond one or two years; and if their lives were even extended beyond this period, their longevity would be insufficient to justify the assumption of a capability of surviving during their natural lives on water alone. The slow-worm (*Anguis*) will live inclosed in a bottle without food for two years, but eventually dies of inanition. Mr. Daniel, however, has gone into a long and laboured detail to demonstrate the existence of this power, so totally opposite to nature.

2814. *Mr. Daniel appears to argue*, that as water, which is a compound fluid, is found equal to the support and nourishment of vegetables, there is no reason to suppose otherwise than that water alone may suffice to support the life of fishes also. Would it not have been more to the point to have regarded the constitutional voracity of almost all fishes, and their predilection for some food before that of others, as a proof that food is necessary to their permanent existence, and the capability of abstaining therefrom is only occasional? Water indeed is, in most cases, so compounded, and holds in suspension so many animal substances, that we may the less wonder at any occasional proofs of abstinence from vegetable or animal matter.

2815. *The intestines of fishes* (*e e e*, *fig.* 460.) neither generally nor individually admit of comparison with those of *Mammalia*. In each genus a particular form is apparent, and thus the diversities throughout the whole alimentary track are great; but in the intestines they are particularly so. Their intestines are covered by a peritoneum, as in quadrupeds.

2816. *The fish vent, or anus* (*g*, *fig.* 460.), presents as many varieties of form and situation as the other parts of the body, and on these anal peculiarities Scolopi built his system of classification. This opening forms in most cases the general passage for the urinary and intestinal functions, and for the deposit of spawn.

2817. *The liver is an important organ in fishes* (*d*, *fig.* 460.), not more on account of its size than of its individual importance in the animal economy. It lies principally within the left region of the abdomen, and is commonly either of a light yellow colour, or of a dirty brown. In some fishes it is undivided, as in the lamprey, flounder, salmon, &c.; in the perch, carp, and others, deep fissures divide it into lobes. The mass of the liver in fishes is strikingly cellular, and its cells are nearly filled with oil, whence in the larger tribes is derived an enormous quantity for domestic, artistic, and manufacturing purposes. When the liver is very large, the kidneys are usually small; but when it is comparatively small, the kidneys usurp its place, and are of great size. The secretion of this quantity of oil in the liver of most fishes is in accordance with the same general purposes for which some of them have been covered with a vast layer of oleaginous or fatty matter, particularly of those which inhabit the polar seas, such being by analogy observed to be the best defence against cold, and the best supply against occasional want of food.

2818. *A gall bladder is also present in most fishes*, but it varies greatly as well in size as in its contents in different species: in the salmon the bile is of a yellowish white; in the carp and eel very green, and in others of different hues. It is somewhat detached from the bladder, and pours its contents into the intestines by its cystic duct, sometimes continuous, and sometimes in contact with the hepatic duct. Fishes have a pancreas also, composed of numerous thread-like tubes, which pour a serous fluid into the first portion of the intestinal canal near the biliary orifice. The cartilaginous and broadly-extended fishes, however, have it more solid and massive. The spleen also in most fishes (*b*, *fig.* 460.), as in other animals, is so placed as to be subjected to pressure, which pressure it receives sometimes by means of the air-bag under which it lies, and sometimes by means of the stomach, liver, or intestines, so varied is its situation. It is plentifully supplied with blood, as in quadrupeds and birds, and it returns its blood to the liver.

2819. *The heart in fishes* (*a*, *fig.* 460.) is simply pulmonic, and one more systematic would have been unnecessary to animals, which receive as they do the blood from the veins, and transmit the whole of it to the aërating organs. It consists of a single auricle and ventricle, corresponding with the right side of the heart in the *Mammalia*. It varies greatly in shape in different fishes, being triangular, quadrilateral, or semicircular, as it belongs to various genera. From it proceeds a large artery, which, subdividing, extends to the bronchiæ or gills, throughout the feathered rami of which it is most minutely ramified, and from whence having undergone a great change by coming in contact with the air, it becomes a vital fluid, fitted for the support of the body. The respiratory organs of fishes with free gills, which are considered as those that approach nearest to the aërating system in *Mammalia*, are represented by *fig.* 461., where the head of a fish of the class with free gills is seen. The upper (*c*) with its diverging rays, marks the leaflets of the gills of the most perfect kind, being four to each side of the head (*e*). Each gill is attached by means of a cartilage, which is united with the bones of the tongue at the lower letter (*c*), and is covered with a gill-lid, or operculum, but which is here removed: *a* marks the face of the fish, and the internal extent of the leaflets; *b*, situation of gill flap, extending from *d* to lower *c*.

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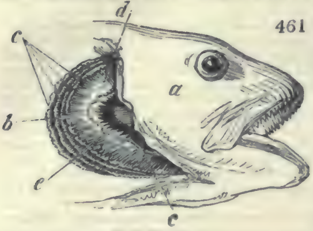

GILLS OF FISH.

2820. *The animal heat in fishes* is scarcely two and a half degrees beyond the temperature of the water they inhabit: they therefore rank among the cold blooded animals, in which the colour of the blood is less changed, and the temperature of their bodies less sensibly increased than in the warm blooded or higher orders. It is however necessary to remark, that the degree of intensity of the colour of the blood, and the vital heat emitted, bear little proportion to each other. The number of respirations made by fishes being between twenty and thirty per minute, the gills have evidently a less capacity for receiving the benefit of an extensive application of air than the lungs; and it follows that the animal heat from these united causes is necessarily reduced in fishes. (For a more copious detail of the source of animal heat see *Respiration in Quadrupeds*, p. 198.)

2821. *That fishes have urinary organs* was for some time considered as doubtful. Rondeletius was of opinion, that they were destitute both of kidneys and bladder; but the existence of both has been demonstrated by Willughby and others. In fishes, as in *Mammalia*, it is now well known that an excrementitious urinary fluid is separated from the blood by two kidneys (*h h*, *fig.* 460.), which are uniform in substance, of a reddish colour, long, narrow, and apparently united into one mass. A separate ureter empties the urine into a dilatation or bladder (*m*, *fig.* 460.). In the *Chondropterygii* they empty themselves at once into the common passage.

Subsect. 1. *Motive Organs of Fishes.*

2822. *The organs of motion in fishes* may be considered as internal and external, both of which are particularly interesting, because, accustomed as we are to consider progression, and in fact any displacement of the body, as the operation of extended extremities acting on lengthened levers, with a marked preparatory effort, we cannot but look with wonder at the varied and instantaneous motions of the finny tribes, acting on a medium so little resisting as water, and with organs apparently so inefficient for the purpose. The internal motive organs are the muscles, whose contractions operate on the fins, which may be considered as the *external* organs of motion. The muscular fibre of which the muscles of fishes are composed is soft, gelatinous, and usually without much colour; hence it is either sparingly supplied with blood, or the red particles do not enter it. From this cause a deep incision into the sides of a fish lets out but little blood, but the smallest puncture of the gills causes profuse bleeding. The muscles of some fishes, as the salmon, are however red, particularly those about the head: in the lamprey, on the contrary, the muscles are of a dark grey. How then does this absence of red blood in the fleshy fibre of fishes, eminently gifted as they are with strength, become reconcilable with the doctrine which attributes force to the muscles of other animals in proportion as they are supplied with it? Thus in the eating of fish we meet with no stringy portions but such as are derived from the skinny expansions; yet we know, by the intensity and continuance of the exertions of these animals in a medium continually opposing resistance to their bodies, that a powerful force exists within them. To this we reply, that the muscular contractions which operate on the motions of fishes are principally dependent on a stimulus derived from the brain and nerves acting on another principle inherent in the muscles themselves called *irritability*, as that of the brain is called *nervous* influence. It is by nervous influence that a muscle, when cut out of the body, and thus totally separated from the brain and nerves, still retains its contractility, and shrinks from the irritation of pricking, elasticity, or cauterisation. It likewise appears that the duration and force of the property are increased by a sudden and violent separation from nervous influence, on which circumstance the use of crimping depends.

2823. *Crimping*, as we know, is a practice common with fishermen, who as soon as a fish is taken stun it with a violent blow on the head; and in order to act on the irritability and contractility of the muscles, they divide the fibres by deep transverse sections. This operation causes the muscular fibrillæ to contract into the smallest possible space, and thereby the fish becomes much firmer, and so remains for a considerable time It is therefore an operation, which the angler who eats the fish he catches should be well acquainted with.

2824. *The air bladder of fishes* (*k*, *fig.* 460.), is very generally considered as an appendage to their motive organs; but the extent of its operations is disputed, and the phenomena attending its presence or absence are not calculated to reconcile all these differences of opinion. Dr. Needham supposed it to be a digestive organ, because it communicates with the alimentary canal. (*De Formato Fœtu*, ch. iv.) But the more general opinion entertained by naturalists is that it affords buoyancy; and it is deemed to be the analogue or rudiment of the lungs in higher animals. Popularly it is called the *air bag*, the *bladder*, or *swim;* and in the larger fishes, particularly the cod, it is known by the name of the *sound.*

2825. *The external motive organs of these animals are the fins*, which, under the influence of the nerves, produce all the motions of fishes with an ease and rapidity that excite our admiration; while the peculiarity of their formation exhibits the care which has been taken to suit them to the varied sorts of motion most habitual to the endless varieties of the finny race. In the quiet and retired lake fish the fins are small, thin, and light; but in the pelagian tribes, which traverse wide seas and encounter raging tempests, they are observed to be massive and powerful. So great is the force with which these organs act, that, impelled by their muscular energies, the sword-fish is enabled to pierce through the copper sheathing and the massive wood-work of large ships; the salmon to force itself even through rapid cataracts, and to make the most surprising leaps: nor is there indeed any animal which can move from a state of rest with such velocity as fishes. In fact, the force of their operating muscles is more intense than at first sight is apparent; but when we remember that the trout, salmon, and other fishes, remain steadily for hours in one situation watching for prey, notwithstanding the action of powerful currents, some idea may be formed of its intensity. The shark accompanies ships on their voyages for many days, and as some allege even for weeks; and such is his rapidity of motion, that Cuvier says, were he capable of supporting the action for so long a period, he might traverse the globe in thirty days.

2826. *The number of the fins as motive organs* varies according to the genus, and even according to the species. It is difficult, therefore, to fix on those fins which exercise the greatest influence on the habits of the animal, as there is not any one fin common to all fishes, although all fishes have at least one of these organs more or less developed. The size of the fins is equally various in the different species, as it bears no constant proportion to the figure or magnitude of the fish, or to its habits or instincts.

2827. *The mechanical action of the fins* has been explained in a masterly and philosophical manner by Borelli in his celebrated work, *De Motu Animalium.* Dr. Paley in his *Natural Theology* has also illustrated it by a popular and interesting method: — "Fish," he writes, "have very nearly the same specific gravity with the element in which they move, therefore with them there is little or no weight to bear up: what is wanted is only an impulse sufficient to carry the body through a resisting medium, or to maintain the posture, or to support or restore the balance of the body, which is always the most unsteady when there is no weight to sink it. For these offices the fins are sufficiently large, though they are much smaller than wings, with which birds have been furnished for similar purposes: their action is mechanical; their position, and the muscles by which they are moved, are in the highest degree convenient. In most fish, besides the great fin, the tail, we find two pairs upon the sides, one or two upon the back, and one upon the belly, or rather between the belly and the tail. The balancing use of these organs is thus proved. Of the large-headed fish, if the pectoral fins (that is, the pair which is close behind the gills) be cut off, the head falls prone to the bottom; if the right pectoral fin only be cut off, the fish leans to that side; if the ventral fin on the same side be cut away, then it loses its equilibrium entirely. The pectoral, and more particularly the ventral, fins serve to raise and depress the fish: when the fish desires to have a retrograde motion, a stroke forward with the pectoral fin effectually produces it; if the fish desire to turn either way, a single blow with the tail the opposite way sends it round at once; if the tail strike both ways, the motion produced by the double lash is progressive, and enables the fish to dart forward with an astonishing velocity. When the tail is cut off, the fish loses all motion, and gives itself up to be borne wherever the water wills. The rest of the fins therefore, so far as respects motion, seem to be merely subsidiary to this."

2828. *Observations on the mechanism of fishes* and mollusks in all likelihood led to important results. The action of the fins probably first engendered the idea of oars to the savage, who having committed his person to the buoyancy of a plank, further secured the assistance of a propelling power by a paddle. To the plank succeeded a raft, and next a bark. In Egypt and Abyssinia these early barks were principally made of the Paper reed (*Cyperus papyrus*), which is confirmed by Diodorus Siculus, Strabo, Lucan, Pliny, and other ancient writers. Of vessels so formed frequent mention is made also in the Holy Scriptures. In these voyages our navigators possibly met with the most perfect of the molluscous sailors, the Paper Nautilus (*Argonauta Argo*, *fig.* 462.), when to their yet rude vessel they were further taught to add the means of increased celerity with diminished labour, with an additional facility in directing its course. In the wing-like membrane said to be uplifted by this fair voyager, they caught the idea perhaps of sails. Two other of its arms, employed to direct its course, instructed them, so poets tell, in the use of a rudder; while the remainder, by their motion, led them to use oars also as an additional propelling power. From this poetic origin tall ships grew, and navies mayhap originated.

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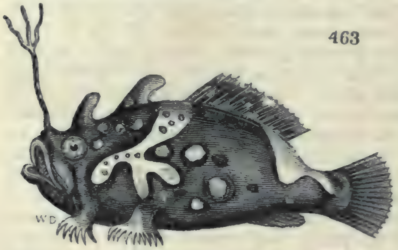
THE PAPER NAUTILUS (*Argonauta Argo*).

2829. "*The nautilus, or pompilus*," says Pliny, "is among the principal miracles of Nature. It ascends to the surface of the sea in a supine posture, and gradually raising itself up, forces out, by means of a tube, all the water from the shell, so that it pumps ship, and floats readily; then, throwing back the two foremost arms, it displays between them a membrane of wonderful tenuity, which acts as a sail, while with the remaining arms it rows itself along, the tail in the middle acting as a helm to direct its course; thus it voyages like some fair galley, and if alarmed, takes in water and descends." — (*Hist. Nat.* ix. 47.) The modern poet Pope alludes to the same popular belief in the lines —

> "Learn of the little Nautilus to sail,
> Bend the limp oar, and catch the driving gale."

And the feats of humbler *Crustacea*, which we have witnessed in the *aquarium*, make the story credible, though denied by most naturalists.—(See *Carpenter's Zoology*, vol. ii. p. 347. and *Dallas's Animal Kingdom*, p. 270.)

2830. *At any rate leaping* is practised by fish, as we know by the springs they make out of the water after flies. But the most extraordinary proof of this faculty is exhibited by the salmon, whose leaps to overcome the obstructing rocks or waterfalls, in his passage up rivers, are truly astonishing. The action of the flying-fish is but a *leap*, acting on the buoyancy of distended pectoral fins. Other fishes likewise, as the *Scorpæna*, *Trigla*, and *Pegasus*, are endowed with this power. Climbing is also common to some, as the *Perca scandens*. Eels we well know to be endowed with this faculty: when they have surmounted a perpendicular obstruction, by opposing their own viscid surface to the surfaces of the matter to be passed up, they are then able, by tortuous wrigglings, to advance to considerable distances in search of new locations; and it is thus that new-made ponds are sought out and stocked by them.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LOPHIUS PICTUS (*length*, 9 *inches*).

2831. *The Painted Angler* (*Lophius pictus*), a small fish from the Tropics, kept in glass globes, is able to *walk*. M. Renard affirms that he knew an instance of an individual of this tribe (*L. anguis*) which having been kept out of water for three days, walked about the house in the manner of a dog. We were also informed by a naval officer, that, when on a voyage, one of these aquatic gentry proved a source of great entertainment to all on board. He used to walk about the deck after the manner of that just noticed.

2832. *The adhesive organ of fishes*, termed a sucker, may be considered as a borrowed organ of motion. Its situation is not always the same in species which possess it, being in some thoracic, and in others placed on the top of the head. In the *Remora* it is coronal and oval, consisting of transverse rows of cartilaginous plates, connected by one edge to the surface of the head, while the other edge is free and finely pectinated. A longitudinal partition divides the plates.

2833. *Electricity* is one of the most surprising phenomena connected with the organology of fishes. The torpedo (*Raia torpedo* Linn.) is an inhabitant of most seas, but is found larger and stronger in the Mediterranean than in most other seas. Its body is somewhat circular, perfectly smooth, slightly convex above, and marked along each side of the spine by several small pores or foramina: the colour of the upper surface is usually a pale reddish brown, sometimes marked by five large, equidistant, circular, dusky spots, with paler centres; the under surface is whitish or flesh coloured. The torpedo, however, is observed to vary considerably in the cast and intensity of its colours. The general length of this fish seems to be about eighteen inches, or two feet, but it is occasionally found of far larger dimensions, specimens having been met with on our own coasts of the weight of fifty, sixty, and even eighty pounds. This electric fish has been celebrated both by ancients and moderns for its wonderful faculty of causing a sudden numbness, or painful sensation, in the limbs of those who touch or handle it. The electric phenomenon of the torpedo is commonly by ignorant persons ascribed to enchantment. Thus we are told by Oppian, that the torpedo, conscious of his latent faculty, when caught by a hook exerts it in such a manner that, sending it along the line and rod, it benumbs the astonished fisherman, and suddenly reduces him to a state of helpless stupefaction. There is a mixture of truth and fable in this account. "The real effect of the torpedo," says Mr. Walsh, "appears to be absolutely electrical, forming its circuit through the same conductors with electricity, and being intercepted by the same non-conductors as glass and sealing-wax." The galvanic or electric powers of the gymnotus, or electric eel, are however universally allowed to be even greater than those of the torpedo.

2834. *The exterior coverings of fishes* consist principally of the scales and skin. They have, it is true, various other appendages, but they are in most cases only prolongations of one or other of them under distinct names: an inner sensible layer, called true skin or *corium;* and an outer, known as *cuticle.* Between these is spread a mucous web, termed *rete mucosum,* of various tints, which, shining through the transparent scales and cuticle, gives to fishes their colour. The corium is thick in such fishes as have minute scales, but more thin and membranous when the scales are large.

2835. *The scales of fishes* exhibit the same varieties which mark the other organs. Instead of imbricated scales lying over each other, like the tiles of a house, with a fixed base, and the distal margin free, sometimes true osseous plates exist, which in the sturgeon are limpet shaped. The common stickleback is a familiar instance of one of the fishes furnished with movable spines; and the readiness with which the little gentleman bristles up his back has left a smarting impression on many an urchin who ensnared him with his bent pin and packthread. Among the diversities in scales may be noticed those of the large scaled carp, in which, while some are of the usual size, others are of extraordinary magnitude, mailing it in particular parts of the body. Scales are common to all fishes: eels, and some other fish, reputed to be destitute of them, are not so, but have them extremely minute. The scales of the eel are particularly noticed in our angling for that fish. Leuwenhock describes the scales of fishes as formed with surprising beauty and regularity, and as exhibiting an endless variety in external figure and contexture, observable not only in those taken from distinct sorts of fish, but even in those of the same fish.

2836. *The cirri of fishes* are appendicular prolongations of the skin of the head, the mouth, the throat, and other parts; the term is, however, principally applicable to those which project from the mouth, called by fishermen *wattles,* or *beard,* of which the barbel and carp are familiar instances. In some marine fish, as the *Silurus, Clarias, Polynemus,* &c. they are numerous, and are sometimes as long as the fish itself.

2837. *Fishes* are well known to be furnished with a slimy mucus over the exterior of the body, which serves to shield them from the abrading and penetrating influence of the water, and to enable them to elude the grasp of their enemies, as must be known to the angler in his attempts to hold them: it exudes from small pores in the scales, corresponding with openings, or ducts, in the skin underneath. It is the decomposition of this mucous albumen which gives to fishes that opaque filmy appearance when they have remained some time dead in the water; and it is the coagulation of this same matter which gives to the eel its whitened opaque look when dipped into boiling water. The lateral line, which extends along the sides of fishes, is a specialty *sui generis,* and has no analogy in animated nature, unless the lateral line of aërial spiracles in insects be considered as a feeble type. It is almost universally present, and is perhaps only wanting in the lamprey and a few others. It exhibits several striking peculiarities, varying in position and direction according to the species. It usually follows a course from the upper angle of the gills to the middle of the tail, thus dividing the lateral surfaces of the fish into two portions. In most sea fishes it inclines more towards the back, but in those inhabiting fresh water its inclination is rather towards the abdomen. The line is generally single, but in a few instances, as in the Sand Eel, it is double.

Sect. IV. *The Reproductive System in Fishes.*

2838. *The breeding of fishes,* or their reproductive system, is a curious and important subject, both to the naturalist and economist; but, unfortunately, it is involved in great obscurity, arising not only from the retired habits of the animals, and the nature of the element in which they reside, but also from the diversities in the phenomena which characterise the process of reproduction itself in the different species. That philosophical zoologist, Dr. Fleming, divides fishes into two classes: those which have the sexes distinct, as in the oviparous, and those in which they are united. The first class is again divided into such as have the impregnation external, and such as have it internal. The oviparous fishes are the most numerous, and the procreative act takes place in them after the ova are excluded. In other words, the *milter* and *spawner* commingle their several generative products to render them prolific. A social union appears to be formed between a male and female, who join in the search of a suitable place for the deposit of their spawn, which in the salmon genus is beneath sand or gravel. With other fishes it may be shed in the crevices of rocks, upon or under sea-weeds, &c. &c. In this great work the male joins as assiduously as the female, and the deposit being almost simultaneously made, and impregnation being thereby insured, all sympathetic union between these parents is said to be immediately and altogether dissolved; at all events, the progeny are no further objects of solicitude. We, however, appeal to the experience of every old and observant angler, if he has not remarked that in certain portions of most waters he has from time to time met with two fish of the same kind in the same spot, and usually unattended by any others, except among congregational fishes. We would particularly allude to jack, salmon, and trout, to which fish our present observations are principally confined. Yet this proves nothing positively.

2839. *The process of spawning in the salmon* is thus described in *The Book of the Salmon*, published by Messrs. Longman: — " The male and female salmon appear together on that part of a shallow in which their bed is to be dug, and they remain moving about upon it for a few days previously to nidification, which is performed by both of them dropping down the stream a little, and then returning with velocity towards the spot selected, they dart their heads into the gravel, burrowing with their snouts into it. This burrowing action, against and not across the stream, is performed by aid of the fins with great force, and, the water's current assisting, the upper part of the excavation is removed. The burrowing process is continued until the first nest is dug sufficiently capacious for a first deposition of ova. Then the female enters this first hollowed link of the bed, and deposits therein a portion of her ova. That done, she returns down stream, and the male instantly takes her place, and pouring, by emission, a certain quantity of milt over the deposited ova, impregnates them. The excavation and deposition of ova and milt are continued as long as there is any spawn to be emitted, and the making of the bed may extend from three to ten days, according to the quantity of spawn the fish possess, or the hardness or softness of the gravel in which the fish make their beds.

2840. *In favourable situations*, as early as the second day, the spot or germ within the ovum of many fishes becomes opaque. In four or five days a pulsatory motion may be observed in it, and in two or three days more the rudiments of the organs may be distinguished, as the spines, eyes, and tail. The form being now somewhat developed, the fins protrude: — first, the pectoral; next, the caudal; the dorsal, ventral, and anal follow in succession, and pursue this order of development. In ten or twelve days the ovum bursts, and the embryo springs into active life. This is not the case of salmon, where ova take from 100 to 140 days to be incubated. Temperature causes the difference.

2841. *Viviparous fishes, or fishes with the sexes distinct*, and with internal impregnation, are found principally among the *Chondropterygii*, or cartilaginous fishes: a few of the osseous tribes are also found in this division. The male organs in this class, particularly in the sharks and rays, present two large flat testes, each divided into two portions, one resembling the soft melt of the oviparous fishes, the other made up of small glandular portions. The female organs of the sharks and rays, which we may take as types of this class, are composed of two ovaria, each having an oviduct which dilates into the uterus. The period of the impregnation of the ovum, and the manner of it, are at present undetermined. In the viviparous blenny (*fig.* 464.) the young fish are seen escaping from the abdomen, and entering on a new scene, amidst innumerable enemies; and although the watchful mother guards and defends them, they nevertheless fall a sacrifice to numerous devastating foes around them.

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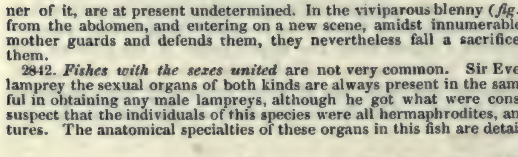

VIVIPAROUS BLENNY.

2842. *Fishes with the sexes united* are not very common. Sir Everard Home however found, that in the lamprey the sexual organs of both kinds are always present in the same individual. Having been unsuccessful in obtaining any male lampreys, although he got what were considered females in plenty, he began to suspect that the individuals of this species were all hermaphrodites, and his observations justified his conjectures. The anatomical specialties of these organs in this fish are detailed in *Phil. Trans.* 1815, part ii. p. 266.

Subsect. 1. *The Fecundity of Fishes.*

2843. *The fecundity of fishes* is a more curious phenomenon than any of those which are observed in their economy. In some this faculty is so extreme as to produce astonishment; and again in others it is confined to a few, perhaps to one or two only. By a wise and beneficent regulation in Nature, the voracious and non-edible tribes are among those of but little fecundity, otherwise the depths of the ocean would become a common grave for all the living; and our shores would be fatal to all who approached their limits. Happily, on the contrary, the cod, the herring, the sturgeon, &c. &c. pour in gregarious myriads, and supply us with the blessings of a food, at once valuable and easy of attainment. Thus it is that the prolific powers of fishes have occupied the attention of many naturalists, but perhaps to none are we more indebted than to Mr. Harmer, for the extent and profundity of his researches into this important subject; and we regret that our circumscribed limits forbid our transferring them to our pages.

2844. *Fishes are subject to diseases* both in a natural and domesticated state. The extremes of temperature affect them; and thus in ponds they sometimes die when the heat is excessive. The rigours of winter are still more fatal, particularly in shallow waters. Occasionally an epidemic mortality prevails among them, apparently dependent on cold. A description of such a disease will be found in the *Journal Physique* for November 1789, at which period the inhabitants of some districts lost nearly all their stock of carp, pike, and trout.

2845. *Internal parasitic animals* may be ranked among the causes of disease in fishes, as they prove not only troublesome and injurious, but sometimes even destructive. Linnæus has given a formidable list, which has been arranged more systematically, and somewhat augmented, by the acumen and industry of subsequent naturalists, as Pallas, Müller, Lamarck, Latreille.

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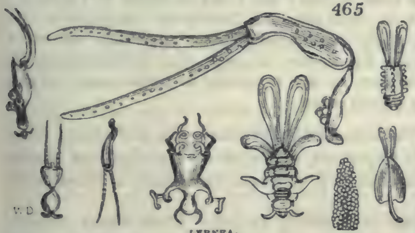

LERNEA.

2846. *The external parasitic animals* which attach themselves to fishes are of various kinds, as *fig.* 465., which exhibits several, will show: they are, as will be seen, of very different forms. These parasites are, the *Lernea, Monoculus,* and *Oniscus,* of Linnæus; and the *Cecrops, Pandarus,* and *Anthosoma,* of subsequent naturalists.

2847. *Lernea,* fish-louse, or fish-biter tribe, are molluscous blind-worms, with a naked body, often oblong and cylindrical, having three or four tentacula, with which they fix themselves closely to the skin and other parts of fishes. The forms of these lernea are so varied, that it is hardly possible to offer a graphic type of the whole. The *Lernea Salmonia* is rendered peculiarly interesting by its notoriety. It is this fish-louse which fixes itself on the gills of salmon, and commits the ravages sometimes seen there. The *Monoculus Piscinus* is as indigenous to the salt waters as the *Lernea Salmonia* is to the fresh; hence, though the salmon on leaving the sea speedily gets rid of these, he is soon attacked by a foe more inveterate, the *lernea,* or maggot as it is called by the fishermen of the North. When these fix on the gills they erode and do much injury, and it is not improbable that the eagerness to get rid of them may stimulate the salmon's return to the sea, which immediately destroys the *lernea,* and repairs the evils it has caused

2848. *The Lernea Cyprinacea* is also not uninteresting to the angler, from its general diffusion throughout almost the whole of the carp genus. It may be observed, with its cylindrical body and four tentacula, adhering to them, particularly when the fish are out of season. *Lernea Truttæ* also frequently comes under the fly-fisher's notice, and is not an uncommon cause of spoiling his sport, particularly in the spring. At which time it is not unusual, after having hooked a large trout, to find him a dead weight, affording no sport, but yielding up his life without a struggle. In such case, when the captive is taken out he is usually found to be partially covered with the *Lernea Truttæ*, or trout-lice, to which the defective condition of the fish is to be attributed, although it is not improbable they are more a consequence than a cause of disease. We must, however, conclude this notice, with barely mentioning the *tænia*, a well known cause of disease in fishes, and also the *fasciolæ*.

2849. *The tænia* is probably in the first degree hurtful to fishes, and the *fasciolæ* in the next. A periodical affection of the eyes also occurs to some fishes, of which the mackerel is an instance, and has been thought to be dependent on a winter hybernation in the mud. But although we do not altogether deny this as a cause, yet, as we are inclined to think the cuticle or outer skin of most fishes to be deciduous (in some cases we know the scales are so likewise), may not the temporary blindness with which they are sometimes affected be in some way connected with this annual decortication, in which the eyes, being covered with cuticle must participate by becoming disorganised and opaque?

2850. *The phenomena attending death in fishes.* Mr. White of Selborne thus graphically and accurately observes on the manner in which fishes die in their own element: — "So soon as the creature sickens, the head sinks lower and lower, and it stands, as it were, upon it; until getting weaker, and losing all poise, the tail turns over, and at last he swims on the surface of the water with the belly upwards (*fig.* 466.). The reason why fishes, when dead, float in that manner, is very obvious, because when the body is no longer balanced by the fins of the belly, the broad muscular back preponderates by its own gravity, and turns the belly uppermost, as lighter, from its being a cavity, and because it contains the swimming bladder which contributes to render it buoyant." Dying, as an act produced by removal from water, is brought about in a longer or shorter period, by the absence of air in the blood. It was long ago observed by Rondeletius, that those fish whose respiratory organs (the gills) were imperfectly covered by opercle, expired quicker than those whose gill-lid more completely closed the external communication: from which it is proved that the air, to produce its aërating qualities, must be extracted from the water itself. It is doubtless chemically elaborated through that medium, and that medium only, will suit the immediate wants of fish blood. The gasping

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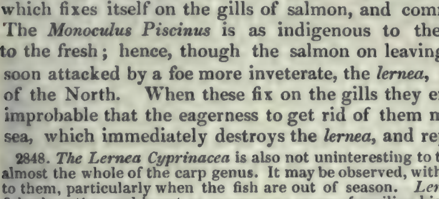


DYING FISH.

of a fish in dying is an effort to draw in water to separate air from it, although surrounded with a superabundance of that element. The herring, as we have said, dies immediately on its removal from the water. Is not this sudden death the consequence of some electric effect received by its sudden admission into atmospheric air? Decomposition also in the herring begins almost immediately after death; the scales come off quickly, and in an hour or two it is unfit to salt. This early decomposition is in unison with what happens from an electric death: and the phenomenon of parting with life by one momentary effort, in which a slight snap only is heard, also accords with the same consequences.

CHAP. II.

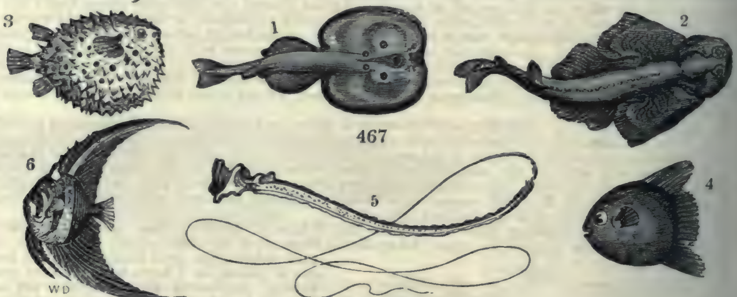
THE POPULAR HISTORY OF FISHES.

2851. *A popular history of fishes* will comprehend their exterior form, their obvious division into salt and fresh water tribes, their geographical distribution, migrations, hybernations, their food, and the methods of taking them, including those practised in the national fisheries, and the uses to which mankind apply them. Our present limits preclude any display of the subject beyond a brief notice: we however think it necessary to premise, that in every portion of our work we shall take the liberty of using the terms *fishes* or *fish* at discretion, as we conceive them occasionally most applicable or most accordant with the language generally employed by readers at large, and by sportsmen in particular; and this we shall do without reference to the propriety or impropriety of the same noun being used in both a singular and plural sense.

Sect. I. *The exterior Form, popular Divisions, Habits, Manners, &c. of Fishes.*

2852. *These several subjects* are individually important, and were we not confined in our limits, we might treat at large on each subject; but as it is, we can but glance at them more cursorily than we could wish.

2853. *The exterior form of the body in fishes* is infinitely varied. These forms present themselves as compressed, depressed, oblong, orbicular, oval, gibbous, pentagonal, &c. By far the greater number, however, are of a long oval figure, with a pointed head, and some gibbosity towards the shoulders, whence the body usually tapers to the tail, thus altogether presenting a figure calculated to offer the least resistance to its motions through the water. That such an outline is not, however, essential to the progression of fishes, is evident from the great occasional departure from it which we meet with among them, and which renders them apparently but ill calculated, on mechanical principles, for locomotion. The ray and turbot, for instance, exhibit figures not apparently well adapted for rapid movements; still less so the torpedo. But Nature will not be circumscribed within any limits ordained by feeble man. We have, however, in *fig.* 467. offered a few exemplifications of anomalous conformation in fishes. The torpedo (No. 1.) might be considered as not well calculated to make his "way in the world," by his swimming or by his beauty. In the same predicament we must regard the angel-fish (No. 2.), concluding that Nature will not be frustrated in her intentions; but, on the contrary, has in such instances so modified her mechanics that some fishes, like some horses, are able "to go any how." The round diodon (No. 3.), with his circumscribed fins, if he cannot kick up his heels, yet manages his minute oars as dextrously and effectively as the "jolly young waterman feathers" his more extended ones. The figure of the short sunfish (No. 4.) is equally calculated to excite our surprise and admiration, when it is known that this almost shapeless mass is agile in the extreme. In the cordated stylephorus (No. 5.), on the contrary, we are struck with the extreme length and tenuity manifested throughout its form. We shall, however, conclude with No. 6., which represents the long finned chætodon, whose figure must be considered as anomalous as the rest.



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FORMS OF FISHES.

2854. *The popular definitions of the form and structure of fishes* have, however, been subjected to classification and general notation. Thus they are said to be *compressed*, when the diameter from side to side is less than from back to belly; *depressed*, when the diameter from side to side is greater than from back to belly; *orbicular*, when the longitudinal and transverse diameters are nearly equal; *oblong*, when the longitudinal exceeds the transverse diameter; *oval*, when the base is likewise circular; and *gibbous*, when the back presents one or more protuberances. The extreme lines may also be *carinate*, *ensiform*, *cuneiform*, or wedge-shaped, &c. The surface of the body is called *naked* when it is smooth and without apparent scales; but when these are present it is said to be *scaly*. When the scales are without angles the surface is said to be *smooth*. Most fish are *lubricated* with an albuminous mucus; some are *tuberculated*, having hard risings; others are *loricated*, or *mailed*, when encased in an impenetrable integumental covering; and *fasciate*, or *banded*, when marked with zones from the back to the belly.

2855. *A popular division of the body* may be made into head, trunk, and tail. The *anterior extremity*, or head, is more or less *pointed;* the snout is usually *protuberant*, sometimes nearly *absorbed*. The *snout* in the salmon is seen *recurved;* in the swordfish lengthened out into a pointed *lance-shape;* and in the rostrate chætodon it terminates in a tubular or *pipe-like* projection. The *trunk* is variously characterised: the abdomen is at one time *carinated*, at others *acute;* sometimes the scales forming the carinæ are formed like the teeth of a saw, when it is said to be serrated. The tail is sometimes round, as in the lamprey; *carinated*, when it has a sharp angle; *muricated*, when beset with spines; *apterygious*, when destitute of fins; *dipterygious*, when the fin is divided at the base. These terms being definite and conventional among naturalists, and well-informed anglers also, we have introduced them as a useful guide even to the more popular descriptions of fishes. The want of precise nomination is severely felt in all zoological detail, because it leads to much ambiguity.

2856. *Fishes* may be obviously divided into such as exclusively inhabit the sea and salt-water lakes, those which are found only in fresh waters, and such as are capable of residing in both. The fishes which can live in salt waters only are infinitely more numerous, and far more varied in external figure than those found in fresh waters. The vital phenomena of the two must vary somewhat; but the eye of the anatomist has failed to detect any specialty purposely destined to render life in either salt water or fresh necessary to their existence. Commensurate with the vastness of the ocean is the relative bulk of many of its inhabitants; and their powers are equally great with their corporeal frames. The hippopotamus and the crocodile, the huge tyrants of the fresh waters, are but pigmies compared with the monstrous cetaceous tribes. In point also of economical importance, sea fishes rank beyond all comparison above those of fresh water. The localities of sea fish correspond with their habits, powers, and the nature of their food: some are found only in the open ocean, and in vast seas — hence they are called *pelagic;* others principally frequent the shores, and are termed *littoral;* some affect rocky situations; some weedy, and others sandy spots. The surface, or near it, is the principal rendezvous of some tribes, and the profoundest depths that of others. Tideways, currents, and the larger estuaries, are observed to be favourite situations with great numbers of species.

2857. *The fishes which exclusively inhabit fresh waters* are, as already observed, of little value to the economist compared with those of the salt water; but on the other hand to the angler, to whose purposes our labours are principally subservient, they far outweigh in importance all the inhabitants of the deep. The principal members of this division are, as they affect European anglers, salmon, trout, gwiniad, grayling, charr, pike, perch, ruff or pope, tench, carp, chub, rud, bream, roach, dace, gudgeon, bleak, minnow, loach, bullhead, and stickleback. It is supposed that this list might be greatly increased by the industry of man, and facts go to prove that many kinds of salt water fish are easily brought to live in fresh water. Dr. Macculloch informs us, that this capability has been long known in Sicily, particularly with regard to the *cefulo*, a species of mullet. Whenever these are taken from the sea by the fishermen, they are thrown into the fresh water lake Lenterni, where they are kept for use, and where they increase in size, and improve in flavour: it is to be observed that this lake has no communication with the sea.

2858. *The capability of some fish to live indifferently in salt or fresh water*, has suggested the attempt to naturalise many more. The Hon. Daines Barrington gives evidence that the smelt and grey mullet have been found to live and thrive in fresh water lakes. (*Phil. Trans.* p. 312.) Salmon, it is also known, can be kept alive; and, it is said, have remained healthy in occasional intances when prevented from returning to the sea. We are likewise informed in the *Statistical Account of the Parish of Lisman*, vol. i. p. 485. that about fifty or sixty years ago, there were some sea trouts carried to their fresh water lakes, the breed of which preserves their distinction perfectly clear to this day: they retain their shining silver scales, though they have no communication with the sea; their flesh is as red as any salmon, and their taste is totally different from that of the yellow trout.

2859. *The fishes which inhabit both salt and fresh waters* are, salmon, the varieties of sea trout, the eel, the smelt, the flounder, the mullet, the shad, the barbel (partially), and the Roman muræna. These are commonly known as gifted with this property: it is however probable, that the list will be considerably augmented by future discoveries. The pike, it is now ascertained, will live and thrive in brackish water; the silure, the largest river fish known, will do the same; and a fish common to the Italian rivers, called the serte, which is a species of *Cyprinus*, described by Gesner under the name *Copito Anodromus*, is found both in the fresh waters and the sea. Perch also have been washed by floods into the large estuaries, where they have not suffered by the removal. Carp likewise have proved themselves equal to the change to salt from more than brackish water; and we think it probable, thatt here are few fish that might not be gradually accustomed to the removal from one to the other. Between some few, however, it is probable that an inseparable line of distinction is drawn by Nature. In their migrations from the fresh to the salt waters and back again, fishes appear to be influenced by various instinctive impulses. In most of them, however, the migration from the salt water to the fresh has one leading principle; and, even in the instance of the eel, this motive is to find a convenient spot in which to produce their young. This being done, the parent fishes seek to return to their feeding element, where alone they can hope to regain their flesh and recruit their strength. In nearly all these cases fish migrate to the sea for the purpose of obtaining abundance of nutritious food in the shape of small fish, sea insects, &c. The salmon, on an average, remains but two months at sea, and passes the remainder of the year in some part or other of its native stream, whither it returns for the main object of propagating its species. Much error has been propagated relative to the migration of eels; some undoubtedly breed in the sea, others in fresh water. The eel, as has been contended, is not viviparous, but spawns like other fish, which has been proved by Mr. Andrew Young of Invershin, Sutherlandshire. We shall, in another place, have occasion to revert to the probability of modifying, to a permanent residence in fresh water, the constitution of a greater number of marine fishes than at present is supposed capable of such change. It may, however be here remarked, that it is most likely to succeed with such fish as, by frequenting our estuaries, may be supposed to be already able to support, in a degree, a privation of that which gives to salt water its particular properties. Certain it is that the fatal consequences resulting from a change of situation from either the salt to the fresh, or from the fresh to the salt waters, are by no means the same in the periods at which they take place in different species; and this consideration might lead to a hope, that those fishes on which the change operates by more slow and less violent degrees, might be brought eventually to survive such alteration. It is evident that a long course of patient investigation, with numerous experiments on a large scale, is required to determine a question so curious to the naturalist, and so important to the economist.

SUBSECT 1. *Fishes as Gregarious or Solitary.*

2860. *Gregarious fishes* are inhabitants of rivers and lakes, as well as of seas and oceans. By congregating, fishes perchance hope to escape their enemies; and by their condensation in shoals, they may also somewhat increase their temperature. The sturgeon, cod, ling, haddock, herring, pilchard, and smelt, are striking examples of gregarious marine fishes. Most fresh-water fish congregate in larger or smaller communities; some, as gudgeons and minnows, flock together in vast shoals. Among the gregarious fresh-water tribes we may notice the minute stickleback, whose numbers in particular seasons are so great, that they are sold by the bushel for manuring the land. Most of the insectivorous fishes, as roach, dace, and chub, are usually found united in small or large communities, according to their means of space and food. Carp and tench have a disposition to associate together, and the perch is so perfectly gregarious, that if one be taken the rest also are sometimes secured.

2861. *Solitary fishes* are perhaps rendered so more by compulsion than choice, most animals having an instinctive disposition to associate for safety against their enemies. This necessity is however not felt in those whose powers and habits fit them rather for offence than defence: on the contrary, seclusion to them is necessary, as otherwise constant competition would defeat its own purposes; and while the voracious were quarrelling for the spoil, the destined victim would escape.

SUBSECT. 2. *Migration of Fishes.*

2862. *The travelling propensity in fishes* is of great importance to mankind in general, so much so, that we have headed our subsection with the figure of the herring, one of the most important of these wanderers. It is by these and other finny migrators that the blessings of a fish diet, in superabundance, are periodically bestowed on shores remote from each other. If such fishes were constant residents on any one spot, we might feed on them to satiety; but by a temporary deprivation we learn to estimate the value of the visit, to appropriate its benefits, and to hope for its return. In the migration of fish, the economist is not the only one interested: the philosopher also contemplates it with eagerness; and the naturalist, comparing its phenomena with the wanderings of other tribes of the animal creation, observes the same wants, the same instincts, and similar impulses, acting throughout. Fishes, like birds, are capable of traversing immense distances; but, unlike them, affect very different temperatures, and subsist on very diversified food. Thus the herring, which is thought to choose the coldest spots in winter, seeks the hottest situations in summer. These migrations of fish are

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partial or extensive: the salmon, the sea trout, &c. merely move from the neighbouring seas into their natal rivers; while other marine fishes, inhabitants of our seas, only leave the deeps to approach the shore during the summer months, thus changing a pelagic for a littoral character. The herring, the pilchard, &c. on the contrary, it is thought, resort during the winter to remote and frigid seas; and, as spring advances, they retrace vast distances to visit warmer situations. These migratory propensities are partly voluntary, and partly the consequence of an invincible, instinctive impulse, dictated by various necessities, as the search for food, a change of temperature, or the multiplication of their offspring.

2863. *Great irregularity attends the migratory movements of fishes:* unlike, in this respect, those of birds, they appear regulated by circumstances beyond our comprehension. Thus haddocks, in vast shoals, visit our Yorkshire coast annually about the middle of December for many years together; suddenly they disappear for a few seasons, and then resume their yearly visit. The mullet is also an instance of this deviation from rule. In July, 1804, the red mullet visited the mouth of the Ex in such numbers, that they were sold for sixpence per dozen; for some years before not one had been taken on the coast. That the herring is influenced by this seeming caprice is evident from the fact, that its myriads altogether desert their former resorts, never more to return. Thus, until the middle of the sixteenth century, the great bank for herrings was along the coasts of Norway; but since that time that coast has been deserted by them for our own shores. At Allanby in Cumberland, the herring is found to pay its visits during ten consecutive years; then, for ten years more, to abandon the channel; and these revolutions are performed with perfect regularity; and we, benefiting by them as we do, watch their approach with extreme anxiety, and send out vessels innumerable (see *fig.* 470. p. 954.) to greet their arrival, and to introduce these our benefactors to a grateful public. Neither man, nor their still more destructive foe the finfish, or the cachelot, dares to pursue them in the highest latitudes, where the quantity of insect food which these seas supply is very great; and in that remote situation, defended by the icy rigour of the climate, they live at ease, multiply almost beyond idea, and are safe from the pursuit of their enemies.

2864. *The cod also migrates from the northern seas*, and spreads its valuable masses at stated periods along the coasts of Europe and America; numbers are, however, indigenous to Britain, and remain perpetually in our seas. The *hake* appears to have two periods of appearing on the British shores, an early and a later one, the first of which visits is probably in pursuit of herrings. The *mackerel* at stated seasons swarms on the European and American coasts, and then retires, it is supposed, to the polar seas. The *tunny*, a large variety of the mackerel, enters the Mediterranean about the vernal equinox, in a triangular phalanx, of which the point cuts the water, while an extensive base is presented for the tide and currents to act against and impel forward. *Eels*, like salmon, &c., make periodical migrations from the salt to the fresh waters, and *vice versâ:* some of them not seeking the shallows of rivers to deposit their spawn, retire for that purpose, as has been already stated, to the sea; and their young, soon after hatching, are seen in myriads running up the streams to naturalise themselves in the fresh water.

2865. *Fishes appear to hybernate;* but on this subject we have much to learn, though facts are already known which afford a strong presumption that such is the case. That many congregating fish imbed themselves in the muddy bottoms of deep seas, or beneath the thick crusts of ice in polar oceans, seem well established facts. Eels, it is well known, betake themselves to the mud in severe weather, remaining in a state of torpor, clustering round each other, or nestling under weeds, straw, or any other matter which affords them shelter and protection from the cold. The carp also, there is reason to believe, retreats occasionally to the bottoms of deep ponds, where it has been found with the head imbedded in the mud, to shelter and protect it from cold.

SECT. II. *The Food of Fishes.*

2866. *The food of fishes*, like that of other animals, is various: some are principally supported by animal substance in mass, and may thence be termed *carnivorous.* Of these there are two kinds; those predatory tribes which subsist only on living fish which they catch themselves, and those which will take any animal matter, living or dead, of which the shark, mackerel, cod, and flat fish, are instances. A third class principally live on *Mollusca* and *Crustacea*, and are furnished with organs expressly adapted to such sustenance. Great numbers are *insectivorous*, being principally nourished by aquatic insects. Others again are *phytophagous*, or eaters of vegetable matters. *Algæ* and *fuci* form the principal food of some marine fishes. Succulent water plants we know to be likewise necessary for some freshwater fish. It is a curious fact also, that while some seals are purely carnivorous, others are truly phytophagous; but the largest portion may be considered as *omnivorous*, using at times all these substances as food indifferently. Some of those members which occupy a distinguished place in the angler's catalogue, seem likewise to lay claim to the title of *graminivorous*, for wheat, barley, and all the farinæ are devoured by them with avidity. Bread in all its forms is a tempting food; and this alone is a sufficient refutation of an opinion prevalent with some, that they mistake grain in its solid state for the larvæ of insects. Ground baits also, the base of which is commonly farinaceous, is another proof of this.

2867. *Fishes, like birds, seek an almost constant supply of food;* but, unlike them, they can abstain from it for a long time, resembling, in this particular, the other cold-blooded animals. Under some circumstances abstinence is *voluntary*, as during the spawning season, when most fishes are observed, some partially and others wholly, to refrain from eating. During particular states of the atmosphere, fish are disinclined to take food, as when it is highly charged with electric matter. This is well known to the fly-fisher, who finds it vain to tempt the trout if a thunder cloud hangs over his head; or if there have been a frost, and the wind be in the east it is with little chance of success that the "bottom-fisher" presents the well-scoured worm. The capability of abstaining from food in fishes is a physical property regulated by necessity. Pike, voracious as they are, can live in a pond in solitude without any apparent prey, certainly without any of the flesh kind. Gold and silver fishes, it is well known, are kept for a considerable length of time on river water alone.

2868. *The voracity of fishes* is as remarkable as their abstinence; and although there are degrees of difference among them, yet the quality may be considered as common to all. In our rivers the pike forms the most prominent example; and it is in consequence of this quality that the troller finds him so easy a prey. This tyrant of the fresh waters has been known to gorge a hundred roaches in three days; and yet he can fast from animal matter for months. The other fresh-water tribes, though more dainty in their choice of food, have a similar disposition to predatory warfare on each other, and if less insatiate, are equally sanguinary, preying on those around them without mercy. But to view this voracity in its most striking aspect, we should direct our attention to the ocean, the all-devouring ocean as it has been truly called, not only with reference to its own havoc on human life, but equally so with reference to the general character of its inhabitants. The *Squalus*, or shark genus, is voracious to a proverb. For days and weeks a shark will accompany a ship on its voyage, allured probably by the effluvia of animal matter. Whatever is thrown overboard is greedily devoured; and even the hapless sailor who becomes its prey, makes but one meal for its all-receiving stomach. Rapacity is universally at work from the least to the greatest. The smaller fishes subsist on the spawn of others, or pursue the tiny fry; these, likewise, are preyed on by the haddock, whiting, &c., which in their turn become food for the cod, that again, when thus satiated, is destined to fill the jaws of the shark, or some other glutton. In the midst of this acknowledged voracity in fishes, their capability of subsisting on water alone finds many advocates, and among others Mr. Daniel, who grounds his arguments on the constant absence of food from the stomach, that of the herring being always empty when caught. But having already fully entered on a consideration of this subject, when describing the anatomy of the digestive organs of fishes, we need add nothing in refutation of the capability of these animals wholly and permanently to support themselves without solid food. They have undoubtedly strong powers for long abstinence from such nutriment; but it is contrary to the analogies of Nature, and inconsistent with the existing phenomena of the alimentary canal of the herring as well as of salmon, which are exactly in the same predicament, to suppose that water alone supplies the permanent wants of these or of any other classes of fish.

2869. *The flying fish* (*Exocetus volitans*) is furnished with organs purely defensive. When pursued by dolphins, bonitos, dorados, and other fishes of prey, it leaps from the water in the same manner as the salmon before the porpoise, skimming the surface of the ocean in its flight, somewhat like roach and dace before the pike. The flying fish is seen very frequently in the Atlantic, and in the Caribbean sea, and is about the size of a herring. The impetus with which it springs into the air carries it sixty or seventy yards, until, its fins becoming dry, it again sinks into the water, where, if it finds the pursuit continued, it repeats its flight. Captain G. Tobin, whose opportunities of observing this fish were considerable, thus describes it: — "The lower half of the tail in the flying fish is full twice the length of the upper: the use of it has always appeared evident to me. I have by the hour watched the dolphins and bonitos in pursuit of them; when, without wholly immersing themselves, which would have proved fatal to them, they have disposed in their progressive motion the lower part of the tail in such a manner as to supply their wings with moisture, and thus to support them above the surface. I never saw one exceed the distance of a hundred yards in its flight, without being obliged to dip for a fresh supply." The species so common in the Mediterranean, we are informed by Shaw, is sometimes seen singly, and sometimes in small shoals. Instances are not unfrequent of its falling into ships during the decline of its flight. It is considered an agreeable fish for the table, and by some is even preferred to the herring. The general height to which it is observed to take its flight is about three feet above the surface of the water. The structural description of this extraordinary tribe of fishes is more fully detailed in the anatomical accounts of the fish organs (p. 943.), where another species of these singularly-gifted animals is described.

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2870. *The duration of life in fishes* is known to be considerable. It may be said to exceed that of most other animals. Gesner insists strongly on this point; but it does not appear to have been the opinion of the ancients. Pliny allows only two years as the life of the tunny, a fish which frequently weighs a hundred pounds: — *Vitæ Thynnis longissima biennio.* (*Plin. Hist. Anim*) We might, without further proof, attribute longevity to fishes on a mere consideration of the peculiar circumstances in which they are placed: the medium they inhabit is but little variable in temperature, their supply of food seldom fails, and their haunts usually afford them protection from danger. A structural examination of fishes still more plainly evinces their capacity for long life. The very base of the fabric, which in other animals becomes rigid and incapable of extension soon after puberty, is in them originally composed of a mixture of bone and cartilage, which keeps it ever pliant and capable of extension or growth; and so slow is the process of ossification in them, that even the longevity which some are known to attain, is not attended with the rigidity or decrepitude of land animals. But that which would more particularly lead us, *à priori*, to suppose them long lived, is the protracted period of their adult or mature state: their puberty bears no relation to this. A fish destined to grow to the length of thirty inches will procreate when it has reached one-third of this length; and though its life should be extended to forty or fifty years, its sexual powers may commence at the second or third year. It was by this fallacious view, that the ancients were led to form such an erroneous opinion of their pubescence.

2871. *Much has been asserted*, *pro* and *con*, on the capability of individual fishes to attain extraordinary dimensions. In a pond near Radnor Forest, the property of the Earl of Essex, which had been stocked fifty-eight years, a hundred brace of carp were taken out, each weighing from fourteen to fifteen pounds. The regularity of these dimensions is a full rebutment to the argument, that enormous fish are monstrosities; and that such growth is a specialty, and is not congenerous. From Gatton Park a brace of carp was taken which weighed thirty-five pounds. Mr. Pennant speaks of a single one which weighed twenty pounds. In the Thames roach used to be taken which were nearly three pounds in weight; and mention is made of a monster which had reached five pounds. From a pond near Radnor Forest some eels were taken, one of which weighed eight pounds; and indeed eels (undoubtedly not congers) have been taken of fifteen pounds' weight. It is recorded that in January, 1825, two extraordinary eels were picked up on the saltings on the east coast, which were considered by persons supposed to be competent judges, to be the true fresh-water silver eel (*M. Anguilla*), one of which weighed sixty-two pounds, the other fifty-seven pounds. It is, however, most probable that these were congers.

2872. *Of the sizes and weights to which pike have attained* we have numerous accounts. Colonel Thornton informs us that in Loch Alva he took a pike which wanted only two ounces to weigh fifty pounds: a plate of that fish is made public. The *County Chronicle* gives an account of a pike taken in June, 1822, from a pond at Chillerton near Brewood, Staffordshire, the seat of C. J. Giffard, Esq., which measured from head to tail four feet three inches, and weighed forty-six pounds. Within it was a trout of four pounds and a half, and a mole, which the gormandiser was devouring when taken. From Munden Hall Fleet a putrid pike, killed by a late frost, was taken, which then weighed forty-two pounds; and from the Lewes river the gamekeeper of — Shiffner, Esq. of Combe, extracted a dead pike which had become jammed between a willow stump and a bank, and which in its wasted state weighed forty pounds. Visitors to the royal ponds at Marly were shown fishes which had been in existence in the time of Francis the First, and had become remarkably tame. These Nestors had been individually known to all the attendants in succession, who had taken care of them from that time to the present: their size is immense, and their vigour is unabated. The enormous gold and silver fishes in the royal gardens at Rouen cannot have escaped notice: these, we were informed by one of the garden keepers, had existed with little alteration, either in size or appearance, within the memory of man. The records of history, apparently well authenticated, contain accounts of carp which have existed two hundred years; and mention is made of a pike two hundred and sixty years old. It would be very satisfactory if these facts were fully authenticated. It is unfair to those by whom they have been asserted to discredit them on mere supposition; nor is it much less fair towards ourselves to receive them without authentication.

SECT. III. *The Dietetical Uses of Fishes.*

2873. *The edible qualities of fishes* render them most important to mankind: tens of thousands live wholly on a fish diet, hundreds of thousands are mainly fed by their means, and millions are under obligations to them for a part of their nutriment. They form at once the support of the poor and the luxury of the rich; and they appear to have been in all ages a favourite food of man. The Scriptures abound with examples of this kind, and profane history is equally replete with proofs of the industry employed in the search after edible fishes. If it be alleged that it was to the confined range of science in those times that they were so much in use, we reply that, although cultivation has augmented the resources of man, yet that which might have been forced on him formerly by necessity, is still received with undiminished avidity as a convenience or a luxury. Among aboriginal nations and tribes, fish as an edible naturally presented itself as a ready means of satisfying their wants. Little preparation and no culture were required; the animals bred and thrived within reach of man in his rudest state, and their unwariness rendered them an easy prey. Fish is therefore found to form the principal diet of most savage nations in countries bordering on the sea. In northern climes, particularly, the sterile nature of the country provides little save fish for the support of the inhabitants. The Greenlander and the Esquimaux of Labrador, placed in a region of eternal snow and ice, finding few articles of human sustenance, are almost wholly supported by the seal, the whale, and the reindeer, but more particularly by the former, which is as valuable as the cocoa nut to the Indian, or as sheep and oxen to ourselves: almost all their wants are supplied by it, and the extra quantity is bartered for a few superfluities obtained of the factor. With the skin and entrails they sew their garments; of the same materials they make their windows and their tent curtains; and its bones furnish them with fishing spears, harpoons, and hooks.

2874. *Seal hunting is therefore the most early and continued pursuit of this people*; and to excel in that, constitutes their distinguishing mark of superiority. The blood of the animal is their drink, the flesh their food, the subcutaneous substratum of fat illumines their subterraneous dwellings, and at once furnishes them with light and heat. In Lapland, also, fish are very important to the wretched inhabitants. The *Gadus Callaris* of Linnæus, a species of cod, is frozen by them in vast quantities for their winter consumption; and the arctic salmon, under the name of *angmarsæt*, is dried and powdered, and then formed into bread, either alone, or in mixture with some farinaceous matter. Their fish bones ground into powder are used in forming a kind of coarser bread for their own and their cattle's consumption. In the South Sea Islands fish likewise forms the principal article of sustenance. Their enormous crayfish are also of extreme importance to them, being in great plenty, and easily obtained.

2875. *The rude modes of catching fish*, and the implements employed among the early inhabitants of the world, were plain and simple in the extreme; and where civilisation has not yet extended its benefit, they still remain so. Experience, has, however, taught some uncivilised tribes to practise their arts of capture with considerable dexterity; and has enabled them to manufacture from their limited resources very ingenious implements for the purpose. Others, however, whose mental development is deplorably restricted, still exhibit in these arts nearly the whole of their aboriginal rudeness. The natives of New South Wales display signal instances of the slow progress of reason and intellect. An inspection of their instruments, and a knowledge of their modes of using them, would, without due consideration, excite wonder how they ever succeeded in their endeavours to take fish. Our observation, however, teaches us that the animals around us adapt their resistance to the artifices employed to take them. Every experienced angler knows, that to catch fish in the Thames or the sea, or in fact in any much *fished water*, the best artificial tackle must be used, and that the manner must demand at least as much skill as the matter. In a stream little frequented, on the contrary, the fish hurry as it were into the snare, and strive who shall first take the new bait. An old trout in an oft-frequented river will become so wary as to elude for many seasons every attempt to take him, though diversified by worm, fly, and minnow, and shall perhaps at last only fall a sacrifice to an unsportsmanlike death by the net. Such a one, in our early fishing days, we remember at Hampton, which had taken more flies and broken more hooks and lines, for one old fisher only, than would stock a moderate pouch. After many seasons, however, spent in this distant acquaintance with so many anglers, one fatal day brought him to land, weighing nine pounds and a quarter. The rude implements of the savage tribes are therefore successful, because the fishes of their waters are unwary and voracious, particularly the sea fishes.

2876. *An ingenious mode of setting fishing nets under the ice* is practised by the Indians in Hudson's Bay, by which they supply themselves with great quantities of fish. They first ascertain the exact length of their net by stretching it out; a number of holes are then cut in the ice at ten or twelve feet distance from each other, and sufficiently numerous to extend the net its full length. A line is then passed under the ice, by means of a light pole first introduced at one of the end holes. With the aid of two forked sticks, this pole is easily conducted or shoved from one hole to another under the ice, till it arrives at the last. The pole is then taken out, and both ends of the line being properly secured, it remains always ready for use. The net when wanted is made fast to one end of the line and hauled beneath the ice, a large stone being tied to each of the lower corners to keep the net expanded, and prevent its rising from the bottom. In order to search a net thus set, the two holes at the extremities are opened, the line is veered away by one person, and the net hauled from under the ice by another; after the fish are taken out, the net is easily drawn back to its former station, and there secured as before for future examinations.

Subsect. 1. *The Dietetical Use of Fish among cultivated Nations.*

2877. *In the catalogue of edibles* of every civilised country, fish, as we have already stated, occupy a distinguished place; but their value as an article of food has been subjected to great variations. As luxury treads on the heels of civilisation, the first alteration in the general taste of a people, with regard to fish as food, would depend on the difficulty or ease with which it was procured among them, for man ever sets an artificial value on that which is obtained with the greatest difficulty or expense.

Previous to this the preference would naturally be given to such fish as were most readily obtained, or were found to afford the greatest proportion of nutriment. But as refinement proceeds, fish in common with other food becomes subjected to the thraldom of prejudice and the caprice of fashion. Locality must also influence the choice and consumption of fish; thus the inland natives would affect fresh water fishes, while the borderers would seek a larger supply from the sea. In all times particular kinds of fishes have been preferred to others: for this selection it is not always easy to assign a natural cause. The Persians eat no sturgeon, while their neighbours the Greeks are extravagantly fond of it: and this same fish, now but little prized by us, was in former times brought to table, as in the reign of the Emperor Severus, by servants with coronets on their heads. The Greeks again, though great lovers of fish, avoid the enormous carp of their fresh waters. These, however, are so much esteemed by the people of Paris, that in Lavoisier's time eight hundred thousand were annually consumed in that capital. The bream, of which in England we think most meanly, is also much valued by the French, who have a proverb, "He that hath breams in his pond is able to bid his friend welcome." The Romans, equally luxurious and much more refined, on the contrary despised them, with the exception of the lamprey, of which they were so extravagantly fond, that stories truly wonderful are told of the value they attached to them. Caius Hirtius first introduced the keeping of the lamprey in stews, and lent to Cæsar, during the time of his triumph, six hundred of these fish, for which he would receive no equivalent in money, nor any other commodity, but stipulated that repayment should be made by the same number and weight of lampreys. In our times the eel, though a favourite with the English, is avoided by the Hebridians, who consider them as a species of serpent. The conger, which is absolutely rejected by the upper classes, and is even in little estimation among the lower classes in England, is by the Spaniards and Portuguese dried and powdered to thicken and give taste to some of their best soups. The Scotch and Irish generally *hate eels.*

2878. *The consumption of fish* in many countries is greatly influenced by religion. For example, a fish feast of a religious kind is made by the savages on the banks of the Lake Huron, on which occasion they invoke the spirits of the seas over their nets and canoes, and entreat them to be propitious in their fishing enterprises. The Ichthyophagi mentioned by Herodotus were probably influenced by some such motive. Nearly one-third of the year is spent by the Russians, who profess the Greek faith, in abstinence days, at which times fish alone is eaten. It is probable that our naturalisation of the carp, tench, &c. was encouraged by the days of abstinence, when the country was still Roman Catholic. The remnants of this principle are still seen in our salt fish repasts during Lent. It would have been well had the regulation which prescribed the eating of fish instead of flesh extended itself to the importation of a few more of the continental fishes. The barbel, perhaps the very worst of fish with which our waters abound, is eaten by the lower orders of Jews in considerable quantities during their fasts.

Subsect. 2. *The Herring Fishery.*

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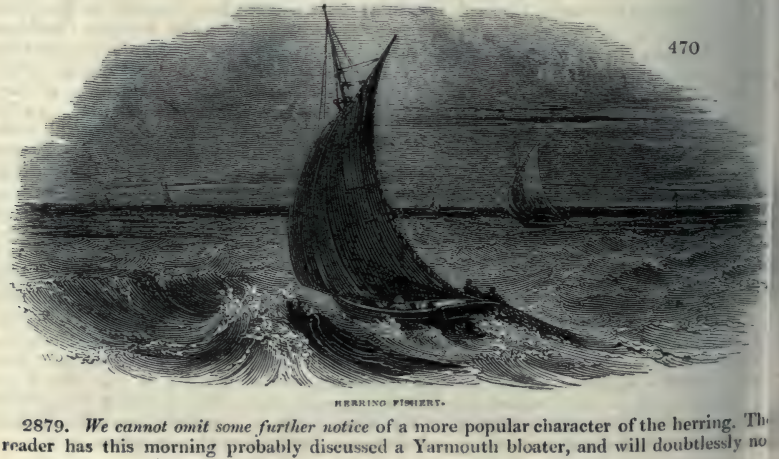

HERRING FISHERY.

2879. *We cannot omit some further notice* of a more popular character of the herring. Th reader has this morning probably discussed a Yarmouth bloater, and will doubtlessly no object to a short notice of its qualities, founded on our own knowledge and the experience of others. The great rendezvous of herrings is within the arctic circle; where, according to Mr. Pennant, they continue many months in order to recruit themselves after the fatigue of spawning, the seas within that space swarming with insect food in a far greater degree than in our warmer latitudes. In the spring they again begin to move southward, and shoals appear off the Shetland Isles in April and May, but these Mr. Pennant thinks are only forerunners of the grand shoal which comes in June. The vast mass having visited the Shetland Isles divides into two parts; one wing takes to the east, the other to the western shores of Great Britain, filling every bay and creek with their numbers. The neighbourhood of Yarmouth, the great and ancient mart for herrings, swarms with them, and the British Channel is next visited, to the joy of its inhabitants. The other division, after offering themselves to the Hebrides, where the great herring fishing station is, proceeds towards Ireland, and from thence they make their way onward, and are lost in the immensity of the Atlantic. They sometimes frequent certain localities in vast shoals for a series of years, and then utterly desert the same places. A recent work states that they have for some years past wholly forsaken Loch Long, in Argyleshire, though they still abound in Loch Fyne. (*Sportsman in Scotland*, ii. 194—275.)

2880. *The manner of taking the herring* is by means of vessels called busses (*fig.* 470.), of from twenty to five-and-thirty or forty tons, or even greater burden, each furnished with a sufficient number of boats. The return of the herrings to the Scotch coast is certain; but their visit to any particular loch or inlet is capricious; so that the busses search from place to place, and when they have discovered them, they anchor in the nearest harbours to the fishing ground, from whence they send their boats to fish. Each boat requires four men, or a number proportioned to the tonnage of the buss. In a scarce fishing season each boat has two trains of nets, two hundred and eighty-eight yards long, and from eleven to twelve yards deep: when herrings are plentiful, half this quantity of netting is sufficient. The nets are set, beginning with the first end to windward, stretching the train right to leeward. If in deep water (which, until the herrings set into the lochs, it generally is) both trains are tied together by the back rope and sole, or skonke, which will stretch five hundred and seventy-six yards in length, and in this case the boat is tied to the leeward end of the train, and allowed to drive with the nets to the leeward, the fishermen every half hour, or oftener, trying if there be any herrings in the nets. This they do by warping along the back rope, and here and there raising a piece of the netting. By this means they not only find when they are upon good fishing ground, but they see whether the herrings swim high or low, and their nets are raised or sunk accordingly, by shortening or lengthening the ropes that are fastened to the buoys which sustain the nets. The proper food of the herring is unexplained; it is said they have been taken by means of unbaited hooks. They themselves form a chief food of numerous other fishes of northern latitudes, and they constitute the best baits for many other kinds of sea fish.

2881. *The British fisheries*, which, besides the herring, embrace the cod, the ling, haddock, skate, halibut, turbot, &c. are collectively termed the *white fishery*, and form a very extensive commercial establishment. Mr. Loudon says, "The whole extent of sea, from the neighbourhood of the Orkney and Shetland Islands to Iceland on the one hand, and to the coast of Norway on the other, and along the eastern and western shores of Scotland to the Flemish banks on the east and the coast of Ireland on the west, may be considered as one great fishing domain, over which the different species of the cod genus are most plentifully dispersed, as are also turbot, skates, soles, haddocks, and whitings. These fish, which constitute collectively what is usually called the *white fishery*, surround, as it were, the whole of North Britain, and give to that portion of the United Kingdom advantages of which its southern neighbours cannot boast."

2882. *The cod* (*Gadus morrhua*, *fig.* 471,) is the principal object of this fishery, and yields in importance only to the herring. It is indigenous to the northern and temperate latitudes, and is therefore taken in sufficient plenty for our immediate consumption on our own coasts; but the principal rendezvous for cod is on the great sand-banks of Newfoundland, and the other banks that lie off the coast of Cape Breton. These situations they prefer for the quantity of worms produced in the sandy bottoms, which is a tempting food to them; but another cause of their attachment to these spots is, their vicinity to the polar seas, where they return to spawn, and deposit their roes in full security. So soon, however, as the opening season admits of their getting to the more southern seas, they are induced to return thither for a change of food. The principal fisheries for this fish were on the coast of Ireland and off our western isles before the discovery of Newfoundland by Cabot, about the year 1500; and although the English began settling there twenty years afterwards, the fishery did not flourish until 1577, when England had the least share of it. Mr. Anderson in his *History of Commerce* says, the French began to fish there in 1836; and it is somewhere asserted, that their pretence for fisning for cod in these seas was only to supply an English convent with that article.

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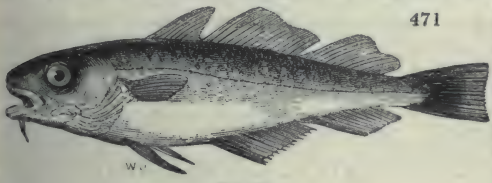

THE COD.

In our seas the codfish begin to spawn in January, and leave their eggs in rough ground among rocks. They recover more quickly after spawning than any other fish. When out of season they are thin-tailed, and have what are called fish-lice adhering to them. *Monoculi*, *Lernea asselina*, and *Lernea branchialis*, attach themselves to different parts of the body.

Sect. IV. *The Salmon Fishery.*

2883. *The salmon* (*fig.* 472.) *fisheries*, as a medium of commerce, cannot but interest as well the public at large, as the observant fisherman in particular. Neither is the general angler unconnected with them, consequently some cursory notice of the subject cannot be deemed irrelevant. The salmon, be it observed, owes little to man; we are altogether its debtors. It does not prey on the produce of the soil, but it owes part of its bulk and nutritive qualities to the destruction of its congener tribes. It leaves its native river at an early stage of growth, and going to its sea feeding grounds, returns of ample size and rich in human nutriment, forcing its way up our rivers and streams.

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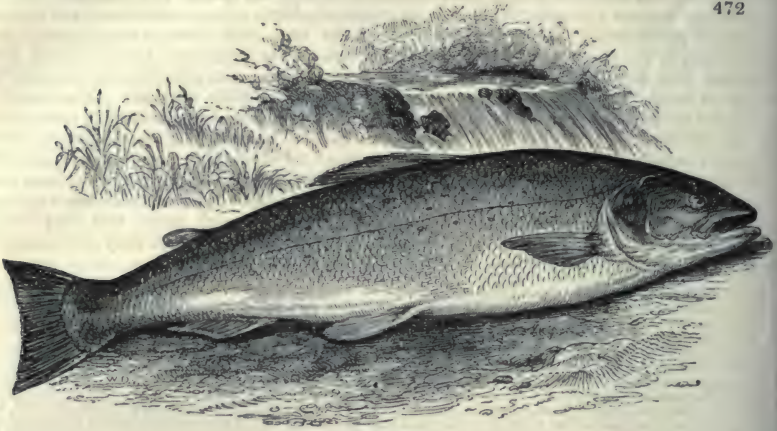

THE SALMON.

2884. *The migrations of the salmon* being constant from the sea to our rivers and fresh-water lakes, and its visits being always to the resorts quitted the same or the preceding year, render it, as it were, private property. Such indeed it is considered; and the prices for which those fisheries are let, and the care with which they are preserved, are a sufficient proof of the estimation in which they are held.

2885. *The migrations of salmon* are irregular in regard to time. The discrepancies of the accounts with reference to the appearance of them in different rivers, afford a full proof that they are influenced by circumstances which do not operate at different places at the same time; and that therefore to state a precise period when salmon universally *run*, as it is termed, or, in other words, ascend the rivers from the sea in search of a convenient spot to deposit their spawn, betokens an ignorance in the generalisation of facts, and occasions error and confusion. It appears, however, that a few enter the rivers in the early spring months; as the summer advances the numbers increase, particularly of grilse. Those which arrive first spawn earliest. The "throng" spawning time is about the middle of November. The majority of the spawned fish remain in the rivers during winter, and migrate to the sea in the spring months. Those which spawn first migrate first.

2886. *The season of perfection in the salmon therefore*, far from being definite, is liable to the operation of the same causes which influence them to leave the sea for the fresh water. Thus the salmon of some rivers are said to be *in season* while the milt and roe are in advance but not fully perfected, when those of other rivers are either past the period of perfection, or not yet arrived at it. A latitude is thus occasioned of even three or four months, and hence we may readily account for the different and conflicting statements of those who attempt to fix precise times and seasons for this perfection. According to the general testimony of most witnesses examined before the House of Commons at various times, November, December, and January are the principal spawning months; consequently these months cannot be proper for the exercise of the angler's amusement: such are the anomalies and such the discrepancies that, as already observed, no regular period can be determined on. As a general rule, salmon are in season on their return from the sea; and their condition depends on the time they have remained at sea, and on the abundance and quality of food they have found there.

2887. *The nature of the situation* renders the methods employed in the taking of salmon liable to much variety. These practices may be divided into legitimate and illegitimate: the former are those recognised by law, and by the understanding between the landlord and tenant; the latter are neither allowed by law, nor acknowledged between lessor and lessee, nor are they considered fair in a sporting sense. The legitimate modes of salmon fishing differ, as the station of the fishery is confined or open. "In the extensive estuary of Solway Frith, which separates Cumberland and Dumfrieshire," observes Mr. Loudon, "Two of the several ingenious methods there practised are entitled to particular notice. Besides the open channels which are worn by the Esk, the Eden, and other rivers and brooks that empty themselves into this common estuary, the sands of which its base is composed, and which are left dry at low water, are formed into ridges and valleys by the tides and tempestuous weather. The lower ends of these valleys, or false channels, are wide and deep, opening downward towards the sea, their upper ends growing narrower and shallower until they close in points at the tops of the sand-banks. As the tide flows upward, the salmon, either in search of food or the channel of the river to which they are destined, enter these valleys or lakes; but finding, on the return of the tide, that their passage farther upwards is stopped, they naturally return with it into deep water, where they remain until the next tide. The manorial proprietors of these sand-banks having discovered this fact, have from time immemorial run lines of nets, during the fishing season, across the lower ends of these lakes or valleys, half a mile or more perhaps in width, the nets being suspended in such a manner, that they are lifted from the ground by the current of the tide in flowing upward, so that the fish find no difficulty in passing beneath them into the lake; but at the turn of the tide, their lower edges fall down close to the sand, and effectually prevent the salmon from retreating. They are in consequence left dry, or in shallow water, and are thus easily to be taken by hundreds, perhaps, at once." Salmon are frequently taken in estuaries by bag and stake-nets.

2888. "*In the river fishing for salmon*, nets of various forms, construction, and dimensions are necessary, as the river may be wide or shallow, or, as it may be, within or without the reach of the tides. The seine, or long draught net, is in general use; but its texture varies according to the size and nature of the other fish beside salmon which frequent it, as salmon-peals, trout, mullets, and other small sized fish, which are in some rivers very commonly taken with salmon. Here, therefore, a small meshed net is used, while another with more depth and wider meshes is retained, to be used during high water and strong currents, when the larger salmon do not fail to hasten upwards, and the same strength of hands which is able to draw a close shell on it, can work a deeper one with wider meshes. In wide rivers with flat shores a variety of nets are required of different lengths as well as depths, to suit every height and width of the water."

2889. *The salmon* is also caught with a spear, which they dart into him as he swims near the surface of the water. Graham, a farmer of a fishery at Whitehaven, uses the spear for taking this fish in a curious and novel manner, which he appropriately calls salmon hunting. The time for this sport is when the tide is out, which leaves the fish in shallow water, interrupted by sea banks near the mouth of the river or inlets upon the shore, where the water is from one to four or five feet deep. Armed with a three pointed barbed spear, having a shaft fifteen feet long, Graham on horseback gallops belly deep into those pools which show, by the agitation of the water, that there are salmon in them. He makes ready his spear, and having overtaken a fish, he strikes it with almost unerring aim: by a twist of the hand, he then raises it to the surface of the water, turns his horse's head to the shore, and forces on the salmon to dry land. His father was the inventor of this extraordinary method of fishing for salmon.

2890. *Salmon are likewise taken* by what is termed *leistering*, or *burning the water*. This practice consists in attracting the salmon by means of a candle and lantern, or sometimes of lighted wisps of straw, and in then endeavouring to strike them with a spear or leister. This unhallowed practice is noticed in Mr. Lockhart's *Life of Sir Walter Scott*, on an occasion when the great bard was present. Mr. Skeen, who accompanied the party, relates how Sir Walter fell over the gunwale of the vessel, and that, had it not been for his assistance, he would have made an awkward dive of it. Indeed, at no time is this *burning of the water*, as it is called, engaged in without some hazard; for large salmon are usually to be met with in pools of great depth, which however it is not easy to estimate with precision by the light of a torch. Thus, when one of the persons engaged discovers a fish, and makes a determined thrust at him with his leister or spear, he is very likely to make a false calculation

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LEISTERING SALMON.

of the depth, when, intending by a desperate lunge to transfix the salmon, he plunges heels over head into the depth below, and the impetus thus given to the boat sends it to a distance that frequently deprives the adventurer of assistance. If, on the contrary, he has correctly judged his depth, and has transfixed the fish, nothing more is required than to haul it up, and to stun it with a blow on the back of the head, which will have the effect of crimping it. We have frequently heard the northern fishers speak rapturously of the animation excited by a leistering party; and without doubt, to some individuals, the scene must be most animating. The fall of the leaf is the favourite time for its practice, but we are glad that it has been lately put down by law. In rivers not very deep, a boat is not necessary, but waders enter the water by moonlight—not by the glare of the full moon, but in its first or last quarter. One of the party goes before with a light, and two or more follow with the leister, when the fish, struck with surprise by the light, suffer the party to strike them. It is, at best, but a poaching practice.

CHAP. III.

THE ORIGIN AND PROGRESS OF ANGLING.

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YOUTHFUL ANGLERS.

2891. *The practice of taking fish with a rod, line, and baited hook,* is called *angling,* and although now more frequently pursued for amusement than for profit, was without doubt in early times an indispensable occupation, and was forced on man to obtain food. Whether fish were first ensnared by line and baited hook, or whether other means preceded them, we have no opportunity of ascertaining. If conjecture be allowed to stand in the place of certainty, we should think it not unreasonable to conclude, that the fishes first obtained by man were such as he abstracted from the shallow pools, or from hollows left in the sands by the receding tide: these he would chase, and might either knock on the head, or transfix with a wooden spear. Observations made on the contents of the stomachs of such as were thus taken, would lead to a knowledge of the proper matters to use as *baits* for the enticement of others. His judgment would teach him to attach these around some *small pointed and curved instrument,* capable of fixing itself within the mouth or throat of the fish taking the bait, while he retained a communication with himself by means of some filamentary vegetable or animal matter forming a *line.* The adaptation of the line and hook to a *pole* or *rod,* was consequent on the necessity which soon became apparent, of casting and maintaining the line and hook at a proper distance. Such probably was the origin of angling.

Sect. I. *The Progress of Angling.*

2892. *The exact period* when this art assumed the character of a regular and systematic practice is unknown: we have however sufficient proofs of its antiquity. Figures connected with it as an art, are among the earliest sculptured relics; and the classic reader cannot fail to trace notices of its existence throughout many of the works of the ancients. In the sacred writings we have numerous proofs, that the *use of hook and line in the taking of fish,* was coeval with the early periods of the Jewish history; and also that angling was practised as an art, separate and distinct from any other less artificial methods in use for obtaining fish. In the book of Job (supposed to have been written even before Moses), we find a portion of the forty-first chapter, which commences in the sublimest style of eastern poetry, peculiarly apposite to our purpose, " Canst thou draw out leviathan with a *hook,* or his tongue with a cord which thou *lettest down?* " In the next verse we read, " Canst thou put a hook into his nose?" &c. &c. These interrogatories, it is evident, allude to the practices of angling with hook and line. In the seventh verse of the same chapter we also find the question, "Canst thou fill his (leviathan's) skin with barbed irons, or his head with fish spears?" which has likewise been thought to allude to the use of the angling hook. But this opinion, notwithstanding the authority on which it rests, we conceive to be erroneous; on the contrary, we consider this verse as intended to characterise a mode of taking fish altogether distinct from angling. The Egyptians, we know, had made great progress in the arts in the days of Moses; and we have no hesitation in concluding that, by "filling the skin with *barbed irons*," was meant transfixing fish with the ***harpoon.***

2893. *Pursuing these scriptural proofs* of the antiquity of angling, we may quote the prophet Isaiah, who has in ch. xxxvii. v. 29., "I will put my *hook* into thy nose." And again, in ch. xix. v. 8., "The fishers also shall mourn, and all they that *cast angle in the brooks.*" In the two succeeding verses we have a full confirmation, that angling was at that time an occupation distinct from netting or spearing of fish, as will be seen by a reference, "Moreover they that work in fine flax, and they that *weave net works*, shall be confounded." "And they shall be broken in the purposes thereof, all that *make sluices and ponds for fish.*" A notice on this subject is also to be found in the prophet Habakkuk, ch. i. v. 15., "They take up all them with the *angle:*" and again in the figurative description of Pharaoh by Ezekiel, which likens him to a great "dragon" (crocodile), who having offended the Almighty, is told by him through the medium of his prophet, "I will also put *hooks* in thy jaws, and I will cause the fish of thy rivers to stick unto thy scales." By *the fish sticking to the scales*, we may probably understand the remora, or sucking fish, which we know to be hurtful, and even destructive to large fishes by adhering to them with immovable tenacity. The lernea, the productus, the monoculus, and other parasites, also prove injurious to aquatics; but their attacks could hardly amount to the infliction thus threatened. In the New Testament the notices of angling as a distinct branch of fishing are few, but those of systematic net fishing are sufficiently numerous. We learn from St. John, ch. v. v. 5. and ch. xvii. v. 19., that marine fishing among the Jews was an important occupation. By St. Mark, ch. i. v. 16., the same is confirmed; and it further appears from this evangelist, that net fishing in the sea was an employment exclusively professed by particular persons, as with us. We judge also that the vessels used by them were large, and contained numerous hands. Of the extent of the nets employed some idea may be formed from St. John, ch. xxi. v. 10., where one hundred and fifty "great fishes" were drawn to land at one time. It may also be remarked, that the fisheries of those days appear to have been carried on much in the same manner as at present, the nets being suffered to remain all night in action under the watch of the fishermen, who were clothed in an appropriate dress. (*John*, xxi. 7.) This mode of fishing being recorded in so many instances in the New Testament, and the practice of angling almost unnoticed, constitute no proof whatever that the catching of fish by the rod and line was in disuse among the Jews. The contrary may be inferred from Matt. xvii. 26. The one circumstance which rendered fishing by nets so often a subject of remark was the selection of so many apostles from among those who pursued this occupation for the supply of fish as a necessary and welcome article of food among the Jewish nation.

2894. *During the flourishing periods of the Roman empire*, numerous instances occur in history of the value put on fish generally and in particular instances. As an article of luxury, modern epicureanism affords no examples of equal notoriety with those offered by the Romans. We have also accounts of the methods used to obtain their favourite fish, among which *angling* is noticed as an occupation both for profit and amusement. Trajan was an angler, and his practice of the art gave it imperial sanction. The piscatory exploits of Mark Antony and Cleopatra, with the *practical* retort of the latter, will be readily remembered.

2895. *The traces of the art during the middle ages* are faint: but that it *had a place* among the pastimes of "Merrye England" may be inferred from the genial praises bestowed upon it by the Dame Juliana Barnes, a Benedictine Nun, in the "*Book of St. Alban's*," as mentioned below.

2896. *The early history of angling in Britain* is confined within a very small compass. The parent art indeed may be traced in the various enactments made for its protection; but of that interesting branch which forms the subject of our discourse, even the industry of Mr. Strutt in *The Sports and Pastimes of the People of England* has failed to inform us. The first public notice which bears any claim to a systematic form among us appears in the writings of the Dame Juliana Barnes: but both before and since the prioress, the practice of it has been a favourite pursuit, and has consequently met with numerous eulogists and commentators, as may be seen in our bibliographical notices, to which we would refer the reader who wishes more minutely to trace its progress.

Subsect. 1. *The Character of Angling as an Amusement.*

2897. *Angling as an amusement presents features of great attraction:* it is far from dangerous or expensive, but on the contrary is productive of interest and amusement without any great pecuniary sacrifice. Its *apparent* simplicity allures many into the practice; and as a trifling success elates the tyro and leads him on by its fascinations, so he pursues it, although he soon discovers that extreme nicety and precision, great patience, caution, and perseverance, are essential requisites to the attainment of proficiency in the art. Nevertheless, he still continues the pursuit: difficulty after difficulty is overcome; each succeeding year adds to the interest of the practice, which he continues with undiminished ardour to the latest period of his life. It is asserted, and we believe with truth, that there is not one among the field sports that takes so permanent a hold on its votaries as this. It is no less remarkable for the variety it offers; for, like Proteus, it presents itself under many forms, some of which are suited to the taste of every age, of every rank, and every variety of character and habit. The sedentary, the thoughtful, and the advanced in life, may watch the float as it slowly moves with the stream, without disturbance to their train of thought, or without any fatiguing exertion to their person. The active and skilful may throw afar the leaded bait for the pike, or may engage in the graceful evolutions of the fly rod. Its seductions therefore prove universal, and it owns votaries of every age and station. The little urchin catches the early impulse, and seeks the brook, where, with a length of twine, encircling by one end a crooked stick, and by the other a bent pin, he toils in all the ecstacy of hope to ensnare the tiny banstickle (see *fig.* 474.), heedless of the terrors of a truant's punishment. Each year increases his passion, and now the spliced hazel twig and horsehair links, the type of "things to come," assist his efforts; and success giving a new spur to his energies, behold him at length armed with a rod of ampler dimensions and workmanlike manufacture, with the accompaniments of well wrought line, buoyant float, and tempered hook. Trolling now engages his attention, and emulation giving a continual stimulus to his efforts, he rests not contented until he has mounted the very feather in the cap of angling, and has become the accomplished fly-fisher.

2898. *Having ourselves passed through all these grades*, it may be supposed that we are enabled to form something like a just estimate of the merits as well as the defects of the pursuit. We know that by some it has been objected to angling, that it is a cruel amusement; and by others that it is too puerile and trifling in its nature to engage any but the thoughtless and unintellectual. To both these charges we beg leave to enter a demurrer, in which we hope to be joined at least by every orthodox member of *the Church*, which, in consideration of the mild and contemplative character of angling, did by its silence *allow it to be a fit and suitable recreation for the order of its Priesthood*, at the same time that it strictly forbad other field sports as incompatible with the sacerdotal duties. We have ourselves spent the major part of a life in pursuits connected with the amelioration of the miseries of animals, and we have often (as we hope to do again) advocated the cause of humanity in favour of the brute creation. We have also in our leisure moments followed angling in all its seductive forms, with an avidity which, did we feel its character of a cruel amusement to be a just one, we should be ashamed to own. We will not say that this charge against the general practice is "mere cant," although others have said it; but we do say that inaccurate conclusions and ill-directed sensibilities are at the root of such opinions. A lingering death to an animal nearly insensitive, and an immediate one to such as, by their more complex organisation, may be supposed to have feelings more acute, is in the one case divested of its horrors by a physical property which Providence has kindly bestowed on it to meet its casualties, and in the other is the common occurrence inevitably incident to their natures. That a physical property exists in the lower orders of animals, which renders them insensible at least to *acute* feeling, is apparent from the consequences which follow the injuries they receive. The worm, whose impalement on the hook has called forth so many sensibilities, we will not say is wholly destitute of feeling; but we conceive we are borne out in our assumption, that its struggles are more dictated by the instinctive desire to escape, than by painful sensations. If intense suffering followed the puncture of the hook, it is not reasonable to suppose that, after such impalement, the ordinary functions of life would go on; but such is the case. Release the worm from the hook, and although it may have been wholly transfixed by it, it will seek the first cavity in the ground to repair the personal breaches made in his body. Separate a worm into distinct portions, and it is averred that such portions immediately set about to unite into a common whole; or otherwise each part is gifted with the capacity of forming itself into a distinct and perfect animal. Be it however observed, that we have never put this to this test; others assert it as a fact. Can the sensation be great that is thus diffused? Innumerable other instances might be cited to show how little sensible the lower orders of animals are to acute feeling. The dragon-fly (*Libellula depressa*), when transfixed by a pin, will devour fly after fly with eagerness, and apparently with all its accustomed relish; and if supplied with food will, it is said, live thus many days. Redi, the naturalist, informs us, that in the course of some experiments on vital motion, he made a large opening in the skull of a tortoise, from whence he drew out the entire brain, and even washed out the cavity, leaving not the smallest part remaining. Having done this, he set the animal at liberty, which marched away as though it had not received the smallest injury. In a short space the hole in the skull was seen to close, and in three days a complete covering of skin was formed over it. For six months the animal lived in this state, walking about as usual, and, with the exception of becoming blind, it appeared not at all altered in vivaciousness.

2899. *Be it however understood, we are not favourable to these experiments;* on the contrary, we condemn all such acts as habituate the mind to insensibility, respecting the feelings of the animals around us, even under the impression that their sufferings are trifling: we have no right wantonly to inflict any needless pain on them, and unless some better end is to be obtained than the gratification of mere curiosity, we cannot consider such experiments as warranted. But in the exercise of such acts as are necessary either for developing important truths, or for the capture of the animals, and the appropriation of them to the uses designed by Providence, it is gratifying to consider that their sufferings on such occasions are by no means acute. Indeed, *à priori*, we might conclude that, consistently with the kind ordinations of their Maker, such would be the case. If sensitiveness were distributed among the lower orders of the brute creation in any considerable degree, our whole life would be occupied with one continued system of cruelty: we cannot walk abroad without crushing thousands, and without maiming tens of thousands; every action of our lives carries mutilation to something living; and in taking our most innocent beverages we entomb myriads.

2900. *The use of living baits*, which it is difficult to dispense with in bottom angling, should be free from every kind of wanton cruelty, that this our favourite amusement may not be justly condemned, and that we may advocate its cause with clear consciences. Many living baits are now admirably imitated by artificial means, and the humane angler may use the representations of frogs, minnows, and other small fish, if not with equal success, at least without compunction. Had the frog been as well imitated formerly as at present, it is probable that our venerable father in angling, Isaac Walton, would have escaped the unsparing lash of criticism, which fell on him in the writings of that severe critic, Lord Byron.

2901. *Resuming our defence of angling*, we express our conviction that, although in some cases genuine feelings, but morbidly excited, may exist, yet that it is principally owing to a fashion of *seeming to feel*, that angling has been so unjustly denounced as a cruel sport. Of the truth of this many proofs might be adduced. A lady of our acquaintance who was wont to be loud in her invectives against the inhumanity of all field sports, was betrayed into a coursing expedition. Two greyhounds accompanied the party into the Tollesbury Marshes. As hares were there very plentiful, one dog was taken up, and the other was soon engaged in an excellent course, in which our fair friend became so interested, that in the enthusiasm of the moment she exclaimed, "Let the other dog loose! pray let him loose, or the hare will escape!" The distinguished author of the review of *Salmonia* furnishes us also with an appropriate anecdote: — "We remember an amiable enthusiast, a worshipper of Nature after the manner of Rousseau, who, being melted into feelings of universal philanthropy by the softness and serenity of a spring morning, resolved that, for that day at least, no injured animal should pollute his board; and having recorded his vow, walked six miles to gain a hamlet famous for fish dinners, where, without an idea of breaking his sentimental engagement, he regaled himself on a small matter of *crimped cod* and *oyster sauce!*"

2902. *Much has also been said on the torture inflicted on the fishes as well as the baits in angling;* but we feel ourselves warranted not only by analogies but by known facts in asserting that the fish, although less insensitive, yet, like the baits, feel none of that exquisite pain which ought to shock true feeling. The cartilaginous mouth of fishes is indeed so little sensitive, that, when after being hooked they have again escaped, they may be taken again and again; and not unfrequently they will take a second bait almost directly, and even while the former hook remains in the mouth. The hooked trout also, after struggling against his capture and breaking away, may in a little time be seen in its old haunts rising to the natural fly, and the next day will sometimes again take the artificial one. We have, on purpose to assure ourselves of these facts, repeatedly marked most of the varieties of fresh-water fish, and, after returning them to the water, we have often retaken them in a little time, and not unfrequently we have done it immediately. The pike has been known to become partially captured by the hook four or five times in one day, and to have gorged a second bait when one was already with its apparatus actually sticking in its stomach.

2903. *If more were necessary to dispel our fears* on the score of inflicting *pain* on creatures sent for our use, but certainly not for our abuse, the following fact proves the degree of *insensibility* on which we would ground our plea *that angling is not cruel:* — Two young gentlemen of Dumfries, while fishing at Dalswinton Loch, having expended their stock of worms, &c., had recourse to the expedient of picking out the eyes of the dead perch they had taken, and attaching them to their hooks, a bait which this fish is known to take very readily at times. One of the perch caught in this manner struggled so much when taken out of the water, that the hook had no sooner been loosened from its mouth than it came in contact with one of the fish's eyes, and actually tore it out. In the struggle the fish slipped through the holder's fingers, and again escaped to its native element. The disappointed fisher still retaining the eye of the aquatic fugitive, adjusted it on the hook, and again committed his line to the waters. After a very short interval, on pulling up the line, he was astonished to find the identical perch that had eluded his grasp a few minutes before, which literally perished by swallowing its own eye. (*London Museum*, 1822.)

2904. *The partial insensibility of animals*, though indisputable, is not however necessary to shield our art from the imputation of wanton cruelty. On the contrary we assert, without fear of contradiction, that the practice of every *humane angler* is replete with proofs that he avoids every unnecessary infliction of pain in the pursuit of his sport. For what purpose is it so common with him when he has taken a fish immediately to force its head back, but to dislocate the neck and prevent all further sensation? This is but a single instance; the purposed practice of humanity is displayed in many other of the ordinary methods pursued by the experienced fisher. It is only among the unthinking and inexperienced that humanity is ever outraged.

2905. *The study of Nature* presents itself to the angler as a part and parcel of his pursuit: in the calm repose of a mild day, stationed by the side of a picturesque stream everywhere teeming with life, how naturally he wishes to become acquainted with the various objects which compose it, not by a cursory observation alone, but by such an acquaintance as shall inform him of the wise adaptation of the parts in each to the determinate purposes of their existence, and of their habits, instincts, and metamorphoses. Observations on Nature's works are almost forced on the angler. Can he bait his hook with the caddis, after having divested it of its admirably contrived coat or case of mail, without wishing to know more of its history? And as his experience teaches him that it is principally at one time of the year that he meets with these unsightly but curious animals, can he refrain from attempting to follow them to their destination? and will not the inquiry, when pursued, amply repay the trouble it occasions?

2906. *Few objects throughout the vast field of Nature* afford more interest to the inquisitive mind than the transformations which those beautifully winged insects, *Phryganea*, *Ephemera*, and *Libellula* (known in the angler's catalogue as caddis-flies, day-flies, and dragon-flies), are destined to undergo. Little does he at first suspect that the caddis-worm which he now fishes with, and the stone-fly he will dip with a few weeks hence, own each a common origin. It is no less curious to learn that the short lives of some of them are passed without a meal. Bent on leaving others to take their place, after they have expended their brief existence in graceful alternate risings and sinkings to and from the surface of the waters, they lay their ova, and incontinently sink into death. Can it fail to excite interest to learn that very many of these aërial wanderers, gifted almost with the talent of ubiquity, should be the parents of aquatic creeping insects, confined to grovel over a few feet of the bottom of a rivulet? This circumstance, curious as it is however, is even less wonderful than the fact, that this *masked* insect contains within itself the means of assuming other forms, each progressively more perfect than the preceding, and at last of rising from its watery bed, bursting its aquatic integuments, and shining in all the brilliancy and activity of the parent fly. Does it not excite our admiration to know, that, wide as is the visible difference between the indigent and deformed larva and the perfect imago or fly, remove but the exterior tunic of the former, and the wings, legs, antennæ, and tail of the latter may, by the help of the microscope, be distinctly seen curiously folded up, as if to be ready when wanted?

2907. *The whole page of Nature around the angler* is equally filled with lines of edification and delight. All the objects of his amusement afford ample instruction of this kind. In the movements of the wary trout, darting through the liquid element with a velocity which almost defies the eye to follow, he may be excited to inquire into the construction of the motive organs of fishes, and into their animal mechanism. Does a heavy cloud pass over his head, portentous of thunder, it becomes to the contemplative mind a subject of consideration, why the finny tribes around him, struggling which should first take the bait before, now retire from it in sullen disgust. The cloud being dispersed, and the electric state of the atmosphere with it, again the fish seize the bait. Every object he sees, every occurrence he meets with, affords a fund from whence he may draw stores of information, and multiply his enjoyments.

2908. *If the force of example* be wanting in aid of our attempts to set the character of angling in the exalted situation it deserves among the lighter pursuits of cultivated man, the lives of hundreds of great and good personages will furnish it. Walton is justly proud of the names of Dr. Howell, dean of St. Paul's; Sir Henry Wotton, provost of Eton; Sir John Offley, and many others. The list indeed might be swelled infinitely beyond the limits of our pages. Gay alternately wrote his poetry and caught his trout at Amesbury. Tobin, the author of the *Honey Moon*, was at once an excellent writer and an ardent fisher. Mr. Coleridge, "the powerful poet of the lakes," also adds to its votaries a distinguished member. Dr. Paley was so enthusiastically fond of the sport, that when asked by the Bishop of Durham when one of his most important works would be finished, replied with much naïveté, "My lord, I shall work steadily at it when the fly-fishing season is over." The heroic Lord Nelson, we are informed by Sir Humphry Davy, was a good fly-fisher; and as a proof of his passion for it, continued the pursuit even with his left hand, having, as is well known, lost his right in the service of his country. The shield of fly-fishing is emblazoned with the names of Sir Walter Scott, Sir Humphry Davy, and Dr. Babington; and if we have been rightly informed, the exquisite little tome, called *Salmonia*, owes its origin to a party proposed between Sir H. Davy, Dr. Babington, and Dr. Frank, to visit the lakes, and to be there joined, as we suppose, by Sir Walter Scott. The very play of men like these must have afforded an intellectual treat. The scattered crumbs, fortunately for us and our posterity, have been collected by a distinguished member of the party into a similar banquet for the absentees. Among the other high characters who have practised fishing with avidity, we may notice that most amiable lady, the late Duchess of York, who herself assured us that it was a great treat to her to fish for perch in the Virginia Water. We need hardly call to recollection that it was in these waters George the Fourth erected a sumptuous fishing-house, and thus added himself to the list of royal anglers. Her present most gracious Majesty and H. R. H. the Prince of Wales are anglers.

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VIRGINIA WATER.

CHAP. IV.

ANGLING APPARATUS.

2909. *Fishing, like every other art, requires implements* for its practice. There are places where it is difficult to procure fishing-tackle; and there are persons so independent in their notions as to value the sport but little unless the mechanical aids to it are of their own making. These are reasons, then, to render ample directions necessary to enable persons to manufacture or *repair* these implements for themselves.

2910. *The value of mechanical tact in repairing our own fishing implements* is never more truly exemplified, than when many miles from home we are deprived of sport, and confined to an inn room on a wet day. We have ourselves been thus situated many times, but have always been able to beguile the time by setting ourselves to arrange and repair our tackle, long neglected perhaps for want of leisure and opportunity. The rainy day lost its gloom in the pleasure of occupation, and in the anticipation of a harvest of future sport. We have in our eye certain friends with whom, at various spots on the Thames, the Lea, and many other rivers at remote parts of the kingdom, we have been thus situated; and we can recall the display of broken floats, severed lines, and fractured hooks, which have occasioned as much pleasure in the repair as in the use.

2911. *Another advantage* to be gained by those who thoroughly understand the formation of all their implements is, that they will be infinitely more capable of judging of the merits of similar articles when they are inclined to purchase them of tackle makers. An angler who is known among these artificers to have these capabilities, rarely needs to apprehend any attempt to be deceived by them in the qualities of the articles he buys. These he also purchases often cheaper, from knowing the composition and value of the materials. Although however, for these reasons, it is very desirable to be able to manufacture our own fishing tackle, yet, unless we are so situated as to be not within reach of the purchase, or that we indulge in the whim of preferring the work of our own hands, it not only saves much time, which may possibly be more profitably spent, to buy it; but in the generality of cases the apparatus met with at good shops is in many respects superior to what is usually made by ourselves. Continued practice begets judgment in the first selection of the materials, and also the best mode of manufacturing them into the necessary instruments afterwards.

2912. *Exceptions however to this exist*, in regard to some of the implements used both in bottom and fly-fishing. In the latter it is essential to perfection in the practice, that the fisher be able to dress his own flies, on which subject more anon; for be it known that fishing-tackle makers, like other artificers, being fully aware of the value of time, endeavour to compass their ends with an expedition often unfavourable to the fitness or strength of the article. This is particularly exemplified in the manufacture of gut lines, whether for fly or bottom angling. The amateur on making such lines will choose only the gut that is perfectly round and even, but in the gut introduced into lines made for sale, this caution is not sufficiently observed. The difference in the *shotting* of lines between the experienced amateur's practice and the vender's is still more apparent. A few large shots will certainly balance the float, but they will as certainly scare the wary fish; yet, as a few large shot are more readily and quickly put on than numerous small ones, we find many ready-made lines so furnished. The amateur will place three or four small shot for each of the tackle maker's large ones, and his success will be doubled by the improvement. Again, it is more than probable that the angler might go into ten shops before he would find a line with the hooks tied with red silk and a projecting bristle; and yet both are necessary in fine worm fishing. Again, for fly-fishing, we seldom have been able to purchase a *truly tapered foot length*, and without it the fly must be prevented from falling lightly or exactly. Neither, when a fish has been hooked, have such lengths usually proved so strong as those made up by ourselves. The loopings, the ties, and all the *fastenings off*, are apt to be made too hastily by the tackle makers: and even when very neat in the execution, are seldom so strong as those manufactured by an ingenious amateur. To avoid these evils as much as possible, when we do purchase these articles ready-made to our hands, we endeavour to deal with one who is himself a known angler. None will so well know how to remedy the defects in his own implements, or to improve on the methods of others, as he who uses them. *In taking an order*, such dealers have likewise a considerable advantage over the mere maker of tackle: they can not only at once meet your views, but they can set you right when you have formed erroneous conclusions, or fallacious expectations; and they alone can furnish the angler with a satisfactory reason for what they allege.

SECT. I. *The Varieties of the Fishing Rod.*

2913. *To an angler the rod is a most important implement*, and is made of various lengths, and different degrees of strength and elasticity. The nominal divisions of rods are almost as varied as the rods themselves, or as the materials they are made of. Thus we have the bottom, the fly, and the trolling rod, we have also the single and the double handed rod, the cane and the wood, the bag rod, and the walking-stick rod, with numerous other smaller varieties. In treating of the fishing rod, we shall consider it first as an article of trading manufacture; and, next, as an article of domestic make. In the purchase of a rod, the nature of the angling for which it is particularly intended, must of course be first taken into consideration, and the order should be given accordingly.

2914. *The general rod*, as it is termed, is a very convenient one for the young practitioner, or for occasional travelling use in places where it is uncertain what fish may present themselves; for this instrument is so extensive in its capabilities, that nothing comes amiss to it; and if in the multiplicity of its doings, it does nothing very well, it will at least act very respectably in most kinds of fishing, except that of throwing the fly, which it executes miserably, although it is used for this also, and has an additional joint and a fly top for the purpose. The *general rod*, through the variety of its joints, may be varied so as to render it fit for roach, dace, or other fine angling; at the same time it may be strengthened to fit it for barbel fishing; or it may, by a slight alteration, be converted into a trolling rod by means of a top with a brass stationary ring bent to a right angle with the joint to

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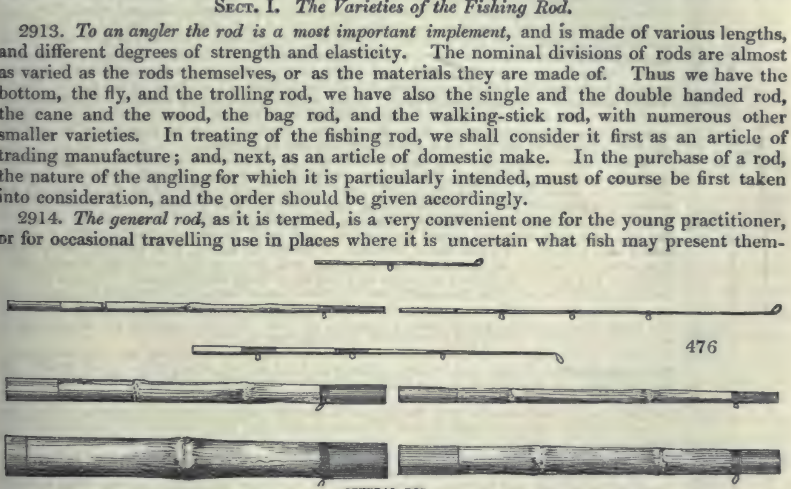

GENERAL ROD.

obviate friction on the line. In this rod the various tops are contained in a hollow within the butt or stock, which is closed by a cap made to receive a spike. The butt has also winch-fittings to receive the winch, and the various joints or pieces are furnished with rings throughout. In fact, the beginner cannot do better than furnish himself with one of these factotums.

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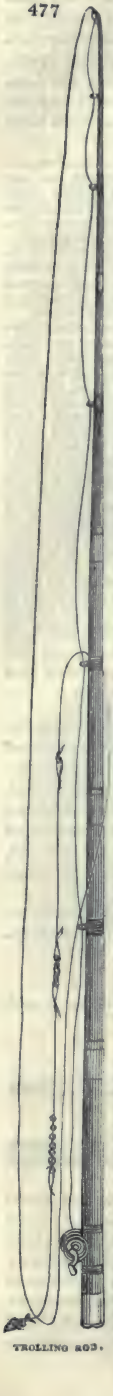

TROLLING ROD.

2915. *The bag rod*, properly so called, is however little more than a light general rod, made into much shorter lengths, viz. of two feet, more or less: it is usually made of cane, and thus can be carried in an inside pocket, when the more formidable lengths might attract notice: it is also an advantage of the cane bag rod, that it packs well into a trunk: by its lightness it is well fitted for any fine fishing, as for roach, dace, gudgeons, bleak, &c. &c.

2916. *The walking-stick rod* consists of hollow pieces received within each other, the outermost, or general receiver, being made to resemble a walking-cane. It is made up for the convenience of anglers who have some distance to traverse on foot; and likewise in cases where it might be desirable to have no more of the insignia of an angler's occupation about the person than can be carried in the pocket and the hand. As might be expected, it is not a very efficient article: it however promises little, and it seldom does a great deal. A distinct rod is therefore requisite for each kind of fishing to the professed angler; and, as such, we shall describe the prominent features of each variety, applying them to their several uses hereafter.

2917. *The light bottom rod* for roach, dace, gudgeon, smelt, and other light and fine fishing, varies in its length according to the extent of place fished, &c. &c. ranging from fifteen to seventeen feet: professed roach anglers often use one of eighteen, or even nineteen feet. It can be neither too light nor too elastic (but we mean not the elasticity of the fly rod), particularly upwards, and it is often therefore made of bamboo. To compensate for its want of strength, it is oftentimes ringed throughout, and furnished with a reel and running line; by which means, if a heavy fish should take the bait, the rod will not suffer. A very small reel is no incumbrance to a rod, it adds but little to the weight; and when such a one is placed on the upper instead of the under surface of the butt, a very light rod will kill a very heavy fish: but such should be occasional practice only.

2918. *A stronger rod for perch, chub, bream, carp, tench, eels*, and also for minnow spinning, may be from twelve to eighteen feet long. Such a rod should be altogether stiffer and stouter than the last, and may be either of solid wood or of cane; if of cane, the upper joints should be of the very best bamboo: besides its running line and winch, it should be also furnished with a spike to screw into the butt. A butt spike may indeed be considered a necessary appendage to every variety of rod beyond the very lightest; and it may prove useful even if that be armed with a spike when a heavy fish is hooked, and has been played some time; for by retreating back, and fixing the rod upright in the ground a tight line may be kept, and the fish may be taken out by the landing net without laying down the rod, which is always a hazardous operation. Even if it be a very heavy fish, the angler will find that with a free line, held loosely in the hand, his most violent lunges cannot injure the rod nor disengage the struggler, because, if necessary, more line may be veered out to provide against his *striking away*. Such are the advantages of a spike.

2919. *The rod for barbel, heavy carp* (see *fig.* 461.), or for pike fishing with live bait, should be solid; its length may be fifteen, sixteen, or even eighteen feet long, proportioned to the breadth of the water fished in, and the presumed size of the fish likely to be hooked. As all the fish for which it is intended are occasionally large and powerful, if it be weak, particularly in the middle joints, a heavy fish will surely distress and perhaps break it: it should be strong in the top also, and strongly ringed throughout, and must never be used but with running tackle and a spike. To the above remarks it should be added, that nothing looks more unsportsmanlike than to see an angler laying his rod down to land his prize, when weeds, banks, or the weight of the fish prevents its being done in the usual manner. When a rod has been so laid down, we have frequently seen the fish draw it some yards out of its place; and by so doing, is not unlikely to entangle itself, or perhaps the legs of the unhappy angler at the same time: a spike would have prevented all this. In punt angling for heavy fish, a shorter but equally strong rod is requisite. (See *Barbel*, p. 1057.)

2920. *The trolling rod* (*fig.* 477.) is a difficult implement to describe, not from any complexity in its manufacture, but because there is no kind of rod with which a good troller will not kill pike. A strong top in the hands of a troller may be adjusted to any rod for this purpose: there is usually such a one to the *general rod*, as seen in *fig.* 476. A professed trolling rod, of whatever length, should be formed throughout on this principle, that the line should run freely without chance of interruption: for this purpose its rings should be large, and by no means too numerous; one to each of the lower joints is sufficient: but it is of more importance that they be fixed and motionless, to secure an easy passage to the line, and to avoid all chance of entangling it. The top should also be armed with a brass collar rounded, smoothed, and bent to a right angle with the joint, to prevent the line from fretting or hitching: it need not have a spike at its lower end, and should have more strength of substance than of extreme length, although in lake trolling length of rod is desirable; but its strength throughout must be great and uniform. Indeed the rods made use of for the full equipment of a thorough pike fisher are required to be somewhat varied; and although we are told by some that any rod may be made efficient for trolling, yet some are so particular as to have one expressly suited to each of the usual methods employed, as live-bait fishing, dead snap fishing, and gorge trolling; nor can it be denied that such is the practice with our crack pike fishers, who affirm that the sport cannot be handsomely conducted *without*. But as the description of such rods will be best understood when we are treating of the uses in which they are to be employed, so we refer to *Pike Fishing*, p. 1104., for all further detail on the implements then to be made use of.

2921. *The fly-fishing rod* (in angling language the "fly-rod") is commonly considered under two varieties, the salmon rod and the trout rod, and such distinction is certainly necessary; for although the salmon rod might kill a trout, a full-sized salmon would be apt to carry away the whole material of the trout angler's rod. Consequently we must describe and figure both the trout and the salmon rod, which we shall be ready to do in their proper places. Every rod used in fly-fishing should taper regularly from the bottom to the top, except for about two feet of the lower portion or butt joint, which in trout rods that are tolerably fine may as well be enlarged to give firmness to the grasp, strength to the rod, and a counterpoise against its proving top-heavy, as it is termed. In strong rods this increase is seldom necessary, as in them the lower joints are throughout sufficiently strong to form the due resistance against top weight, or an extreme in the degrees of elasticity. With this exception, it may be affirmed that on the regularity of its taper will depend that uniformity of *bend* or *play* which is required to produce a certain mechanical action on the line, by which the thrower is enabled to *deliver* it to its fullest extent with precision and lightness. Be it observed that we do not patronise a hollow butt in a fly-fishing rod: it must weaken it; but, what is worse, it must interfere with the uniform elasticity of the whole rod, which to be perfect should be solid throughout.

2922. *A symmetrical taper* likewise, it must be observed, will only produce this effect when the rod has been originally made solid, and as well constructed on the principle of a just adaptation of the *different* degrees of elasticity inherent in its several pieces to each other; but from carelessness, cupidity, or want of judgment in the makers in these respects, it sometimes happens that a rod with a symmetric taper shall yet act badly. For instance, in the manufacture of a fly rod, if to an ashen butt or stock were applied as a second joint a piece of lancewood, as a third joint a length of hiccory or fir, and for the fourth joint a portion of bamboo, it would in all probability follow, that however true the taper might be, the lancewood and bamboo being more elastic than the materials of which the first and third joints were made, the uniform flexure of the rod as a whole, which is the best criterion of a good rod, would be destroyed. In the purchase of a rod, it is therefore requisite to be particular in the wood of the individual pieces of which it is composed: the rod when new and stiffened by dryness and varnish, may gloss over defects in the relative flexures of its several joints, which use and moisture may bring out when too late. Prevention is better than cure: but cure comes next; the case therefore is not quite hopeless, and in treating on the domestic manufacture of the fly rod, we shall, if our limits will admit, give directions how to remedy these defects when the amateur may be limited in the choice of his woods. Here no such hints ought to be necessary: neither will they be if a good professional rod-maker be employed in the first instance; for it is a great point with such to adjust the several joints with a just gradation of elastic properties, the butt being the lowest and the point the highest in the scale of elasticity.

2923. *Thus we may observe* that ash, hiccory, lancewood, and split bamboo, surmounted with a splicing of whalebone, are seen to succeed to each other frequently in the formation of an elastic rod. Whatever other woods are used likewise, these principles should be kept in mind in their adaptation, and this more particularly in a fly rod, but subordinately so in every other variety. On the subject of enlarging the butt joint it may be well again to remark, that although the flexible properties of a fly rod should exist in due proportion throughout its whole length, yet such elasticity should not be too apparent to the hand in the lower portion of the stock, which on the contrary should be of sufficient substance to give it firmness, and to check too much play downwards. If the butt towards its lower part be not of a proper strength to form some resistance to the extent of the elasticity upwards, the rod will feel top heavy, will tire the hand in action, and will also deliver the fly faultily. The butt of the rod may be considered as the fulcrum of the lever, and should therefore be steady.

2924. *Rods for fly-fishing are double-handed or single-handed:* the double-handed rod is one of considerable length and strength, and to use it requires the application of both hands. It is evident that such a rod can kill very heavy fish, and likewise can command a great length and strength of line, which in very wide rivers is certainly of great consequence. It must however be observed, that this rod has its disadvantages: it is seldom that a two handed rod can be used with the same precision, or with the same lightness in the dropping of the fly on the water as by the single handed practice. We have fished wide and narrow streams, and have always used a single handed rod for trout. For salmon fishing, particularly in extensive and rapid rivers, we have always used the double handed, for the requisite length and strength of rod proper for this fishing, compels even the most athletic to use both arms.

2925. *The salmon fly rod* ranges between sixteen and eighteen feet in its length: we have seen them twenty feet long, but when of this length they are unpleasantly heavy and unmanageable, except in the hands of a very tall and powerful person. This excess of weight may however be avoided, yet the length be retained by using the spliced rod to be hereafter noticed; and thus the short and the tall, the strong and the weak anglers may be brought on a par with each other by a little tact in their mechanics. The salmon rod should be made of the very best materials. Its butt should be made of the best well-seasoned ash, its middle pieces of the best grained old hickory, and its tops of bamboo cane. It need have no spike, but the extreme end of its butt should be rounded, for in working the fly through the water it is constantly necessary to press the butt-end of the rod against the flank or lower part of the abdomen.

A scale of the usual proportions which the weights of rods bear to the lengths, and also of those which the splice jointed rods bear to those with brass joints, may prove useful:—

18 feet salmon rod, 4 brassed joints, screw ferrules			weight 2 lbs. 12 oz. to 15 oz.
16 feet salmon or trout,	ditto,	ditto	2 lbs. 6 oz. to 12 oz.
14 feet trout,	ditto,	no screw ferrules	2 lbs. to 2 lbs. 2 oz.

SPLICED RODS UNBRASSED.

18 feet salmon rod, three joints	weight 2 lbs. to 2 lbs. 4 oz.
16 feet salmon or trout, ditto	1 lb. 8 oz. to 1 lb 11 oz.
14½ feet trout, two joints	1 lb. 3 oz. to 1 lb. 6 oz.
13¾ feet ditto, ditto	1 lb. to 1 lb. 3 oz.

2926. *The jointings of fly rods* in general have occupied the attention of many mechanics, and numerous inventions for the purpose have appeared. Every fly rod except the spliced should be ferruled: without this common adjunct, the joints in damp weather, or from accidental wet, swell and adhere too firmly to be separated without much trouble and risk; and in dry weather from shrinking they are also apt to *part company*, i.e. to separate before they are wanted. The best fly rods are therefore now manufactured with a brass ferrule and cappings entire, each of which is received into a complete socket of brass, accurately let into the receiving joint. These surfaces are by the best makers turned out of hand critically true in their adaptation to each other by *bushing*, which is nothing more than grinding them true in a lathe with emery. Much is gained by this precision; for the more perfect the attachment of the whole of the surfaces of the upper and under joints is to each other, the more will the rod act after the manner of a *sapling*, which is a natural rod, and if grown true must be correct and uniform in its pliancy; and the more truly the joints of a rod fit each other, the more will such rod represent one continuous piece in its action as well as in its safety: without this adaptation it is likely that, in the course of an hour or two's action, its joints will loosen. A powerful salmon will be sure to cause this mischief; even a heavy trout has frequently occasioned injury.

2927. *Loop-ties are an additional security applied to rods.* Loop-ties (*a b*) are applied to brass ferruled rods to hold them together when in powerful action. It is done by crossing a waxed thread over the points at *a b*. Loop-ties are also threads waxed and wrapped around the wooden portions of a broken rod as at *c d*, and are used in arming of hooks also at *c c*, where on drawing the loose end (*e*) tight, the knot is made fast, and without the inconvenience of having any spare end hanging therefrom. It is this mode which fastens most of the rods used in the southern, western, and midland counties, and for common trout fishing they are in most cases sufficiently secure; where salmon are the prey, the tackle must be proportionally strengthened and secured.

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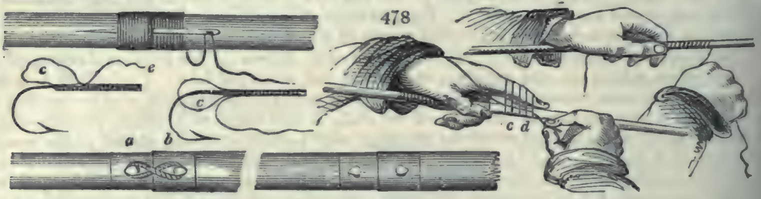

LOOP-TIES.

2928. *Screwed joints* are a still more certain security against the pieces of the rod loosening from each other, and are very generally applied to the Irish and Scotch salmon rods. In fact, when a spliced rod is not used, even the trout rods in the North are very commonly ferruled; for in the rivers of these countries longer and stronger rods are usually employed than in those of England, particularly in the waters around London, where there are no chances of being surprised by a salmon in the trout fishings. The continued action of a long and heavy rod, particularly when subjected to the resistance of so powerful a fish as the salmon, will sufficiently loosen the joints (as we have found to our cost), even when assisted by the best wire and thread lappings. For these reasons in salmon fly-fishing the rod (when not a spliced one) is commonly furnished with screw joints, the manufacture of which consists in adapting a male screw to the ferrule of the lower joint, which is received into a female screw of the ferrule of the upper joint. When a rod is furnished with these, provided they be well formed, all danger of any loosening between the several pieces is avoided. It has, however, been objected to the screw joints, that by wear they are apt to become inefficient; and when so, they are not easily repaired. Our own experience, however, assures us, and we are also assured by others, that screw joints from the hands of reputed makers will remain perfect during the toil of several years. These assertions we make with reference to all the joints but the last, the screw of which, from its diminutive size, is certainly more liable to become defective than the others. To obviate this danger, Bainbridge recommends that the top be spliced to the next joint, to which there can be no objection, provided the angler be willing to take the trouble to do it daily, and be skilled in all these manipulations. The weight of the whipping in this case is by some objected to; but the objection, we are convinced, is wholly groundless, as such weight is more than counterbalanced by the absence of the brass ferrules. We should ourselves recommend, in case the trouble of splicing is disliked, that the screw ferrule be used; but that in the making of it the wire for loop-ties (*fig.* 478.) be also added, and thus when the screw is become too much worn for safety, then it should be loop-tied with thread as well, by which every inconvenience may be avoided. Of late joints have been so well brazed as to render the screw unnecessary.

2929. *The bayonet joint is of later invention*, and certainly has the merits of readiness, simplicity, and durability. It was invented, they say, by the late Mr. Holmes, of Cranbourne-alley; and if on trial it be found to answer all the purposes which its appearance promises to effect, it will obviate the principal alleged inconveniences of the screw joints, those being less simple, more liable to become out of order, and not so quickly put together. It will also, at the same time, present equal security with diminished cost; and under these views it has been strongly recommended to trial, and has entirely succeeded. The principle of this method of joint fastening consists in the brazing of the upper joints throughout, the lower joints being socketed with brass likewise, the collar of the ferrule being bridged to admit the pin of the joint under it, which, by a turn of the piece, then becomes locked. A leathern collar, having the whip fastening, is also adapted to the joints of the spliced rod, but which part of the mechanism is frequently of domestic manufacture.

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FLY ROD.

2930. *The trout fly-rod* (*fig.* 479.). After what has been said at the commencement of the article, it will be evident that we make a distinction between the trout and salmon fly rod, so as to completely separate them, because the strongest rod, the same in manufacture and in every essential requisite that is fitted to take trout, would not stand before a salmon of ten or twelve pounds. The rod used for salmon is stouter, and has frequently screw joints adapted to it, not but that those used in the countries where rods are generally so made, and purposely designed for trout fishing, are often screw jointed also. What therefore is to be understood by a trout fly rod is the rod already described, but here figured with a decrease in length and strength; but more particularly it owns a regular taper, a fine top, and an increase in pliancy to that used for the salmon. Such a rod, when it does not exceed thirteen feet in length (our own favourite length is twelve feet six inches), and is made moderately light, can be used with either hand, thus enabling the angler to direct his fly under bushes, or to any determinate spot, with much more precision than can be done by the two handed rod.

2931. *In the pliancy requisite for the fly rod generally*, much contrariety of opinion prevails. In this as in most other matters, the medium is to be preferred. The fly-fishers of the North, being many of them accustomed to the rods of their own manufacture, unencumbered by brassed joints, ferrules, &c. are frequently seen to use rods of extraordinary pliancy, particularly for trout fishing. The large segmental portion which such a rod describes, is however apt on its return to catch the line before it has reached its limits, particularly in windy weather, the consequence of which is, that many flies in inexperienced hands are snapped off. It must however be confessed, that a long line, thrown with a flexible rod, does by the impetus it gives to the heavier part of the line leave the foot length with its fly to revolve more slowly over such part of the line, and thereby to settle itself on the top of the stream so naturally, as to do away with much of the alleged disadvantage of any portion of the line reaching the water before the fly. We have seen this very efficient in quick water without wind.

2932. *Too stiff a rod* is however even worse than too pliant a one, and can never be managed to advantage. The fly-fishers of England certainly use less flexible rods than either the Scotch or Irish, and particularly than the Irish.

2933. *The different makers of rods* have all their partisans. In the English metropolis, where every manufacture is carried to great perfection, of rods for bottom fishing there is certainly an assortment unequalled perhaps in the world; and the same may be said of trolling and spinning rods. The practice of fly-fishing, whether for trout or salmon, has become so prevalent of late years amongst persons residing in London, that fly-rods and flies are now made there with greater care and finish, and perhaps better than any where else in the empire. The best workmen from the provinces have come to London; and the consequence is, that Scotch and Irish fly-tackle, particularly the former, has lost its *prestige*. No trout or salmon angler living in London, if he is unprejudiced, will think of going to Dublin, Edinburgh, or Glasgow for his fly-rods. Martin Kelly and Son, of the former city, still retain, however, their old reputation; but, unless ordered otherwise, they make their rods too "whippy." One of the best rod-makers in London is Mr. Blacker, of 54, Dean-street, Soho, because he is a practical fly-fisher of great experience, and takes pride in turning out perfect fly-rods. He pays his men the highest wages, and will have them work according to his taste and judgment. Next to him are Mr. Bond, of Cannon-street, who is a trustworthy tradesman, Mr. Little, of 15, Fetter-lane, a very good maker, and who will carry out well the purchaser's directions; Mr. C. Farlow, 221, Strand; Mr. Eaton, 6 & 7, Crooked Lane; and Mr. Bernard, Church-place, Piccadilly. The Messrs. Bowness, Bell-yard, Temple-bar, are makers that we can safely recommend. We particularly caution the young angler against the purchase of cheap fly-rods. A good trout fly-rod, double-brazed, cannot be made to anything like perfection for less than thirty shillings; nor can a salmon rod be guaranteed good for less than four guineas. Some fly-rods are now made with rent and glued bamboo tops, which promises to be an improvement, as such tops never warp, and under fair treatment cannot be broken. They are dearer than the other rods.

Of rods not made in the metropolis some account may also be expected. We have had three several fly-rods from Edinburgh, but though they were all good in other respects, not one stood true after use; yet we know that excellent rods are made there. Bainbridge says, the best country fly-rods are manufactured by Henry Swann, of Langholm, in North Britain. In Glasgow there is, we are told, a good maker of rods, M'Dougal by name. Dublin fly-rods are praised by many. We saw one which had stood five years' hard work with its joints symmetrically straight, and its screw ferrules still good. In large country towns likewise, particularly in such as are situated in the neighbourhood of important rivers, we have occasionally met with fly rods which surprised us. In general cases such rods have however been too pliant.

2934. *Colonel Hawker's description of a trout rod,* like most of his articles, concentrates in a few words much useful matter. He describes one thus: — "About twelve feet three inches long, and about fourteen ounces in weight. It must not be top-heavy, nor must it have too much play in the lower part; but the play should be just in proportion to the gradual tapering; by which there will be very little spring till after about the third foot of its length. A rod too pliable below is as bad a fault as being too stiff" [or worse] — "and, from being too small at that part, is of course more liable to be top-heavy, which nine rods in ten are: the consequence is, they tire the hand, and do not drop the fly so neatly." Having arrived thus far, there lies before us a continuance of our subject in describing the *domestic manufacture* of rods. We have stated our regrets and our necessities at curtailment; but we think we have, on this occasion, less reason to regret the omission of the *domestic manufacture* of fishing rods than any other matter. Fishing rods in general, but more particularly rods for fly-fishing, had better be purchased of an accredited maker. Such a one can season his wood, and adapt the various lengths and sizes to the purposes required, far better than the amateur. Should he, however, still incline to try his hand on the making a fly rod, let him consult the *North Country Angler*, a work equally plain and detailed.

2935. *A home-made bottom rod* is not an article of difficult manufacture; and as we are aware that many a wealthy fisher may have a peculiar attachment to the work of his own hands, and also that others less wealthy may begrudge the expense which attends the purchase of one, so we will offer a few directions on the subject, having in Northumberland, from breaking our own bottom rod, been forced to the necessity of making one ourselves, or otherwise going without. We chose a well-grown hazel sapling for our butt; our second joint we formed of tough, close, and straight-grained fir, observing that it was free from knots. If the rod be intended to have four joints, the third may also be formed of fir; but unless the length be very considerable, we think three fully sufficient, and of that number we formed our own, and by leather bracing we made them as snug and portable as was necessary, and found that two splicings had a great advantage over three. In the formation of the top joint either lancewood or bamboo may be used; the appearance of the former will be most in unison with the other woods; the latter will be more tough and durable. If the top intended to be made be for a long rod, it should be finished with five or six inches of whalebone. The *length* of the rod should depend on the breadth of the water and the nature of the fish to be taken; but whatever that length be, the rod should be firm yet elastic, and by no means top-heavy.

2936. *The spliced fly rod* also finds some warm advocates, with whom, when residing in Northumberland, we frequently fished. We also formed, after their fashion, a fly rod of two joints only, namely, the *butt* and *top;* and if a traveller for a short distance, particularly a pedestrian, wishes to travel light, let him use one of this kind. By all means let the two pieces, butt and top, be attached by a splice, fastened by a small leathern thong previously wetted, so that when it becomes dry it may contract and form a tighter bandage. The superiority of a two-jointed rod of this description, circumstanced as we were, we found considerable; for our own fly rod having met with an accident, we took example, and made a very tolerable substitute, by which we gained a rod highly elastic and uniform in action, and consequently less liable to break, and whose play was like that of one continuous piece. A fly rod of this description is particularly calculated to answer the purpose of the tourist, from its lightness, its readiness to admit of repair, and, should that be impossible, his loss will not be considerable, and the first market town will supply a sufficient substitute until he can receive a better from London. To avoid all trouble it would be better to take two rods at the outset: — *store is no sore.*

2937. *The number and the placing of the rings* on a rod are more important points than the tyro may at first imagine, and therefore worthy of a little further consideration. For perhaps, conceiving that the rings are merely intended as a convenient method of keeping the rod and line together, he may (by overlooking their mechanical action, which they have on both line and rod) be tempted to put on too few; and those few he may apply without a due regard to situation. The following scale, according to our own experience, will be found a just guide to the placing of the rings. The scale will commence from the extreme point of the top, and indicate the distance in inches between ring and ring progressively downwards. Thus between the top and the first ring there should be 2¾; from this to the second, 3; to the third, 3½; the fourth, 4⅛; the fifth, 4¾; the sixth, 5¼; the seventh, 5⅞; the eighth, 6½; the ninth, 7⅝; the tenth, 8⅛; the eleventh, 9¼; the twelfth, 11; the thirteenth, 12⅛; the fourteenth, 13¾; the fifteenth and last, 16 inches. In a longer rod the lower rings should not increase in their proportionate distances quite so rapidly, but so as to allow an additional ring for each foot of rod, the last always being placed about thirty or two and thirty inches from the termination of the butt, according as the rod may be short or long. Be it however remembered, that this scale of ringing will not apply to the trolling rod, where the rings should be large and placed at considerable distances apart; indeed, in the very stout trolling rod for leviathans, sometimes ringed loops are screwed on or slipped over the rod.

The mechanical action of the rings on the line is such as to make it prudent to remark, that, provided they be perfectly smooth, they had better be too numerous than too few, particularly towards the top of the rod; for the more the line is kept to the rod, the less extensive or open will be the angles formed between contiguous rings by the rod and line. This will be readily understood when it is considered, that the point of attachment of the line at each ring will be the apex of an angle, whose extent will operate as a lever acting to force out such ring; consequently, the less open this angle is, or, to express it more distinctly, the shorter is this lever, the less strain will there be on the ring on which it acts. A spike should be added to the butt of almost every rod, except salmon rods. This is usually done by means of a screw inserted in the butt-end; but as more convenient, in the home-made rod it may be made a fixture by omitting the screw.

2938. *New made rods require varnish as a preservative.* Rods from the hands of dealers are usually already varnished, and the owner has only to repeat the process occasionally: but with a new rod of our own make, we should wish it to be treated in the following manner:—soak the joints, as soon as finished, in equal parts of drying linseed oil, by brushing them lightly over every day for a week. When another week has passed over, and the rod has become perfectly dry, proceed to coat it with copal, mastic, or hard brown varnish: caoutchouc, better known as India rubber, when dissolved over a slow fire in linseed oil is also an excellent substitute for the other varnishes. The *intention* of these applications is to enable the wood to resist the *effects of moisture and the attacks of insects*, particularly the *Dermestes Domesticus:* whatever, therefore, is at once impenetrable to the one and noxious to the other is proper. Thus a solution of any gummy resin may be employed as fulfilling both these intentions. Varnishing has also another salutary effect, it prevents the whippings of the rod from wearing, by giving them a surface at once solid and smooth. We conclude by admonishing the angler, that when he has once obtained an excellent rod, and has habituated himself to its action, he can hardly prize it too much. The continued use of an individual rod (in fly-fishing at least) is like the use of a favourite gun; a dexterity is acquired in regard to the employment of that particular implement, whether gun or rod, which cannot be transferred to another without a long course of practice.

2939. *The best rod without continued care* will become rotten from the alternate action of sun, wind, and wet. To obviate this, take it to pieces, and wipe each part dry on every return from fishing, and place it, not as is usually done, on the first spot that presents itself, but in one determinate situation, free from exposure or accident. Our own plan was, to hang each joint to a hook in a dry cabinet, and to the lower end of each joint we appended a weight to keep it from warping.

2940. *When a rod is put by for the season*, it should be considered in the light of a new rod. Let it therefore at least be well rubbed over with drying linseed oil; the hollow parts should also be oiled, and a dry (but not too dry) situation chosen for it to be laid up *in ordinary*. It would however be better, after the application of drying oil without, and the soft oil within, to varnish it completely as at first. *Every rod in full use should be thus treated every season*, which will greatly tend to its preservation. It is only by keeping the surfaces completely coated with varnish, that the attacks of minute destructive insects of various kinds can be prevented from penetrating the solid grain. The hollow joints, after they are fully moistened with linseed oil, should be well stopped with a plug as a farther security against these penetrating gentry.

SECT. II. *Fishing Lines.*

2941. *Lines for angling* are made of the gut of the silk-worm, or of silk, horse-hair, silk and hair, cow-hair, and also of Indian and other grasses. Some lines are made of one of these articles only, others are manufactured of two or more together. Lines, like rods, are either purchased or made by one's self; but, after all, the lines of reputed tackle makers, provided that sound judgment attend the purchase, are the best. In large manufacturing towns in the vicinity of rivers of note, line makers of established reputation are usually found, from whom excellent lines of most descriptions may be procured, and especially such as are peculiarly calculated for the local fishing of each place: for we presume no discreet angler would feel himself certain of meeting in Edinburgh or Dublin with such a roach or dace line as he might obtain at every respectable tackle shop in London. It would be also equally difficult, or perhaps more so, to purchase a perfect and complete series of barbel tackle out of London. To make the foot length of a fly-line symmetrically taper requires more judgment in the selection of the several pieces of gut than most possess, and more patience than most will bestow; and yet, without these requisites, no good line can be made. We particularly refer to the foot or gut length. Fly-fishing is more pursued in the North, and the tackle was formerly more attended to there; we however have by us some good fly-lines of London make. Foot-lines are made excellently, of the very best gut, of the proper tapering form, by those few tackle-makers in London who understand fly-fishing. There can be no sufficient reason why the fly-lines of the London manufacturers should not be as good as those of Edinburgh, — nay, better, since the advantages are in favour of the English metropolitans, seeing they have the earliest access to the markets, whether for gut or silk. Paying also as they do the highest rate of wages, they rear and foster some of the best mechanics in the world; nor has it ever been disputed, that in the manufacture of bottom lines they beat all makers whatever; and we should be willing to back some London fly-lines against those of Edinburgh or Dublin, although we know the Edinburgh fly-anglers are among the best in the world.

2942. *Silkworm gut* is the most esteemed article for foot-lines of any substance known. It is of extreme fineness, strength, and durability, and its natural colour is not found to be objectionable to fish. As its name implies, it is manufactured from the intestines of the silkworm. Appended to *Nobb's Troller*, is a description of "The Method of Making Indian Silkworm Gut," (*fig.* 480.), which to those who have not the work, may prove interesting: — "Take," he says, "the best and largest silkworms you can procure, just when they begin to spin; this may be known by their refusing to eat, having a fine silk thread hanging from their mouths. The worms must be kept in some strong vinegar covered close over for twelve hours if the weather is warm, if not, two or three hours longer will be necessary; when taken out (*a*) they must be pulled asunder (*b*), and you will see two transparent guts (*c c*) of a yellow green colour, as thick as a small straw bent double, the rest of the inside resembling boiled spinach: you can make no mistake. If you find the guts soft, or break upon stretching them, you must let the worms lie longer in the vinegar: when fit to draw off, you must dip one in the vinegar, and stretch it gently with both hands to the proper length, or very nearly so. The gut thus drawn out, must be stretched out on a thin piece of board (*d*), by putting each end in a slit therein, and placed in the sun to dry. This is the real gut, and the mode of drying it is the cause of the ends being always cramped. If your worms are good, and you follow this plain receipt, you may depend on having the best gut." Notwithstanding the distinctness of the instructions and the promises of success, we have not yet met with any gut so formed: but we learn from other sources that such is really the process of forming the gut, and as a matter of some curiosity we introduce it. The best comes from Spain.

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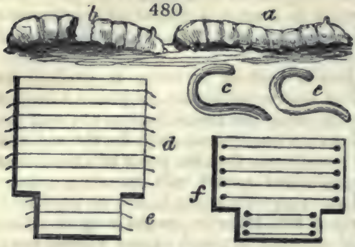

SILKWORM GUT.

SUBSECT. 1. *Rod Lines.*

2943. *The manufacture of a gut line for bottom fishing* is neither a difficult nor an unpleasant operation, when the knack of it is once acquired. It is not often, however, that what is called a *gut line* is made of gut throughout its whole length. When a winch or reel is used, two or three yards only are usually appended to the reel line. In some fine fishings, however, a reel is sometimes avoided by wise anglers, as in roach fishing; and then the line is occasionally formed of gut throughout, but more frequently it has four or five feet of spun hair line added to the rod end of the gut lengths.

2944. *In the manipulation of a gut line* commence by selecting a proper number of perfect gut lengths, which, having rendered them pliant by drawing through Indian rubber or soaking in water, place out at length on a table, beginning with the largest for the top, graduating them downwards to the bottom. Having so done, tie each hair to its fellow by a water knot (to be described), and whip the ends neatly but strongly with fine silk, particularly selected for the purpose, which should be first well covered with either shoemakers' wax, or, by preference, with a white colourless but equally adhesive wax, described hereafter. Top the upper end with a loop; the lower end, if intended for float fishing must, by a process which will be detailed in another place, be leaded sufficiently to balance the float. Last of all, either fine-loop this lower end for a looped hook-link, or fasten the hook-link on at once by a water knot; and whip that also neatly and securely as before with the white silk and white wax.

2945. *These minutiæ* in the lines purchased of some fishing-tackle makers are not sufficiently attended to, but experienced anglers know them to be very necessary to insure success on some occasions. For these reasons it is, if possible, better to *make lines* after this fashion ourselves, or at least to order them to be so made, than to trust to those commonly sold. The black *whippings* (for instance) with shoemakers' wax, so usual in purchased lines, when fish are shy will often attract their attention as much as the bait, and thus deter them from taking it. In fly-fishing these black specks are also frequently the cause of false *rises* both from large and small fish, but particularly from the small fry, which mistake the black whipping for a gnat and it is their eagerness, probably, which deters the larger fishes from coming near. Many anglers therefore, to avoid this, content themselves with the water knot alone; but a line so formed is neither so neat nor so strong as one properly whipped with white wax. In fly-fishing, particularly, the knot is constantly entangling itself in the weeds. Gut lines should be kept on a wooden line-reel in preference to being wound on a piece of split cane, which practice, if often repeated, is apt to fray the line. On the gut lengths for fly-fishing we shall treat when the fly line comes to be considered.

2946. *The hair line* is described by Mr. Daniel as requiring much care in procuring its materials. "The hair that is most proper is that which is taken from a young, healthy, grey, or white stallion, and which is of a pale transparent water colour; that from the middle of the tail is best." Walton however expressly states, that black hairs are always more even than white or light coloured ones. "The hairs," Mr. Daniel continues, "should be sorted singly, and the biggest, roundest, and freest from blemishes, made up into small bundles: the next sized hairs, and all that are sound and good, are to be alike sorted and parcelled out: they are then to be laid in clean spring water for twelve hours; after that, washed well, and dried either with bran, or by hanging them in a room where the heat of a fire or the sun comes (they must not be placed too near a fire): when dry they should be again sorted, and the best done up five or six score together, with their root end quite equal, and tied round with thread at both ends and in the middle, and should be kept in a dry place." Mr. Daniel says, "Hair must not be touched by oil, or it will become hollow and rotten." We however have our doubts of this; and he adds, that it ought to be kept in parchment. Dipping it in water every two or three months, and afterwards slowly drying it, will preserve it for years.

2947. "*In the making of hair lines*, each hair in every link should be equally big, round, and even, that the strength may be so proportioned, that it will not break singly by any force applied, but altogether. By a careful selection of the hairs, they will of course stretch, and bear a much stronger force than when a faulty hair is included. Avoid trying the strength of the individual hairs by a strain before twisting; the best can be easily selected by the eye. Two or three inches of the bottom part of the hair should be cut off, as it is generally defective. The links should be twisted very slowly, and by no means harshly, but so as to twine one with another, and no more; for a *hard* twisted line is always weak. By mixing chesnut, black, or any other coloured hairs, the line may be varied at pleasure."

2948. *The North Country Angler* thus describes his processes of twisting hairs: — "Some make these lines with three small quills, about two inches long, through each of which they put the third part of the hair they use, and have a little bit of a feather end, or wood, to keep the hairs fast in the quills: they tie a knot at the end of the hairs, and twirl all the three quills equally with the ball of their hand upon their knees, putting in hairs, at proper places and distances, into the three quills. Others use three little sticks, about four inches long, as thick as one's little finger, with rings to fit upon their ends to keep the hairs fast; these sticks they twirl about till all the three strands are equally twisted, and then plait the line down to the sticks, and so on."

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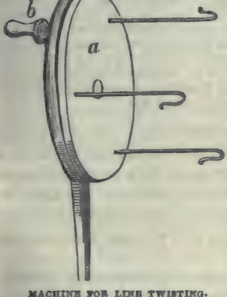

MACHINE FOR LINE TWISTING.

2949. "*The most easy method of making hair into lines,*" says Mr. Daniel, "is by a small engine, which is sold at most of the fishing tackle shops. It consists of a large horizontal wheel (*a, fig.* 481.) and three very small ones inclosed in a brass box, about a quarter of an inch thick and two inches in diameter; the axis of each of the small wheels is continued through the under side of the box, and is formed into a hook: by means of a strong screw it may be fixed on any post or partition, and is set in motion by a small winch in the centre of the box (*b*). The process is soon acquired, and it is thus used: — Take as many hairs as you purpose the line shall contain, and divide them into three parts; each of these is to be tied to a piece of fine twine doubled and fixed to the hooks which impend from the machine; then take the piece of lead which has the hook at its top, and after tying the three parcels of hair together at the loose end, hang the weight thereon; after this, cut three grooves in the sides of a cork at equal distances, and in each groove place a division of the hairs, that, by gently turning the engine, the links may turn with the greater evenness to the lead. As the link grows tighter, move the cork slowly upwards, and when the whole is sufficiently twisted, take out the cork and tie the link into a knot, and so proceed till the quantity of links wanted for a line is completed, observing to lessen the number of hairs in each link in such proportion as that the line may be taper. The links should then be laid for an hour in cold water: some persons, whether a hair starts or not, retwist them before they are made into a line, and more particularly when there is an odd hair in the number twisted. Some put the hair for ten minutes into warm water, before working it into links." We introduce this line practice, not because we doubt the goodness of the manufactured lines to be bought at our best fishing-tackle makers, where we know the very best are to be met with, but we do it to meet the wishes of many fancy artists, who are not well pleased unless the whole of their gear is of their own make. The capability of thus furnishing their own lines is particularly felt by those who live very remote from the metropolis, or are on their travels.

2950. *When a line is to be made of the plats just described,* the practical artist takes three or four for the upper part of his line, with twelve hairs in each; next three or four with nine, and two or three with eight or seven, which finishes the groundwork of what he considers a strong line. After being held together by dipping about half an inch into melted wax, they are to be divided into three and spliced, wrapping above and below the splice. At each end of every line an inch loop is made, either wrapped or knotted.

2951. "*To make a fly line of horse-hair,*" says Mr. Daniel, "without the aid of the above mentioned engine, and where a reel is not meant to be used, take three hairs, put them level at top, and knot them; cut off the other ends so far as they appear faint, leaving all of the same length; then hold them even over the top between the finger and thumb of the left, and begin twisting with the right hand, stroking them frequently below the hand that holds them to keep them from entangling; then proceed to the end and knot it. When four of these are finished, make four with four hairs each, four with five hairs, and continue increasing a hair until the quantity requisite to complete the line is done: these links should then be put into cold water for half an hour, which will show whether the hairs shrink in any of the links, and such as do must be retwisted. The four smallest are to be tied together in water knots, leaving the finest (should there be any difference) lowermost: proceed thus in fastening the links together until the line is made, which should be from nine to twelve yards long: the short ends must be cut away near the knots and whipped with well-waxed silk, and a loop made at each extremity, one to fasten to the rod, the other to loop on the foot links, which should never consist of three yards of either gut or hair for fly or bottom fishing. In making strong lines for bottom or other angling, you may begin with any number of hairs, and increase every link or every other link, recollecting that in a four-hair link they may be divided as you twist, keeping two on each side the hand: with six they must be divided into three equal parts, and in like manner for any size that the fingers can twist, and which they always do better than any other mode of twisting."

2952. *The single hair line* remains yet to be described. This line many of our best anglers use at *bottom* for roach, dace, and other *fine* fishing. The only art in the making of this line is to select the very best hairs, and to tie them with a water knot firmly without whipping; but the knot may be rubbed between the fingers with a morsel of white adhesive wax until it becomes covered with it. We prefer the using of no more length of *single* hair in the making of this line, than what is within the observation of the fish: all the rest of it we add of some other fine but stronger material. The upper part of the line may be of *three* twisted hairs, the centre portion of *two*, and two or three feet of the lower part of *one*, as will be again noticed in roach angling.

2953. *On the advantages of single hair lines* we find the following valuable remarks in that excellent practical work, *Salter's Angler's Guide;* and as they are in exact accordance with our own ideas, and with our practice also, we avail ourselves of the additional weight which our precepts must gain by this authority: — "In respect to the advantage arising from angling with lines made of single horse-hair and hooks over those which are made of fine gut, some difference of opinion exists among anglers: the advocates of gut say, when it is equally fine, and of the same colour with horse-hair, it is not more likely to alarm fish than horse-hair, and being much stronger it certainly deserves the preference. This seems plausible; but I know from practice, that in angling with a single hair line, fish (especially roach) may be taken that will not touch the bait when offered with a gut line, though the line shall be as fine and of the same colour, &c. as the hair line. To ascertain the fact, I have several times taken off my hair line when roach have been well on the feed, and put on one of gut; I could then hardly take a fish: again I have changed for the hair line, and again had excellent sport. Such has invariably been the case with me and many experienced anglers of my acquaintance; therefore I should certainly recommend single hair to those who fish for roach, dace, bleak, and gudgeons; and assert, without fear of contradiction, that they will kill nearly two for one to others who angle with gut however fine. The only reason I can assign for this difference is, that gut swells, and ever retains a shining glossy appearance in the water; and also that small beads or bladders of water hang around the gut, which increases its bulk while in the water, and probably creates alarm among fish."

2954. *Indian grass lines are often used,* and are convenient for the length of each piece; but though extremely strong at a regular extension, yet they are not calculated to resist a sudden effort. In the formation of grass lines, observe to have each link well moistened before beginning to unite them together: the knotting and whipping must be the same as in the gut line already noticed. We have seen, and indeed possess, some specimens of a grass from New South Wales, which, for fineness and strength, surpasses every thing we have yet met with.

2955. *Bristles may be made into lines,* according to the *North Country Angler,* of greater strength than lines of any other material. It is necessary, he informs us to employ for this purpose the Russia bristles, which are much longer and larger than ours.

2956. *To make a bristle line,* he directs us "to split one end of each hair into two portions for about an inch, which is to be dipped into melted white wax, and then joined to the end of another similarly split, by interweaving them splicewise, and finely wrapping or whipping the joints: proceed thus until a sufficient length is obtained for the purpose wanted." — An excellent job for a wet day!!

2957. *Bristles are, however, applied very usefully to the drop-fly* in fly-fishing, as we shall describe anon; but as to their capability of superseding the use of gut, we much doubt. The numerous joinings required would be a very objectionable circumstance; and we strongly suspect that many matters produce an accidental decay in hair which gut will resist.

SUBSECT. 2. *Running or Reel Lines.*

2958. *Silk and hair running lines* spun together are now in very general use by all who can afford to have them. They prove with care very durable, and by the evenness of their texture are particularly adapted for reels. They are manufactured of various lengths, from twenty yards to one hundred and twenty. Bainbridge says, "For bold streams the line should be of the same thickness throughout, and not too fine, in order that a taper hair line of ten yards in length may be attached thereto." We know that this plan is put in practice in some of the north-western districts; but with all due deference to Mr. Bainbridge's instructions, which are in general most excellent, we cannot see why two lines should be made when one will do; neither can we recommend that the reel line be otherwise than spun tapering, unless it be of great length. Our own plan is, that the running line be wholly of silk and hair; but that all lines whatever, beyond thirty yards long, *be spun uniform in size for a certain portion of their length, and of rather more than the usual substance.* This portion is optional; it may very properly be uniform for one half of its length, from which part every reel line, of whatever strength, should be tapered. But we are, perhaps, rather travelling "out of the road," as we shall have to enter on this subject more fully when we describe the fly line. We in fact are now treating of the manufacture of silk and hair lines generally, and of such as are applicable to all varieties of angling, to which however these lines equally apply (though most used in fly-fishing), the platted silk line without hair being often used as a running line by bottom-fishers.

2959. *Platted silk lines* of every colour are also manufactured, which are durable, soft, and flexible, though very tough, and thus are peculiarly calculated for running lines in jack trolling, minnow spinning, &c., or when angling for barbel, perch, carp, and bream; in which, and many other cases, twenty or thirty yards of this line being on the reel, one end of the gut line is attached to it (by looping or by whipping, which is the better method), being first passed through and beyond the rings, when it forms a strong and convenient *running bottom line, without catch or impediment throughout.* Silk platted lines, though excellent for these purposes, are, however, wholly unfit for fly-lines, from their weight and great absorption of water. If mixed with hair they are good.

2960. *The eight-plat silk line* is a new manufactured running line, which bids fair to supersede the platted silk line heretofore in use: it is perfectly round and firm; much more so even than the silk and hair line, and is said to form excellent salmon fly lines. It has the advantage, when well made, of neither kinking nor ravelling, and is therefore well calculated for trolling and minnow spinning. The large is manufactured for about 3*d.* a yard; and the small, as of more difficult manufacture, at 4*d.*

2961. *The fly or running fly line* is a most important matter to the fly-fisher. We have already given sufficient directions for the making of running lines, either of hair, or, what is much more commonly used by those who choose to afford them, *of silk and hair spun together* as already directed. We however must again recommend the prudent angler to purchase them rather than to make them, as strongly as we would incline him to make his own foot lengths in preference to buying them. To do this neatly, and yet with the requisite strength, is the point to be desired; and a little practice with observation will attain it. The conveniences it will produce, and the independence it will bestow on the angler, will compensate him most amply for his trouble. We shall endeavour to enable him to become expert in all these necessary minutiæ, partly by detailing our own practice and the experience of many years; and to do it more effectively, we shall also add the directions of others, collated from the most accredited sources.

2962. *Hair fly running lines* likewise are now manufactured of every length, and with the requisite taper; and, being without silk, they are obtained at an easy expense. By means of spinning instead of platting, they are now made uniform and without knots; but the stiff ends of the hairs protruding, still give to this line a disagreeable roughness: neither do they pass either the reel or the rod rings so pleasantly as the spun silk and hair. When, however, a hair line is to be manufactured by the old method of hair lengths, as already directed, it should be begun by taking as many hairs as will be commensurate with its intended length and requisite strength, both of which must necessarily depend on the width of the water where it is to be used, and also on the probability that salmon or sea trout may be found in such water. Every snood or link should decrease until it end in two hairs, if no gut be used. These last hairs should always be twisted, although Cotton, the angler and the friend of Walton, has entered into a long disquisition, whether they should be left open or twisted; and at last omits the strongest reason why they should be twisted, which is, that, when open, a most offensive ripple is made by the double action of two disjoined hairs.

2963. *The fly running line for salmon* should never be less than sixty yards long, and where large fish are expected to haunt, eighty or a hundred are not too much. When of these lengths, it is not usual to taper the line until within a few (say twenty) yards of the end. Sometimes it is not tapered throughout, but a taper hair length of ten yards is added to it when wanted, a plan, however, to which we have already stated our objections. The spun line is to be preferred for strength, durability, and neatness, and may be purchased of any length at from 2½*d.* to 4*d.* per yard, usually of a water coloured blue: its bottom length of gut we shall describe with the trout line.

2964. *The fly reel line for trout* should not be less than twenty yards long. Where heavy fish resort, and wide waters are fished, thirty or forty yards are not too many. Trout lines commonly taper from or near the outset, and for single hand throwing none other should be used. We were in the habit of fly-fishing with a convenient and economic line: it was forty-five yards in length, about eight yards of the middle portion of which was uniform in thickness, from each end of which portion it gradually tapered to the usual degree of fineness. Its advantages were, that it afforded a very long line if a heavy fish was hooked, and in case of accident to the fly line, all that was required was to unwind and turn the ends, and then rewind, when a new line presented itself, to which, when the spare foot length (which every prudent angler should carry) was added, every thing was complete to begin again. Its economic advantages were, that in much using the finer part of the spun line will both rot and fray, and as it cannot be pieced to advantage, so the remainder is only fit to troll with or to serve for bottom lines, neither of which perhaps is wanted. By the method now proposed it is only, as already observed, to reverse the line, and altogether a new fine part is gained. We believe no plan for fly lines for trout or small salmon is equal to this.

2965. *The foot or bottom length* is no less important than the line itself. Unless where very fine fishing with one hair is required, either Indian grass or silkworm gut were the general articles used in the manufacture of it. The *grass* runs in long lengths and is strong, but it is so *heavy* and so *brittle* as to be unsafe to use without half an hour's previous soaking: these disadvantages have almost excluded it from our books.

2966. *The gut foot length* will therefore particularly engage our attention, and is to be made in the following manner: its length should be from three to four yards, and it should be so put together, that the largest and strongest lengths graduate from the top into those which are finer and proceed downwards. Unfortunately this gradation is not always attended to in the gut foot lengths which are to be purchased; and it is this neglect which gives a decided advantage to those made by the angler himself if he be expert. Some content themselves with simply tying each gut to its fellow by a water knot, and argue that the line is lighter for this. We ourselves accurately weighed the whipping of a foot length firmly fastened, and found it increased the weight five grains only. It is objected also that the whippings are mistaken for gnats, and the fish often rise to them instead of the fly: this we allow to be really the case when the whippings are made with black wax, with which fly lines purchased at fishing-tackle shops are all whipped; but it was our custom to whip with white wax, which may be made equally adhesive and equally plastic. That whipping the knots of the line is necessary, every day's experience in rivers at all encumbered with weeds will show; for when used without, the gut ends which protrude though ever so slightly, the line will hang in the weeds, and bring away small portions, which must be cleared away at each throw, or nearly as often.

2967. *The fly line terminates with a fly.* What is the best mode of attaching this? The most usual is by means of a fine loop: but the objection to a double looping is here greatly increased, and can only be avoided by knotting the fly to the foot length. There is, however, this disadvantage attending it — that either this individual fly must remain permanently attached to the line, or that a portion of gut must be lost at each time of changing it. One mode by which this inconvenience may be avoided is, by having two, three, or more foot lengths, as we ourselves have had, and as we have known some very excellent anglers to have likewise done. In such foot lengths the end fly alone is attached; for by a plan presently to be detailed, the drop-flies are readily detached without looping them.

2968. *Another mode of avoiding the inconvenience* of having continually to shorten the foot length is one practised by ourselves: finding it better to altogether dispense with an end loop, the next question was, how to apply it without its injurious consequences of making a ripple and scaring the fish. This we effected in a great degree by removing the loop two or three lengths of gut from the stretcher, which was done by knotting to the gut of our end-flies an additional gut link, and then making the fly loop at the end of this. We sometimes applied two gut lengths, that we might in still waters remove the loop still further from the stretcher; and we know of no reason, save the loss of gut, why this should not be always done. Thus we had a double or treble length of gut to each stretcher-fly, which removed the objectionable loop much farther from it, and in this practice we long continued. Of course we now allude to purchased flies. Those of our own make we purposely dressed on three lengths of gut, and these we invariably used when we fished with one fly only. When we employed drop-flies, we dressed our stretcher on two lengths of gut, and to the first knot above the looping we attached our first dropper, and so on.

2969. *When more than one fly is used in fly-fishing*, the additional one is called a *drop-fly*, and by some a *bob*, of which there are sometimes two, occasionally three, but seldom more. As these flies drop or hang down from the line, so they gain their name of drop-flies, as the fly which terminates the line and helps to extend it is called the *stretcher* and sometimes the *point-fly*. In narrow streams, and particularly where they are encumbered with weeds, a single fly is greatly to be preferred; and likewise when fish have been in great plenty, we very seldom in our own practice employed more than a single fly. There is a certain end proposed in most pursuits. Is the angler anxious for quantity of fish? Does he reckon his sport only by the weight and number he takes; and is he indifferent as to the means by which he attains his end? Or does he rather prefer the gentlemanly exercise of his art with skill and elegance, whether he return with few or many victims? There are great differences in taste: slaughter is the watchword of some sportsmen, and quantity forms the luxury of the pursuit: with others the practice adroitly managed with moderate success is sufficient. The latter will be commonly found fishing in well stocked waters with one fly; such is certainly the most scientific practice, and in its performance is by far the most interesting and satisfactory.

2970. *Drop-flies* are however necessary at particular times and under particular circumstances, and are used to advantage in wide stony rivers, where the water is fine and the fish scarce; in which cases it is perfectly fair to use every means to insure sport. By using drop-flies a variety of bait is exhibited, the favourite fly of the fish is sooner brought into sight, and three flies are certainly more likely to pass within view than one, when the fish are few and widely extended.

2971. *The attaching of a drop-fly* is variously performed. If only one be used, it may be placed three feet and a half, or, if the water be wide, four feet from the stretcher: when more than one drop-fly is attached, the first should be placed about a yard from the stretcher or point-fly, at which part it is usually fastened by a loop just above a knot in the descending part of the line (our own mode of fastening the drop-fly will be described presently). This *first* drop-fly should hang about three inches from the line; but when only one is used, and that is placed four feet from the point-fly, the bob or drop-fly may be hung four inches from the line. The *second* dropper, when more than one is used, may be fastened in the same way with the former, about a foot and a half from it, having a length of gut, or hair, of four or five inches, according to circumstances. When it is wished to use even a third drop-fly, let it hang six inches or rather more, about a foot, from the second. It is to be observed, however, that more than two flies, besides the stretcher, or point-fly, only encumber the fishing, add to the weight of line, make more stir in the water, and prevent the lightness of the fall of the flies generally. But, as before observed, the real elegance of the practice is materially injured by any drop-fly at all.

2972. *Where drop-flies* are used (*fig.*482.), regard should be had to the just proportions which should be observed between them. For very obvious reasons the stretcher-fly ought to be the largest, to carry the line by its momentum beyond the resistance offered by the drop-flies. For the same reason it is necessary that the first drop-fly should be less than the point-fly, and that the second drop-fly, if there be one, should be still smaller than the first. A prejudice also exists among anglers in favour of using a winged fly at the point, and hackles as droppers. In our own practice we have frequently found it more prudent to use small winged duns, gnats, and ant-flies as droppers; and we have chosen indiscriminately, as it suited our purpose, either a palmer-hackle or winged fly for the point. We have dwelt on these particulars, because we are convinced that an observance of them is necessary to a successful practice of the art. We however make no doubt but that some, perhaps many, fly-fishers will laugh at our dislike to loopings. We agree with them, if they please, that they are most convenient; but we shall be borne out by every observant and experienced fisher, that the additional weight and size of the line which it receives by the duplicatures of the loops, is in itself a great objection to them; and the increased ripple which they occasion in the water when the gut parts, as it frequently does, is still a greater evil. Unless therefore the plan we have just specified, of a more distant loop be adopted, we recommend the point-fly to be fastened to the foot line by a water knot in preference to a loop. The drop-flies may also be secured without looping by a method yet to be described, which acts by placing them between running knots, by which they may be changed at a moment's notice. The simplicity of construction of this mode of hanging the drop-flies will prevent any injury to the line, and their own firmness if properly attached will prevent them from yielding to the action of the water, and of doubling, as is too frequently the case with drop-flies, close up to the line itself, and then moving along the stream with that in one continuous body, thus destroying every chance of their attracting the notice of a fish.

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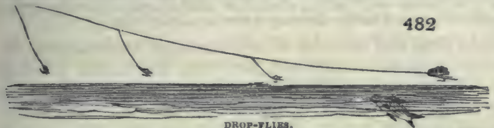

DROP-FLIES.

2973. *The slip-knot mode of attaching drop-flies* is exemplified in *fig.*483., and is that to which we have just alluded, and we strongly recommend it to the notice of every angler. Bainbridge hints at the same method, but we do not recollect it being observed on by any other writer. We will suppose the foot length divided about the insertion of each dropper, and its union again partially effected by a loose knot at the end of each portion. It will be observed that this knot differs from the common slip-knot only in having its end passed twice instead of once through the loop. It is evident that if these knots be drawn tight, the union will be complete and firm, but that the knot will slip backwards and forwards on the smooth gut by the application of a little force. As long therefore as the knots remain otherwise than drawn towards each other by tightening the line, any thing can be put between the two links of line. When by the extension of the line in fishing, or by the action of the hands, these knots are drawn together, the interposed substance, which in this case should be the line of the dropper, is closely embraced, and is permanently detained in this situation by a knot made in the upper end. We know of no mode of fastening firmly any matters that are likely to be wanted to be attached to our fishing-tackle than this; it is at once strong, takes up little room, and never unties. It offers nothing bulky to attract the attention of the most wary fish, which in some cases must be taken into consideration in treating with these gentry for the price of their captivity.

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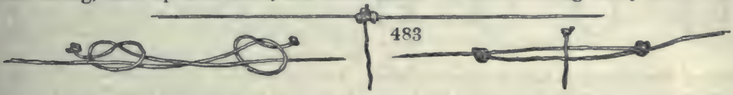

SLIP-KNOTS.

2974. *To change the drop-flies thus attached,* nothing more is necessary than to draw apart the knot of each end of the fly line by means of the thumb and finger nail, when the looping will slip open, and allow of the removal of the fly.

2975. *Very fine fly lines* bottomed with single hairs are eagerly sought after by some anglers, with whom it is the brightest feather in their cap to be able to land a large fish by means of one hair. Single hair lines are also absolutely necessary to insure sport under some circumstances, as in bright and shallow streams during the droughts of summer. It is true gut lines may be got equally fine; but they are *more glossy.*

2976. *A very ingenious hair fly line* is thus described in *the North Country Angler*. Its links are made with one, two, or three flies to loop on at the lower end of the line. For the finest line he recommends that the link be all of single hairs, the smallest and weakest of which must be selected, and the end fly dressed to the root or thick end of it. This fly he advises to be a dubbed one, "because, being often under water, it will resemble a *sitting fly*, while the hackle will look like a fly on the wing!!" He generally dresses it with wings only, with a bristle to keep on a grub or gentle, which, for autumn fishing particularly, is an excellent practice.

2977. *The second fly in this fine fishing* should be a hackle dressed to the small end of the second hair, which being done, the lesser end of the first hair is to be put to the fly end of the second hair. By drawing this fly about three inches beyond the end of the other hair, and fastening it with the fisher's knot, the second fly will hang perpendicularly from the line. The third hackle is to be dressed to the small end of the third and strongest hair, knotting it to the thick end of the second hair, but letting it hang an inch lower down than the second fly.

2978. *When the hairs are more than twenty inches long,* put two only into the link, and consequently only two flies; for when there are three flies, they should not be more than eighteen inches from one another.

If there are three lengths of two hairs, the same method must be pursued; but when the uppermost plat is of three hairs, then the third fly may be dressed to the thick end of the second plait.

2979. *Night lines* are used for eels, trout, perch, and other night-roving fish; and as it is usually the largest fish which are then on the feed, so the material of which such lines are made must be proportionably strong, but more particularly so when they are intended for eels, whose powerful struggles require chalk line, laid-cord, or strong whipcord; but the latter, it is to be remarked, are very apt to kink or tangle. Twine, when hard twisted, makes excellent eel lines in the following manner: — Take three or four links, according to the strength of the twine, and plait them, firmly greasing the line when finished, which will greatly tend to prevent its kinking. For eels about ten yards of this, or other stout line, should have eight or ten inches of gimp attached to it, and to the gimp, whip very firmly a double or single hook, according to the bait used. The other end of the line should be fastened to the shore by a strong wooden peg.

2980. *The chain line* is also a night line, and must be of still stronger manufacture, requiring not less than from ten to twenty yards of such line, jack line, &c. having pendent from it, at every two or three yards, half a yard of platted line, whipcord, laidcord, or gimp, with proper single eel hooks. For the use of these we refer to eel fishing.

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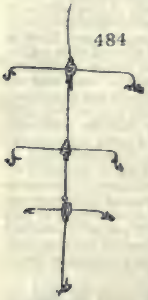

PATERNOSTER LINE.

2981. *Salmon, trout, and perch*, are also taken by *night lines* of platted silk and hair, whipcord, platted twine, &c. Some are made in the form of *paternosters;* some are attached to trimmers, strong plug floats, &c. &c. The various forms of these night lines and the materials connected with them, as well as manner of using, will be more fully detailed when treating of the capture of the several fish for which they are adapted.

2982. *The paternoster line* (*fig.* 484.), so called, we presume, from the rosaries which have beads for the Pater Noster at intervals, is a strong line exhibiting in a row various projecting hooks of different sizes, the largest and strongest of which are placed lowest, as the smallest and finest are the highest. The bottom of the line is suffered to drag on the ground by means of a bullet, or leaden weight; and the first hook is fixed about four or five inches from it; and as many of them as the angler pleases are hung above that, each placed from twelve to fifteen inches apart from another. Each hook is whipped on a bristle or strong gut, by which it is made to stand out horizontally from the line, and show the bait well.

SUBSECT. 3. *Hooks.*

2983. *The hook* is an appendage of much consequence to fishing apparatus. Infinitely varied as we find its figure, as depicted in ancient lore and in the specimens brought by travellers from cultivated as well as rude and savage nations, yet the principal modifications used by the English angler are known by the names of the Limerick (1, *fig.* 485.), the Kendal (2), the Roundbend (3), and the Kirby (4). The Limerick hooks were formerly doubly segmental, appearing as the larger portion of a small circle attached to a small portion of a much larger circle. This form gives it, when any thing acts on its point, an inclination to recede from the object, its common centre falling much more within the line of the barb than in the other varieties. The form of the barb is also injudicious, describing too extensive an angle with the hook, by which a considerable impediment is placed to its entrance into the flesh of the fish; and particularly so in the practice of fly-fishing, where this hook is often found to prick without securing its objects. The Limerick hooks are however, we believe, now somewhat altered in this respect, but even yet not sufficiently so to be perfect. These hooks, however, are commonly well manufactured, and we have met with some anglers who prefer them to all others for their temper; and among these is the distinguished author of *Salmonia*, who says, "I never use any hooks for salmon fishing, except those which I am sure have been made by O'Shaughnessy of Limerick; for even the hooks made in Dublin, though they seldom break, yet they now and then bend; and the English hooks made of cast steel, in imitation of the Irish ones, are the worst of all. O'Shaughnessy is, I think, a better maker than his father was, and the curve and the general form of the hook are improved." Since Sir Humphry Davy wrote this, the O'Shaughnessys have not disappeared, nor yet the high reputation of Limerick hooks. Dublin hooks, particularly for salmon, may be considered the best, and Phillips, of Ellis's Quay, is the best maker of them. If the proper price be offered to the hook makers of Redditch, they will turn out as good ones as can be desired; and they will make them of any shape the angler may direct. Phillips's hooks are cheaply imitated, as O'Shaughnessy's used to be, and this cheap imitation cannot be relied on. The tackle-makers mentioned at p. 967. will furnish good hooks; also Messrs. Hutchinson and Son, Kendal.

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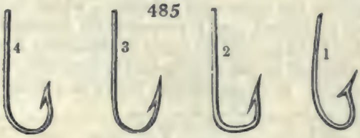

VARIETIES OF HOOKS.

2984. *The Roundbend hooks* have also their admirers. In our early angling we always used them: and if we could procure them somewhat shorter in the points, there are some sorts of fine fishing in which their acuteness of angle in the barb would be rather an attraction than an objection. We are disposed to think, also, that for the gristly-mouthed fish they would be, if shortened, less liable to be retracted than barbs which project: but in leathern-mouthed fishes they are decidedly objectionable in every respect. Their *butt*, and the part to which the *barb* is attached, forming nearly parallel lines, render them preferable to the *Limerick* hooks in not retreating from the bite. They are good for worms.

2985. *The Sneck-bend* projects laterally in its *barb* from the parallel of the *butt*, diverging gradually from the bend about the eighth of an inch to the right or left of the shank, commonly the left. The angular form of the bend gives an unnatural appearance to the worm when on this hook, thus making it objectionable for worm-fishing, but less so for gentles. The angular form of the bend renders it also unfit for paste, as we have often had occasion to notice, the square corner bend being difficult to be hid by the paste, and liable to be soon washed bare by the action of the water. They are best for flies.

2986. *The Kirby hook* is that which is in principal use by English anglers. It has some enemies, who attribute to it that it fails in *striking*, and inflicts such an incision as frequently to allow the hook to make its way out by the opening at which it entered. But we have sometimes found on inquiry that the Sneck-bend, with its lateral projection, has been the hook complained of, and has been mistaken for the Kirby. The circular form of the bend of this hook, yet inclining slightly to an angular flexure about its centre, we think peculiarly favourable for *retaining* a fish when hooked.

2987. *A good hook* should stand straight, and be long in the *shank;* whatever portion is superfluous for dressing a short bodied fly on can easily be taken off with cutting-pliers. Some flies, as the drake-fly (*Ephemera*), the stone-fly (*Perla*), and the Harry-long-legs, require to be dressed very long in the body, and therefore call for long shanked hooks. A long shank is likewise necessary for worm-fishing; and if it taper off a little, it offers a neater dress for a fly, and a neater whipping for any other bait. Small indentations should be made on the shank to sustain the gut. Look well to the point of each.

2988. *The examined hooks* should be kept carefully separated, and not jumbled together as they frequently are, to the utter destruction of the keenness of their points. The best mode of doing this is by means of a flannel book, with any number of folds or leaves. When the uppermost fold is turned back, insert the barb of a row of hooks through the flannel or woollen cloth. When full, turn this over, and the barbs in it will then exhibit themselves in regular rows on the other side. It will be obviously important not to insert any more hooks in the next leaf, as the hooks so placed would interfere; but into the next one beyond this place another set, and so on in each alternate leaf. To disengage a hook take it by the bend, and draw the shank through the flannel or cloth, which should be of sufficient thickness, but not too close in its texture. It should also have each leaflet smeared over with almond oil or fine olive oil. This will be found to be the most simple, convenient, and efficient mode of keeping hooks, and corresponds exactly with the leafy needle-cases of the ladies. Other subordinate varieties of hooks are also manufactured for barbel, eels, and jack, the latter of which will be noticed hereafter.

2989. *Barbel hooks*, so called from being much used in barbel fishing, are equally employed in many other instances, as will appear from our frequent mention of them in the course of our work; indeed, our opinion of them is such that we would recommend the hook manufacturers to make them as low in the scale as the others. They differ from other hooks only in being made of much stronger wire, by which they gain an increase of strength without a correspondent increase of linear dimensions; in other words, the capacity for resistance in a No. 3. barbel hook is equal to that of a No. 1. hook of the common sort; and this is evidently of much consequence on some occasions, where the fish, though large, strong, and violent, is very wary, and has a small mouth.

2990. *Eel-hooks* form also a separate variety, and are made either double or single (*fig.* 470.). These, like the barbel hooks, are made massive, and are less highly tempered than the usual hooks, that they may not snap by the struggles of these fish. The bend is usually rather square, the shank short, and the point bent inward to avoid scratching the eel in its suction of the bait.

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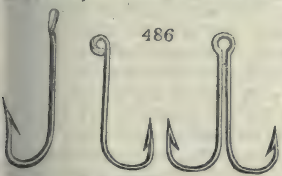

EEL-HOOKS.

2991. *The history of hooks* for fishing might furnish the antiquarian with many hours' amusement; and the economist might be pleased to trace their gradual improvement from the earliest notices of their use to the present time. The classical student will find them frequently mentioned in the writings of the ancients; and the scriptural reader may find several reminiscences of them on reference to the introductory chapter on angling. (P. 959.) It was not however, until the conversion of iron into steel was perfected, that fishhooks could have been any thing like the efficient article they now are; at once sufficiently minute to deceive the most wary of the prey, so finely pointed as to enter deeply and insidiously, and yet strong enough to retain whatever they have entered. When, therefore, Prince Rupert invented the art of tempering steel, he conferred an incalculable boon on the angler. Mr. Charles Kirby was probably a manufacturer of ironware at that time, and, among other articles, of *fish-hooks;* for we are told that this inventive prince communicated the art to Mr. Kirby, who from his instructions first manufactured steel hooks, and that in his family the secret (if any secret it can now be) remains. Certain it is, that *Kirby hooks* are still in high estimation and extensive demand. Did our limits permit, we should have much pleasure in laying before the reader the figures of the olden books appended to the *Treatyse of Fysshynge with an Angle* of the Benedictine Dame Juliana Barnes or Berners, together with her instructions how to become "crafty" enough to manufacture this part of fishing "harness."

2992. *The hooks now used by anglers* are, however, so essential to our purpose, that we have exhibited them on one cut in their various numbers, from 1 to 14. As on the material of which a hook is made the angler's success so much depends, it is very necessary that each hook be tried before it is appended to the line. Every fishhook should be manufactured of a proper temper; that is, so as to resist all ordinary force applied without snapping, and be equally tempered not to snap. To try the points, apply the thumb nail to them, and if they neither bend nor break, they are fit for the purpose wanted. The general strength of the whole hook may be judged of by inserting the point of one in a cork, and, forcing it, keep each hook separately inserted into the flannel with which the hook-book should be furnished, whether the hook be gimped, or gutted, or unarmed.

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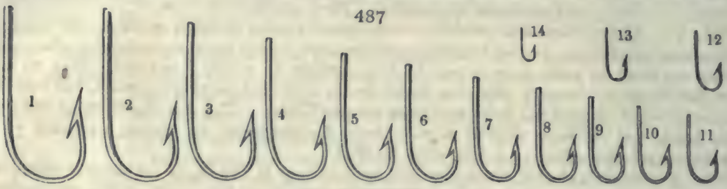

SCALE OF FISHHOOKS.

2993. *The dyeing or staining the gut or hair* for lines, forms a prominent feature in almost every work on angling. Our own experience, however, has never allowed us to attach so much importance to this matter as some do. It is nevertheless evident, that the line used and the water fished in should not be totally unlike in colour. Of whatever material therefore a line is formed, if it be not already of the colour of the water usually fished in, it should be dyed to that colour; and if the accidental changes, to which the neighbouring waters, from floods or other causes, are known, varieties of lines, coloured to represent such changes, should be kept. Dyeing is a chemical process, and consists in combining a colouring matter with hair and similar animal substances, as silk, gut, &c. for the purpose of changing their colour. It is not difficult to stain the articles which the angler usually employs with vegetable juices, as alder, spinach, walnuts, various gums, tans, tea, coffee, &c. &c.; but the action of water soon washes out the colour, unless some *mordant* be applied to render it permanent; and the reason therefore why alumine (*common alum*), or sulphate of copper (*copperas*), appears in most of the receipts is, that one or other of these are generally used as mordants to the colouring solutions of vegetable, mineral, or animal matters, by the intervention of which their colouring properties are received and become permanent. The methods employed to dye your lines may be gained from many of the old works on angling, to which we would refer the reader, it being a matter of some importance to his fishings. Warm ink and water is the simplest dye.

SUBSECT. 4. *Whipping, Knotting, and Tying on Hooks.*

2994. *Of whipping.* This forms an important part in the fishing-tackle maker's operations, and consists in surrounding with twine, thread, or silk, some original substance, either to strengthen it, as in the case of a cracked rod, or otherwise to attach different substances to each other as the splicings of a rod, its rings, &c.; or to unite links of hair or gut together, or the hook (1.), to the line. The whipping is likewise itself usually further strengthened and rendered more adhesive by means of wax. *Shoemaker's wax,* as the strongest common adhesive matter, is generally employed for the purpose; but a white wax, yet to be described, is in some cases to be preferred on account of its colour; in all others nothing equals the shoemakers' wax for the angler's use. The article for whipping is to be firmly held in one hand (in fly-fishing a small vice, or a pair of pliers, is sometimes advantageously used), and the turns are evenly, closely, and tightly carried around it with the other: after which, to prevent its again unwinding, it is to be *fastened off* with the *hidden knot* or tie. When a knot is thus whipped, it is not uncommon to cover it afterwards with a slight coating of wax, tar, or varnish, which greatly preserves it. For whipping various silks are required, and the angler would do well to furnish himself with them from some silk-furnishing shop, where they may be procured in all their varieties, from strong twist to that of the finest possible kind: some of each should be kept on a winder properly waxed; the finer sorts may be waxed in mass, as directed hereafter. Prefer a light coloured silk for waxing, and avoid black as being notoriously rotten; but all the different colours ought to form part of the budget. The London anglers were used to furnish themselves with silks from Mr. Clark, at the Golden Leg, Southampton-street, Strand, but recently the most celebrated fly-makers, and who will not work unless with the best tying silks, have recourse to the warehouse of Pearsall and Co., 145, Cheapside.

2995. *The hidden or finishing knot* forms the *fastening off* of whipping, and has already been noticed in our directions for the mending of rods. It differs only in being applied to a smaller diameter, and in not allowing the use of the fingers to lap over. In small whippings, therefore, when arrived within three or four turns of the finish, lay the point of the whipping silk under the thumb, and then continue the turns firmly and evenly around the inverted end held by the thumb; which turns being finished, take hold of the end, and draw it tight under the lapping, by which the whole whipping will be effectually secured from unravelling. A minute pellet of wax may be pressed over the cut point of silk, or, in preference, the whipping may be rubbed altogether with it, or touch the end with a small drop of hard brown varnish, and as it dries smooth it between the fingers. It is thus that all the lappings of the best fishing-tackle, with very few exceptions, are finished; nor should any line be used without having every joint whipped: an unwhipped joint is unsafe, and cuts the water doubly.

2996. *The half-hitch knot* is used to keep those matters steady and in their place, on which something remains to be done or added, and therefore is never considered as a complete fastening. It is more frequently employed in fly making than in bottom tackle-work: in the former it is constantly in use. To tie it: when a whipping has been continued as long as is necessary, a single looping is then made by passing the end under one turn only of the thread or silk, and drawing it moderately tight, either to the inner or outer side of the whipping. The former is of course the most secure, but as it is usually applied for temporary purposes, this is not of consequence.

2997. *The water knot* is a valuable acquisition to the angler, and is the most effectual mode of securing slippery unyielding materials as gut and hair. It is at once simple and not bulky, and when made properly it never slips. It is by this tie that gut and hair lines are united each to their several links. It is also used to tie the small snoods of hair in line making. *To make it,* first soften the gut in water (hair requires it less), and then pass the ends to be joined around each other twice or thrice instead of once, as in the common *knot,* draw them together in the usual manner. If the gut be properly softened, twice passing the ends over each other makes the neater knot. Observe, that when two or more pieces of hair or gut are to be tied to other two or more pieces, to prevent any of them from kinking from the rest, as the knot draws, keep the threads evenly together. It now remains to cut off the ends about the eighth of an inch from the knot, with fine pointed scissars or a knife; but if with a knife, the nail or a piece of quill should be inserted under the ends, to avoid injuring the line. This done, whip down the protruding ends on each side with strong but very fine silk well waxed with the white wax, and fasten it off with the hidden knot. A minute pellet of wax may be pressed into and rolled around the whipped part, until it becomes thinly but uniformly coated with it: this will not only strengthen the tie, and keep the silk from rising, but will also prevent all chance of the knot hanging in weeds, &c.

2998. *To tie the hook to the line* requires much nicety of practice, and the best materials. The silk employed must be at once fine, strong, and well waxed. First, whip round half the shank of the hook from below to the top, which is intended to guard the gut from being cut by the hook; now place as much of the smaller end of the gut length on the inner side of the shank over this guarding, as will reach to opposite the point of the hook, and commence whipping it very closely and evenly, pressing the turns together every now and then by the thumb nail, observing that the force used in winding be not such as to draw the gut round, which, without care, it is apt to do. When the whipping has been carried down the gut, leave three loose turns, then by inserting the silk end under them and drawing it tight, the whole will be secure. A small quantity of tempered wax may be held between the finger and thumb, and rubbed over the whole from the lower part of the shank upwards, which will make a uniform surface and strengthen the attachment. When by use the whippings lose their coating of wax and begin to fray, it is an excellent practice occasionally to *pay* them thus with a fresh coat by the same means. A small quantity of tar, lightly and evenly painted over the hook-whippings and the knottings of the gut, and then left to dry, has a better effect than varnish, and forms an excellent preservative.

2999. *To arm a hook with a bristle,* it is necessary that, after two or three turns of the waxed silk have been made for the purpose of securing the gut to the inside of the shank, on the outside or back part of the shank about half an inch of stiff hog's bristle be placed, leaving somewhat less than a fourth part without the binding and pointing upwards, so that it should present a very little projection beyond the top of the butt of the hook. This effected, continue the whipping of both gut and bristle to the hook, as already directed, observing, as the whipping proceeds to its finish, to pare off, or thin, both bristle and gut, so as to leave as little bulging as possible; by which precaution the bait, whatever it may be, will slide over it more readily in baiting the hook.

Subsect. 5. *The Float, Shotting the Line, &c.*

3000. *The float* (*fig.* 488.). A philosopher, were he to commence fishing remote from the metropolis, would hardly imagine the expense and trouble employed to bring these piscatory articles to perfection, nor the limits by which that perfection is bounded among the London bottom anglers, particularly in roach fishing. We have known several amateurs so extremely particular in the manufacture of their floats, that they have ransacked (by their correspondents) the foreign markets for swan's and porcupine's quills, reeds, &c., but particularly the former, with an avidity truly surprising. We have seen floats valued at half a guinea each, but of which the original cost of the materials would exceed twice that sum, and even ten times the amount, if the value of the time lost in procuring them were taken into consideration.

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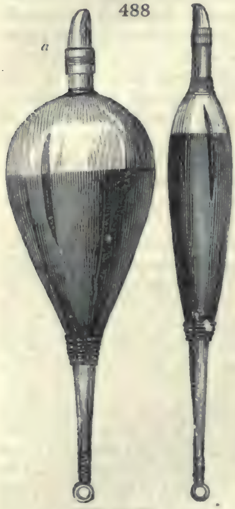


CORK FLOATS.

3001. *Every float should swim critically true*, and should show itself above the water, more by obvious character than by its size and height. If too clumsy it will alarm the fish, if too tall every eddy will disturb it. A good float will indicate the smallest bite.

3002. *Floats are made of various materials*, as cork, reed, wood, and quills, which latter are obtained from the porcupine, swan, goose, and duck, particularly the Muscovy. Some fanciful anglers, it is said, use the bustard quills, under an impression that their spotted appearance may be mistaken for flies. Such is the sapient reason assigned, but simple as we fishermen are, and our venerable father Walton gloried in our simplicity, there are none so ignorant as not to be aware, that neither are these quills variegated to any degree to be distinguishable by the fish, nor are they sought for on this account, but from their supposed durability and capability of resisting the softening effects of wet.

3003. *Floats differ much*, according to the nature of the water fished in, the kind of fish angled for, and the state of the weather in which they are employed. It is essential to success in fishing, that the float be perfectly adapted to what is required; thus, in deep rapid streams, a float must be used of much buoyancy, as one of reed or of cork; for it is evident that not only does a cork float, such as the largest of those figured, offer much resistance to the rapidity of the stream, but it has also to counteract the great weight of lead necessary to carry the bait to the bottom in this case, and so prevent the too quick passage of it over the ground when it has arrived there. When there is a great ripple in the water, it is evident that rather more than usual of the tip of the float should be exposed, or the violence of the stream may wholly hide it. In very extensive waters, large floats of wood surrounded with cork are sometimes used; and in lakes, small bladders of lambs, pigs, &c. are employed, particularly where a boat is used for roving fishing. Live baits likewise require a float of buoyancy and size equal to the resistances of the bait.

3004. *The fish angled for* should be considered in the choice of a float; thus, roach and dace can hardly be fished for with too fine or light a float, as seen in the new river. Gudgeons also require the same in still waters. Bream, from their manner of biting, will take a somewhat larger float; and for perch it requires one still more buoyant, according to the depth of water and the kind of bait used. In sea fishing the nature of the fish, and the depth of the water with its unsteady surface, require a conspicuous and very buoyant float when one is at hand.

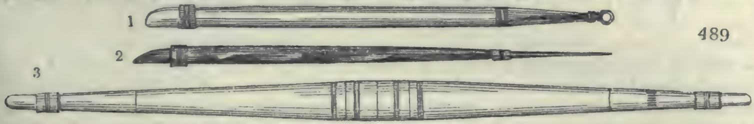
3005. *The state of the weather* must also influence the choice of the float. Whoever has fished on a lake or mere in a windy day, at which time the best perch are often taken, will know the necessity of a powerful float. We have often also angled with advantage for tench, perch, and even roach, dace, and bream, in drizzling rains in warm weather; but we always at such times found it necessary to use a somewhat larger float than usual, not only to make it more conspicuous, but also from the peculiarity of manner in the biting of the fish, which is at these times particularly quick, hurried, and apparently capricious.

3006. *The cork float* (see *fig.* 488.) is compounded of cork and swan quill, or of cork, quill, and wood. A piece of the best velvet cork is first bored through with a hot iron, into which hole is introduced either a *double quilled float*, or a wood plugged float (to be immediately noticed), as the case may require. This is to be done in such a manner that about an inch of the quill may appear beyond the upper part of the cork, and the remainder outside the under part. Before the quill part is introduced it should be smeared with tar, varnish, or any other adhesive matter not affected by water; and if this be done while the cork is hot from the boring, it will the sooner *set* the work. A porcupine quill (2, *fig.* 488.), to be presently exhibited, is sometimes used instead of the swan or goose quill, and is a variety of float possessing both strength and neatness. The figure and dimensions of the cork must of course depend on the fishings for which it is intended, observing that a general model of its form exhibits two cones united together by their largest diameters at the centre of the float, embracing one the upper and the other its lower portion. The buoyancy of the float will of course depend on the extent of the diameter of the cork at the junction of the two cones, bearing in mind this principle, that a large cork float adapted for much resistance to either the weight of lead, the action of very large live bait, or of a powerful wind, eddy, &c. requires the diameter of the upper cone to be by far the most considerable, and tapered off more suddenly than the lower, giving it an appearance of a boy's top (*a*, *fig.* 488.).

From this size and shape of float the first remove presents one of less dimension, with a cork less bulbous than the last, but with the upper cone still somewhat larger than the lower, fitting it for sustaining the struggles of a gudgeon, bleak, or dace, as a live bait, in mild currents and deep waters (*b*). The next size cork float tapers from the centre to both extremities, and is also adapted for deep waters, or for minnow live bait fishing. This finest cork float is sometimes used for roach fishing in very deep waters, where much lead is necessary to sink the line, and particularly if there be current present. If the water be very still, this float, instead of being furnished as the preceding with a bottom ring, may be formed of a double quilled float, and tip capped at both ends (3, *fig.* 489.), which will make it appropriate to fine roach angling in very deep but tolerably tranquil streams. Such a float will be sufficiently buoyant to sustain any leading, and yet capable of giving warning of the slightest bite. But in all instances which require a forcible stroke to insure the fish when the bite occurs, as must be the case in eddies and rapid streams, a ring at the bottom of the float is to be preferred, to prevent breaking the cap of the tipped cap-float, which is very likely to happen when a smart and forcible stroke is made.

3007. *Plugged floats, or single-quill floats* (1, *fig.* 489.), are the most common and the cheapest that are used; they are, however, when well made, very durable and convenient, and are manufactured from a goose quill, or, when it can be procured, a swan's quill, by first abstracting all the soft part, taking nothing but the transparent quill itself. A small piece of pitch is to be then introduced and pressed down, which completely closes the ends; on this place a morsel of white wool, and over this another piece of black pitch, to make security double. Shape a piece of deal of about two or three inches, so that nearly an inch of it shall fit closely into the quill; to retain it in which situation, first dip it in waterproof glue, or otherwise, into a cement formed of bees' wax, resin, and chalk, in equal quantities; in default of these, cobblers' wax, or even tar, may be substituted. It would however be prudent, first to prepare the lower end of the wood before it is sufficiently tapered by boring it with a fine awl, so as to make a hole about an inch up. Prepare a ring by twisting a thin brass wire around a large bodkin, or small part of a tobacco pipe. After this, having with a pair of pliers again twisted the remaining ends of the wire into about an inch of a screw-like form, insert it into the hole in the plug and screw it up, and then taper the wood off to the thickness of a crow quill. We give these instructions merely to assist the young angler, or any other one who may accidentally be out of the reach of a fishing-tackle shop, for in all other cases it is prudent to buy, as being cheaper and safer.

3008. *A double plug float* is occasionally used when it is required to plumb the depth very frequently, as is the case when the water is rising or falling with the tide, and when no success can be expected unless the bait trails exactly at the bottom, as in gudgeon fishing. In this case, and that only, is such a float admissible. It is of simple construction, being formed of one central tube of quill, plugged at each end with wood and ring. Its greatest inconvenience arises from the care with which it must be put into the water, to prevent its slipping, but which may be somewhat remedied by bending the upper ring, so as to let the line press on it.



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QUILL FLOATS.

3009. *The double quill, or tip-capped float* (3, *fig.* 489.), a favourite with many anglers, is made of several pieces of quill graduating from one central portion, of which the diameter is more considerable than the others. This first portion is commonly made from the very largest swan's quill that can be procured, which receives within it a lesser swan's quill at each end, which ends are each of them likewise fitted with a goose quill, and to the end of each of these there is also adapted a small quill point, unless the owner's fancy should direct that it be more expensively and carefully terminated by a narrow pointed portion of ivory or tortoise-shell. This float is much in use among professed bottom-fishers, particularly for roach and other fine biting fish, as carp, tench, &c. Its advantages are, that by its shape it sinks at the least possible bite; and the same form makes it less liable than any other to disturb the waters of ponds, or the still deeps of rivers, rendering it by these circumstances particularly calculated for use in angling for all shy fish. The cap of this float should be made of a strong Muscovy duck's quill, and it may be coloured or not, according to the fancy. It has been observed that those floats which are made rather bulky a little above the centre, swim the steadiest in weather blowing against the stream, in rough eddies, and at the tails of mills.

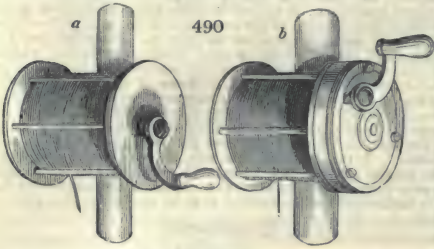
3010. *Reed floats* are also sometimes used by anglers in fine fishing for roach and dace in deep waters. They require to be carefully stopped in the joints, to give them the only merit they possess over other floats, that of lightness and buoyancy. The mode of manufacturing them is exactly the same as that of the swan's quill float, and they are invariably tip-capped; but they are, when of the best kind, expensive articles, as the reeds are usually not of English growth. Such are the principal floats employed in bottom-fishing; others are used of various makes, for every thing serves for a float which is buoyant enough to hold suspended by its means a line armed with a hook and bait: some of these buoys we shall notice hereafter, in treating of the irregular methods of catching fish.

3011. *Of shotting the float or line.* This necessary appendage to a float line is required to bring the buoyancy within such a level that not more than half an inch of the float may be seen above the water in fine fishing. In rapid eddies, and when live baits are used, the float must be leaded according to circumstances. *Shotting a float* is, in fact, shotting the line, although, strictly speaking, it is the float that governs the shot, and therefore ought to give name to the process. We have before had occasion to observe, that the fishing-tackle makers are too apt to employ a few large shot to their lines, instead of many small ones; but this practice is extremely injudicious and hurtful. The difference between two lines, one fitted up with small shot, as we would recommend, and another fitted up with large shot, as is but too common, will be at once apparent, and its consequences can be no less obvious. When we take such pains to conceal ourselves, to conceal our hooks, and to lessen our line or alter its colour, as well as to taper our float to all possible tenuity, and then present to the fish such leaden masses as are sometimes seen on floated lines, can we wonder that such shy subjects as carp, tench, roach, &c. should be rendered still more shy by such an exhibition of snares, and that so few are thereby thus taken ? It is our own custom to put a few very fine shot in the middle of the hook line, or about five inches from the hook, which will keep the bait down, and assist in steadying the swim. About nine inches from the hook we place another row of shot close together, and rather larger than the preceding ; and, if necessary, we add another row of still larger shot above these, at about four or five inches' distance. The shot used for this purpose require to be nearly split, which may be done with a chisel or knife ; but it is better to purchase them already split from the tackle makers. In fastening them on the line, make use of a pair of pliers, and place each shot as near the centre of the line as possible, taking care to close it evenly, to prevent the projecting portions from rippling the water or catching the weeds. It is a bad practice to bite the shot to fasten them ; the semi-diameters of the shot frequently slip aside, or are made ragged by the teeth ; and it not unfrequently happens that the line itself is bitten through. As a means of strengthening the float, but more particularly of preventing the line from slipping, where it is necessary to be extremely accurate as to depths, one, two, or three turns, with a half-hitch, are made around the top of the float by the line before the cap is put on.

3012. *The hook is usually added to the line by a loop* made in the gut to which it is attached, which is convenient where there is a chance of having to change the hook repeatedly; but when very fine fishing is practised, and when every thing must be as snug and fine as possible, it is best to attach the hook length to the line by a knot, or in the hands of the expert angler a suitable hook may be at once whipped, or at least tied on the end of the gut line, which is much the neatest and most efficient manner of operating.

Subsect. 6. *Reels, or Winches.*

3013. *The reel or winch* (*fig.* 490.). This is also an indispensable requisite to anglers on most occasions, perhaps we might say on every occasion; for although in very fine fishing for dace, roach, &c. it is often dispensed with, and is by some thought burthensome, yet the experience of every angler will inform him, that unless fishing in the New River at Islington, in a gentleman's gold and silver fishpond, or other quiet and harmless situations, he can never insure himself against hooking a fish of which he did not meditate the capture, and which without a reel he has no means of taking. As under such circumstances, the non-expectance of such a visiter would heighten the pleasure of his call, so he disappointment would be doubly mortifying if, instead of being a gainer, the angler found himself minus hook, line, and perhaps float. With the exceptions, therefore, above stated, and similarly interesting ones, we would recommend the prudent angler to be always armed with a reel and a running line; he will then spare himself the mortification which we have had occasion more than once to feel before we adopted the course we recommend.



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LINE REELS.

3014. *The mathematical principles* on which the reel and running line act may be easily developed, so as to show their importance as an auxiliary in the capture of fish, particularly of large and powerful ones. We will suppose a very heavy fish to have been well hooked; he immediately runs out a considerable quantity of line, instinctively to fly from his enemy, or to break the detaining cause; but happily, as his distance increases, the more he adds to the certainty of his capture; for the farther the restraining force is removed from him, the more is the power of that force augmented, and his exertions are paralysed by acting on the united elasticities of the line and rod, which, if both be firm, and the arm of the angler be sufficiently strong to raise his rod, thereby to transfer the resistance of the fish through the united line of elastic forces opposed to it, the prize is his own.

3015. *A reel is also often wanted to shorten more than to lengthen the line,* as in daping with living flies, or dropping a live or dead bait in confined situations, as in pike and trout fishing, but particularly the former. It is now some years since the various means of lengthening or of shortening the angling line among professed fishermen, settled into the use of the reel or winch, which at present generally occurs under two forms, the common or single reel, and the multiplying reel, with or without a stop to its rack wheel.

3016. *The single reel, plain pillar reel, or winch,* is now but little used by anglers in the south of Britain. Its form and use are sufficiently well known (*a, fig.* 490.). It is certainly much more slow in its operations than the multiplier; and when a fish returns to the hand suddenly, as is not uncommon, it is often of the utmost importance to regain the slackened line with the greatest dispatch, which the single reel cannot do, so it is further objectionable, for no fish beyond one of a pound weight can be a secure prize without being completely under the control of the line. But even with these disadvantages, the plain pillar reel is greatly preferred by many anglers in the North and other parts where heavy fish are taken; and very justly, for with all our southern attachment to the multiplying reel, it must be confessed, that when a salmon, or other very large fish, is on the line, this reel will be found to be totally inadequate to the task of moving it. The wheels, by the extreme pressure of their surfaces, catch and feel clogged simply by the friction. We have found a fish of only four or five pounds, when lively, strain and clog the action of the common sized multiplying reel. What then is to be expected from a salmon of twelve or fourteen pounds? No force applied can wind up the line in such case, but it may readily break or bend the works. The sole resource in such case is to draw the line up with one hand and wind it with the other; in doing which, a sudden slackening of the line may enable the fish, at one plunge, to disengage himself. Until, therefore, some improvement is made on the multiplying reel, many anglers will continue to use the pillar one; and when it is made sufficiently large to support a large pillar and a proper quantity of line, it may, when judiciously managed, act quick enough for all ordinary purposes, compensating, by its safety and the steadiness of its pull, for less speed in its action.

3017. *The multiplying reel or winch* (*b*, *fig.* 490.) possesses however, in many circumstances, great advantages over the single pillar winch, particularly for moderate resistances. An important one is the increased velocity with which it veers out or takes in line: but to prevent disappointment in our expectations in this particular, it must be remembered that the quantity of line let out or taken in is by no means uniform throughout the operation. On the contrary, when the barrel-reel is charged with a considerable volume of line, its powers are relatively augmented or diminished very considerably; that is, it winds up or lets out a given quantity in much less time when full than when nearly empty, for the proportions increase or diminish as the barrel becomes charged with or as it discharges the line, it being clear that a revolution round the bare barrel of the axis can relieve or discharge but little line in proportion to one round of the same when three-fourths are filled with line. Many improvements have been suggested by ingenious anglers, and some attempts have been made by artizans; but the multiplying reel in common use has still the disadvantage of a want of power when any resistance is offered beyond that of a moderate-sized fish, as may be easily brought to the proof by attaching a piece of wood of only two or three pounds' weight to the line, and allowing it to float twenty or thirty yards down a tolerably brisk stream.

3018. *Of the two varieties of multiplying reels*, one with the crank or winch in the centre of the box, and the other where it is placed at the side; the former is certainly the best, not only because the handle is much more advantageously situated, but because it more readily admits of an improvemont in power and expedition by a larger cog-wheel. We suppose it must be something of this kind to which Mr. Bainbridge alludes, when he says (*Fly-fisher's Guide*, p. 41. 2d edit.), he has "had a reel constructed on a new principle, which succeeds much better than multiplying reels upon the old plan." By means of a projecting box he informs us, that he has been enabled to introduce a larger cog-wheel, and, consequently, to obtain an increase of power as well as of velocity.

3019. *The multiplying reel* is made either with or without a stop, or, as it is sometimes called, a *lock* (*b*, *fig.* 490.), by means of which its action either way can be suspended; and if we were able to keep this always under our own control, it might prove a useful addition; but it unfortunately sometimes happens that the hand, the coat, or line, or the mere putting the rod down, or resting it against something, may lock it unobserved by oneself: when thus locked, if a large fish should seize the bait, and run out with it at once to the length of the line, the sudden check produced by the stop will probably snap it short, and then the fish is gone. In bottom-fishing, however, a stop is rather more useful, and less objectionable than in fly-fishing, as the line being usually kept at one determinate length, if the leading be heavy, it sometimes happens, unless the reel be stopped or locked, that the weight draws out more line than is proper. Recently, the multiplying reel has been very little used, on account of the fear there is that its works may get deranged if severely tested. The reels or winches now in use are click or check ones. Their play is not loose, and they hold the line at its proper tightness as a fish is darting away. They are made in great perfection in London, and the best will not get out of order for a whole season.

3020. *The modes of fixing the reel to the rod are various.* In some cases it is permanently fixed by means of screws; but this tends to weaken the rod, and deprive us of the use of the reel for any other rod. It is also unnecessary, since, by means of the plate reel, it can be made as tight and permanent as though it were screwed to the rod. The plate of this reel is made somewhat longitudinally circular, by which form it adapts itself to the rotundity of the rod, and when not fixed into a groove is either fastened to the rods by tapes running through eye-let holes made in the plate, or else by waxed twine, which is preferable from the tendency of the reel when attached by tapes to slide towards the lessened diameter of the joint. In this mode of attaching the plate reel, there is an advantage over the *groove fastenings*, which is, that the same reel may be used on any sized rod, and on any part, or indeed on any joint of a rod which is convenient, as every angler is aware that the reel requires to be differently placed (at least it is advantageous so to place it) on the same rod, according as one kind of angling or another is practised. In trolling, or in bottom-fishing, the reel should be attached to the rod about ten inches from the butt end: in fly-fishing, this distance would tend to make the action of the rod untrue. It is therefore placed generally about five or six inches from the butt end of the fly rod. Some sportsmen, however, place their reel above the part of the rod they handle, even in fly-fishing. Colonel Hawker recommends this, and also that the reel, instead of being under the rod, should be placed above it. We are forced to differ from the colonel, though his authority carries great weight with it. We consider the check that the hand has on the line to be very advantageous, provided it be lightly held; nor is there, in such case, the smallest danger of breaking either rod or line by striking the fish, even in trolling for jack or minnow spinning, for in either of these fishings, of necessity the stroke must be sharp.

3021. *The plated reel* is fastened to the rod by means of a groove, which receives its plate under a fixed shoulder or ring, and when closely adapted to the groove is fixed and made steady by a movable shoulder or ring, which slips over and secures it. When the plate-groove and rings fit accurately, it is not possible to contrive any thing more convenient. We have one of these plated reels which has been in use at very many of the rivers of note in the united kingdom. It has remained attached to one rod for fifteen years, and is yet firm and good. In place of brass collars for holding fast the reel plate, two leathern ones are sometimes substituted, which being first wetted are, as they dry, found to adhere firmly.

3022. *Reels are frequently likewise fastened to rods by means of a brass hoop and screw*, which hoop being lined with leather, prevents the rod from pressure and the reel from slipping. The hoop is usually made smaller than the butt of almost any rod, purposely to leave room for the screw to act in pressing the hoop tight around the butt. This hoop and screw fastening has likewise the advantage of fitting any rod, and almost any part of a rod (at least it may be attached to the joint nearest the butt) enabling the angler in confined situations to abandon the butt length and fish with the remainder. The large flat wheel of eight or ten, or even more, inches in diameter, used in France, and indeed in Wales, Ireland, and on some Scotch lakes, we shall not stop to illustrate.

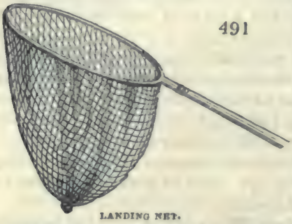
3023. *To place the reel on the rod*, let the groove (if one be made) be in a line with the rings; or if it be otherwise fastened, it must obviously be placed on an exact line with the rings, and under the hand, with the handle of the reel pointing to the right or left, as may suit the hand of the winder. When the reel is attached near the butt, the last ring should be placed nearly two feet from it; in which case the line will work freely, provided it be carried over the bar of the reel which is nearest to the ring; but if this first ring by any chance should be placed nearer to the reel than this, the line will work more freely by carrying it through the ring from the under part of the reel. This is a matter worthy of more attention than may at first appear, or the friction of the bars may soon fray the best line, as well as impede its action.

3024. *Various substitutes have been used for reels.* The most simple is that of two tenter-hooks, pointing outwards, placed on the butt of the rod, the lowest hook two inches from the place of holding the rod, and the second at the distance of eight, ten, or twelve inches above. This homely method may answer for trolling, and for dipping or daping it may make a moderate substitute; but in fly-fishing it is found but ill calculated to afford the angler assistance, either in *giving out* or *taking in* his line, particularly in giving out; and for the two handed rod it is totally unfitted and troublesome, as well as dangerous.

3025. *A large flat wheel reel* is in common use in some parts of France, and occasionally also in England. Those used in France are cumberous and unsightly in the extreme, being merely a large turned wooden wheel, hollowed in the middle to lighten it: sometimes it is even formed of wicker-work. The wheel is fixed to the butt by a pivot, and is deeply grooved around its circumference like a pulley, for the reception of the line. Two tenters, pointing towards each other, are driven into the butt just beyond the edges of the wheel to keep it flat. The wheel may be of any moderate size, but rarely exceeds six inches in diameter, and is turned by means of a neat peg screwed into it at about two thirds' distance from the pivot to the edge. It is obvious that a wheel of six inches' diameter will, at one turn, give or take in a foot and a half of line, which is more than any of the brass reels of our country, even when the barrel is nearly full, can do in three turns.

SUBSECT. 7. *The Landing Net, Gaff, Clearing Ring, Drag-hook, Disgorger, Minnow-net, Minnow-kettle, Fish-pannier, Fishing Pocket-book, &c.*

3026. *The landing net* is a very necessary implement to the fisher, and is manufactured very differently in point of size and materials. The landing net for the usual fishing should be, when properly hung, two feet in depth, and not more than one in diameter. These dimensions for ordinary purposes are not too large, but for some fishing might be thought diminutive; but as there are other means of securing large fish, a moderate sized landing net is sufficient. Let the meshes be small enough to detain a large minnow. The net in our figure is not proportionably so deep as its width requires. We also append a jointed steel frame, which makes the net portable, inasmuch as it folds up, and may be carried in the pocket. We have for some years used a landing-net of our own making, and if self love has not blinded us to its defects, it is at once simple and efficient. It consists of an iron hoop, from four to five or six feet long, which, when lapped over one foot of its length and riveted, serves, by being double, to strengthen the part opposed to its attachment to its shaft. The centre of this being perforated through the over-lappings, is fastened to the shaft (a stout hazel about five feet long) the larger end of which being ferruled and carefully bored, receives it by means of a long nail with a broad head, or a spike purposely made. Previous to fitting up the hoop, it was first drilled with holes towards its lower edge, about three quarters of an inch apart, by which the heading of the net is lashed with strong waxed cord within the inner side of the rim, after which the iron and the lashing were well painted over, which has preserved it well. Our own is rather oval, being fifteen inches one way and twelve the other; the shorter diameter being that nearest the hand, the strain on it is thus diminished. This net would be improved were there a shoulder to hang it by made within the hoop, through which means friction would be still more certainly avoided. The advantages of such a landing net are, that it is light, strong, and not likely to be out of repair. It also derives another convenience from its hoop edge, which makes it a most useful machine for dredging caddies or minute shells, &c. from the bottom of the water, a capability which first suggested our manner of making it. The handle is fitted up with a ferrule and female screw, into which is fixed a common spike to fasten into the ground, or assist in wading. In our tackle bag we have one or two conveniences which we can at pleasure adapt to this by unscrewing the spike, such as that of the single or double gaff-hook, or the telescope handle noticed below, either of which is a most useful article to disengage a line, detach weeds, or insert into the gills of a fish, when the landing net is not at hand, or cannot be so conveniently used. We cannot too strongly enforce on the angler the imperative necessity there is that he cultivate a convertibility of talent, both mental and manual. In angling for salmon, the landing-net must be very large, and its hoop and handle very strong. The diameter of the hoop should be from sixteen to eighteen inches, and the net should be deep in proportion.



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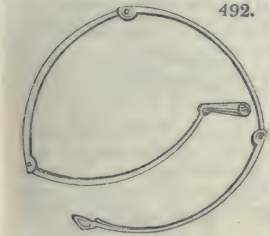
LANDING NET.

A telescope landing net is used by anglers who travel considerable distances, in carriages or otherwise, for their sport, or by such as delight to have every thing snug and packed in a small compass — contrivances in which the London anglers excel all the world. A London angler's case, by its excellent contrivance, will hold in a remarkably small space a vast variety of tackle, each article being made to prove as little burthensome as possible; and thus a landing net has been constructed, the parts of which can fold or slide into the least possible space. The net part hangs on a hoop which was formerly made of iron, but is now manufactured of steel to lessen its bulk, and increase its strength. This hoop is jointed in three parts (*fig.* 492.), by which means it can be folded, so as to be carried conveniently even in the pocket or in a bag, while a telescopic handle being *swallowed* one part within the other, is rendered equally portable. This is effected by the contrivance of two or three joints of bamboo, of such comparative diameter as to fit one within the other, and when extended, to form a handle of five or six feet in length. The great defect in the telescope is its want of strength; a heavy fish must inevitably fracture the bamboo joints; it may be dragged out, but lifted it cannot be.

492.



JOINTED NET-IRON.

3027. *The jointed net-iron* (*fig.* 492.), where a servant is employed, may be conveniently adapted to the two first joints of a spare rod, with which it is presumed every prudent sportsman would be armed, when he has a domestic to attend him. For such a purpose he will find the *general rod* (*fig.* 476.), to be a very proper one, for should any accident happen to that with which he is occupied, he will in this have a substitute, let the fishing be what it may. The jointed net-iron being in the servant's pocket, and having the meshes of the net passed over it, is at once ready to be attached to a handle, and which can be readily furnished from the lower joints of the general rod in his hand. A small ferruled joint of six inches' length may also be kept with the rest of the tackle, into which the screw of the net ring being fastened, this joint may be inserted into the two lower joints of the general rod as a staff, by which means a most excellent landing net of great power and extent will be at hand. By this also live-bait can be taken, as minnow, sticklebacks, &c. provided the net-meshes are sufficiently small, and every net should be purposely made so to answer this double intention. Various other articles may likewise be adapted, among which the gaff-hook for extra sized fish is a necessary one, and we here strongly recommend the *double gaff-hook* (*fig.* 493.), which at once serves the purpose of a landing hook and an instrument to cut away weeds or other impediments, as boughs around an entangled line, &c. &c. These and other useful implements may be adapted to the general rod, by which the prudent sportsman will make every article subservient to numerous purposes, thus increasing his resources, and yet diminishing his wants. To be independent is the aim of all the world, and he is the most independent who can do the most with the least means.

3028. *Under this view* we suggest to the angler, who is unaccompanied by either servant or companion, the means of extending his conveniences and resources. Either by his own ingenuity, or with the assistance of a rod maker, he may very readily unite in one article a second fishing rod — a gaff rod — a landing net — minnow-net — bough-cutter — wading staff — and ample means of defence against man and beast. All these may be combined most effectively and conveniently in the form of a walking-stick rod, and but a little longer and stronger than those usually made. With a steel folding net in his pocket, and his double gaff-hook, both so made as to be attached to the smaller extremity of the rod and his spike applied to the larger, he is enabled to supply all the usefulness of these several articles.

3029. *Some directions with regard to the use of the landing-net* may be necessary to the tyro, who, when he has hooked any fish beyond one of the smallest size, should never attempt to lift it out of the water by means of the line, still less by means of the rod and line together; for although neither may break, both may be strained, or the hook may break, or the hold on the fish give way. Every one of these accidents we have seen occur through the want of a landing-net. In fly-fishing, where the line is long and there is not much space to step backward, or the reel is clogged, it is necessary sometimes to lay hold of the line with one hand; but this should be done with great caution, and then only after the fish is well-nigh spent, or one struggle may carry away line, hook, and fish. In all other cases avoid touching the line if possible; but having sufficiently played the fish, whether taken by bottom or by fly-fishing, bring it within reach of the landing-net, and then carefully conduct or slide the net obliquely under the foreparts of its body, which, if the fish be completely exhausted, will fall into it; but if it has still sufficient vigour, it will be prudent rather to slide him over the net, than the net under him. It must have occurred to every angler to have supposed a trout or salmon to be completely spent, which, the moment it has been touched by the net, or has even caught sight of the fisher, has sprung off with most annoying violence. Against such an accident it is prudent to be ever prepared by keeping the rod in an upright position, acting on a tightened line, but yet so disposed that it can run at liberty if required. When the head and shoulders of the fish are once fairly within the net, a slight turn of it will take in the whole body, and the net being then kept horizontally, will insure its safety; for with the head downwards, not any efforts it can make will disengage it from the net: but if it be received tail foremost, as is sometimes done in deep waters, from overhanging banks, &c., beware of its plunges.

3030. *Situations will occur* where the landing-net cannot be brought in aid to land a fish; for instance, when it is very large, as sometimes occurs in salmon or pike fishing, where no net in common use will contain the captive. Such a situation will show the indispensable necessity of being always furnished with a *hook* or *gaff*. But there are other occasions where difficulties of a new kind may present themselves; for instance, in very wide rivers, having a rapid central current, but a wide course of shallows at the sides; here both net and hook often fail, but particularly the former. In the rapid stream the net cannot stem the force of the water in the single hand of the angler, where in fact both hands will be fully employed in keeping the fish up, acted on as it then is by the impetus of a strong current. In such cases it is almost equally impossible to apply either hook or gaff to the fish from the want of an assistant; and be it understood, that we are always supposing the angler to be without one.

3031. *To land a fish without landing net, hook, or gaff*, requires much caution and good management, particularly if it be a large one. It is first necessary completely to exhaust the fish: it must, in the angler's language (and it is critically just), be completely drowned before any thing of this kind can be prudently attempted, as a sudden shoot when the line is at all loosened will inevitably disengage the fish. When however it is perfectly exhausted, both by its own efforts and by strangulation, it may be drawn on its side; and if the situation will allow, it may, if the angler step backwards, be gently brought from out of the water. In doing this, the necessity of its being completely exhausted will be apparent from our knowledge that otherwise, while we are thus drawing it, it may make such violent flaps with its tail against the line as to endanger it. If the line slackens, and any strength be left, it often succeeds in its aim of striking the line, and breaking either that or its hold.

3032. *In these attempts to land a fish*, it should, if possible, be conducted to a part which shelves the least, and which is altogether free from weeds; or choice may be made of some small inlet too shallow to float the fish. When it is not possible to step backwards to effect this by means of the rod and line, or where the bank slopes too much to draw the fish out conveniently, by throwing the rod back the line may be gently laid hold of, when, if the fish be sufficiently exhausted, by raising its head up enough to keep the hook from hanging to weeds or other matters, the angler may then bring it so near as either to insert a hook into its gills, or to plunge it into its sides. If the hook or gaff be wanting, fix the rod in the ground by means of the spike, and then grasp the fish firmly, if very large, with a finger and thumb pressed into the eyes; or if of a moderate size only, by griping it immediately behind the gills; or (watching the opportunity) by thrusting one of the fingers in the gill-cover as it opens.

3033. *An ingenious substitute for a landing net* is mentioned by Captain Williamson:—"I have," he says, "sometimes got a boy to aid me with his hat; but the best mode I ever practised was that of passing a wire snare, such as is used for jack and large eels, over my line, and lowering it down until I could get it over the fish's head, when drawing the cord tight I have thus lifted fish of eight and ten pounds' weight safely to the top of the bank from places where no landing net could have been used."

3034. *The gaff* is an instrument used in landing large fish, whose dimensions are not such as to prevent their being received within the hoop-net. The gaff-hook attached to its staff being somewhat inconvenient, various ways for carrying it have been devised. It is sometimes slung across the shoulders, attached to a short staff: it is now and then fixed to a telescope rod, which, sliding into less than two feet dimensions, can be carried in a side pocket. Here the same objections do not exist as those to the telescope landing net from its want of strength, for the gaff is employed more rarely to *weigh* a heavy fish out of the water than to draw it out. But in the use of the landing net we find on lifting a heavy fish from the water that it operates, on the principle of steelyards, as a monstrous weight to the staff of the net, in proportion to its length and the size of the fish. The time when such a gaff, *i. e.* the ready mounted one, proves particularly convenient, is in pike or salmon fishing, and when the angler is alone, in which cases both hands are required to wield the rod, whether in trolling the minnow or throwing the fly, and when a spiked pole or other rod would prove an incumbrance. In all other cases the fly-fisher's gaff should be fixed on a staff of ash, yew, or hazel: fir is hardly to be depended on if much stress be laid on it, as in wading through rapid waters, where we have found the gaff staff eminently useful as a support. The length of staff may be from four to six feet: its lower end requires to be shod with a spiked ferrule, and its upper with one having a female screw socket, to receive the screw of the gaff-hook, which should be very well tempered, and may either be double or single. The gaff-hook to be secure should be barbed; it is however sometimes used plain and unbarbed; but this cannot be by any means so certain of holding the fish after it has been struck, and we have seen a salmon plunge off an unbarbed gaff for want of such a hold.

3035. *The double gaff-hook* is that we use, and which we would recommend (*fig.* 493.). It is an improvement on the old single instrument: it has a second portion fitted up with a cutting edge, by which weeds can be severed, and boughs and other obstructions removed. As this double hook folds up by its hinges, it is peculiarly convenient and portable, and is not required to be taken from off the staff to prevent accidents, as was formerly the case. If the unhinged gaff is used, it ought always to be guarded with a leathern cap.

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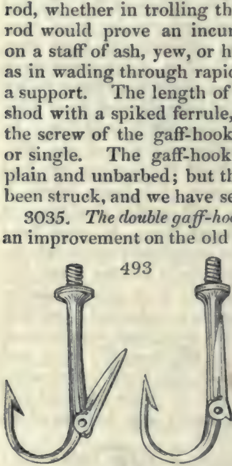

GAFF-HOOK.

3036. *To use the gaff:* first expend the strength of the fish to the utmost, as already directed, and when brought within reach, pass the gaff under the fish with the point directed downwards, which having been done, turn up the hook, and with a tolerable jerk pass it into the body. The ingenious author of *Salmonia* says, it should be pierced near the tail; but this is not always optional. We have rather preferred gaffing a tolerable sized salmon towards the shoulders, having, as we found, more means of combating with his resistance by so doing. Circumstances however occur, as before stated, which render this by no means a matter of choice, and the angler may think himself fortunate if he can gaff his fish effectually in any part. After a salmon has been struck by the hook, it often happens that his torpid feelings are roused, and his plunges become desperate. This event should be anticipated, and regard had to the safety of the rod and line, particularly of the former, which if it be at all endangered, the angler had better resign his hold on the salmon; and by letting him again launch into the deep with the gaff in him, recommence playing him, which will, in a few minutes, bring him again within reach of the hand perfectly helpless and unresisting. In some cases a salmon is played until he is irrecoverably spent, and the angler will avoid plunging the hook into the flesh, but will first attempt to land his fish by passing it into the opening of the gills.

3037. *Clearing rings* are great assistants to the angler, and are made of various fashions and materials. The clearing ring is so useful an implement, that the bottom angler, particularly, cannot be considered as properly equipped without it. The most simple is merely a stout lead or iron ring, of about seven or eight ounces in weight, and two inches and a half in diameter; and to this is attached a small cord, hard-twisted packthread, or stout whipcord of about ten yards in length: the ring ought not to be uniform, but thicker at the segmental portion opposed to the part to which the cord is tied, the construction being such, that the heaviest part may most press on the opposing object. An improved clearing ring is now made with a well-closed joint in its thickest segmental portion (*a*, *fig.* 494.). The advantage of this make is, that the ring may thereby be put on the rod beyond the reel, which the common ring cannot be, unless made large enough to pass over it, in which case it is much too clumsy. When the improved ring is placed on the rod, the movable thumb-winder (*b*) holds a line of ten or twenty yards long fastened at *c* to a neck protruding from the ring to a drilled hole in which is fastened a line of about ten yards of well twisted leycord, or stout whipcord, wound on a thumb-winder or reel of hard wood. The method of using a clearing ring (we will say the improved, for it is very seldom that any other is now used): — To use the jointed clearing ring, open it, and having put it around the rod including the line, incline the rod, and by means of the cord lower the clearing ring easily down the rod on to the line, passing it carefully along that until it reaches whatever may have entangled the hook. Weeds are among the most common obstructions: sometimes, however, the hook becomes stuck into piles, stumps, or may be jammed between stones, &c. &c. In all cases after having passed the ring down the line, when it reaches the hook, straighten the line moderately tight, which will direct the ring so as to fall immediately upon the hook, and this alone will often release it from whatever it has stuck into. If this should not be the case, endeavour to get the ring over and below the hook, then gently draw the ring cord backwards and forwards, keeping the line at right angles with the line of the ring, by which the power will be exerted upon the embarrassed hook and not on the line. If it be found that the hook cannot be disengaged by this method, still keep the line tight, and forcibly pull the cord of the clearing ring until the line gives way, which act, if dexterously done, will commonly take effect near the hook, so as to lose little more than the hook, and will not at all injure the remainder of the line.

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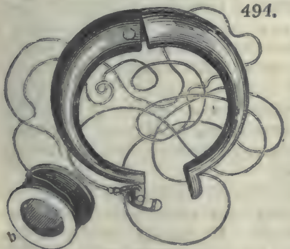

CLEARING RING.

3038. *The drag-hook* is another implement for clearing away obstructions in angling. As the clearing ring is more necessary to the bottom angler, so the drag is more frequently employed by the fly-fisher, and in weedy rivers it is pre-eminently useful. It consists of three stout iron hooks (*fig.* 495.) placed back to back. In using it some dexterity is required to throw the implement just over the resisting matters that hold fast the hook and line, which nine times in ten are weeds. If the drag be cast too much beyond where the hook is stuck, it only drags a quantity of weeds towards the obstruction, and sometimes loosens a large mass of them, which it floats down the river carrying the hook or fly with it, or at least it thickens the water and disturbs the fish. On the other hand, if it be cast short, it makes much disturbance to no purpose. A little practice in throwing it will, however, enable the angler to succeed at one or at most two throws: to teach him to do which, we would recommend him to amuse himself occasionally in throwing it without other necessity than the practice. The *drag* is so very useful an implement to the fly-fisher of the South, that it bespeaks, as it were, disappointment and misfortune ever to stir out without one, from the weedy state of the southern rivers; and as the drag itself sometimes gets so fixed in stumps that it cannot be released, and its value will not tempt one to obtain it at the expense of a ducking, we always were ourselves provided with two, since

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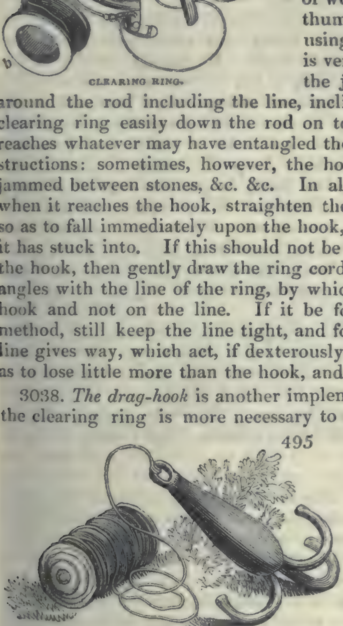
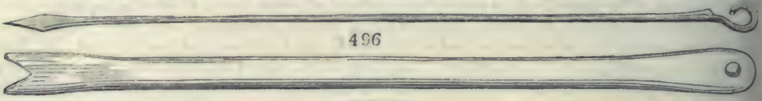


DRAG-HOOKS.

it might not be convenient to manufacture another on the day succeeding that on which one has been lost. Having ourselves suffered in this way, we offer this caution to others, and it may be found a useful one.

3039. *The disgorger* is likewise an instrument common to both bottom and fly-fishing. Whenever a greedy fish has well taken the bait, it is not without difficulty that the hook is released from the mouth. If it be attempted to be done by force, the hook commonly gives way, or the line snaps. It is unpleasant to cut open the mouth to introduce the fingers, but this must be done if there be no disgorger. Almost any thing will make this, a piece of split cane, a strip of hard wood, the handle of a horn or metal spoon, made somewhat forked at one end, may be applied to this purpose. Our own disgorger was, we conceive, an improvement on this, and we recommend it for trial to others. The common disgorger (*fig.* 496.) has only the forked end as an operative part to release the hook by its pressure. Ours was made of steel, with one end presenting the usual fork, and the other forming a circular cutting blade. No one accustomed to bottom fishing but must have met with many instances where a voracious fish, as a perch, has actually gorged a hook; in which case, unless the filthy and disgusting process of cutting open the fish be resorted to, it is difficult, from the smallness of the mouth and the nature of the membranous part entangled, to disengage the hook with the usual disgorger. In such a case hold the line tight with one hand, as though the common disgorger were in use; then introduce the circular cutting part of the improved one beyond the fixed hook, and when that is brought forward and raised by the line being tightened on it, direct the cutting part under the hook, which will probably give way immediately.



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DISGORGER.

3040. *The minnow-net* may in ordinary cases find a substitute in a full sized landing net with a small mesh, as we have recommended, which being held under water for a little time where minnows resort, will soon be covered with them. By raising the net at first very cautiously the minnows will rise with it, and when it has arrived near the surface a sudden pull will secure them. Minnows are not however always to be procured in this way, and in such cases the regular minnow-net must be used, which is usually a fine meshed silk one, of three or four feet in diameter, stretched on a circular or square frame of stout wire: this being attached by three or four cords, so as to keep the frame horizontal, to a pole of six or seven feet in length is used as before, but being larger, and capable of being carried deeper and farther out, it is much more effective. When minnows cannot be obtained by either of these methods, a very fine silk casting net will commonly supply them. We have however occasionally been foiled with this implement also, and as a last resource have been forced to angle for minnows, and have found that if the wind were not rough, or the weather cold, a sufficient number for any ordinary purpose might generally be procured with a fine hook and a small worm.

3041. *The minnow-kettle* is indispensable when live-bait, particularly minnows, are wanted lively and in plenty: larger fish may be kept in a drum-net. The usual minnow-kettle is either oval or square, and is commonly broader at the bottom than at the top (*fig.* 497.), which shape is not the best; for every perfect minnow-kettle should have a strainer fitted exactly to the inside of it, so as to slide up and down with ease, and yet not to jam any of the minnows between it and the kettle. The *strainer* should resemble that which is usual in the common cooking fish-kettle, and it should be let up or down by means of two ears like that, or by a small cord. When a bait is wanted do not, as many do, thrust your hand into the minnow-kettle to the injury and discomfiture of your baits, but put in a small bowl-net, and take out such as you want. By means of your strainer all the minnows can be brought at once to view, and such as best suit the purpose may be selected, instead of wetting the hands, heating the water, worrying the fish, rubbing off their scales, &c. &c. and perhaps tormenting one's self by catching all but the right. To avoid this some prudent anglers, who use the *common* live-bait kettle, take out the fish with a small gauze net having a handle, the whole not unlike a soup-ladle. It much improves the kettle that it be rimmed, and that the perforated lid be within this rim, which should be an inch and a half deep, to prevent the water from escaping or slopping untidily about when moved: even dirty work may be rendered doubly dirty by some hands. In hot weather sink the minnow-

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MINNOW-KETTLE.

kettle in the water fished in, to keep the fish cool and to renovate them. A cord should be appended to the handle, and a fastening to the lid; and when the minnow-kettle is not kept under water, the water within should be changed every hour at least (every half hour is better) if moderately filled with minnows.

3042. *The hoop-net* (*fig.* 498.) is an angling appendage intended to keep the fish taken alive, either that they may be moved from one place to another, or otherwise that the necessity of destroying them may be obviated until they are wanted, which destruction should always be deferred as long as possible where gastronomy is concerned, particularly if the fish have not been or are not to be crimped. The hoop-net may be of any dimensions, as from ten inches to a foot and a half. It is usually formed of three circular pieces of cane, one of which forms the upper and the other the lower ends, while the third sustains and keeps open the centre portion. A fourth and smaller circle forms the mouth of the net, which draws up and closes by means of its cord. This cord, of some yards' length, is attached to it, and by its means is first lowered in the water, and then secured either by fastening it to a bough or to a spike stuck into the ground. It is to be noticed in the use of the drum-net, that when a strong current is flowing it will be prudent either to put a stone within the net, or to have the lower part of it loaded with lead. The reason of this caution is, that in the current it sometimes happens that the net will become closed by the buoyancy of the cane within the pieces approximating, and thus drown the fish; but that is avoided by such a weight as will keep the net extended in the water.

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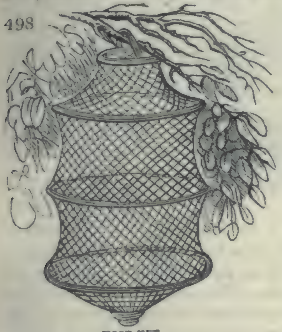

HOOP-NET.

3043. *The fishing basket, pannier, or creel* of the bonnie Scot (*fig.* 499.), should be made of wicker-work, with two openings for a leathern strap to pass through, which strap should encircle one shoulder and be buckled, so that it may be let down or taken up as occasion may suit. During the action of fishing, the basket may hang easy, and will thus encumber the arms less; but on the return home, if well laden, it is most conveniently carried when drawn up tight under the arm. There are, however, great varieties of fishing panniers made to suit the varied fishings. The side of the creel next the body should be somewhat indented, to correspond with the shape; and we also recommend that it be wider, particularly towards the bottom, than these baskets are usually made, and the thinner its bulk the more easily will the arm pass over it. Some baskets are made of sufficient width to carry a fish of four or five pounds at full length, as seen in the cut, but which few of the neat baskets bought at the tackle shops will do. It is better therefore to have one purposely made. Much, however, will depend on the country fished in, the fish angled for, and other circumstances. An angler going without an assistant to a plentiful water at some distance from home, would naturally provide himself with a full sized basket; and if he ran a chance of catching very large fish, he would take care that it should be wide enough to *lay them in* handsomely and without doubling. To lessen the incumbrance of a basket, we on some occasions altogether dispensed with the use of a pannier, substituting in its stead a fishpocket (in our jacket) of large dimensions, which was lined with a movable pocket of oilskin. It was however no improvement on the slung basket; for, independent of the weight, which, being removed farther from the centre of motion, became more burdensome, we found that when a tolerable quantity of fish had been taken, it was impossible to keep the pocket sweet and free from smell. We have, however, another mode of avoiding the carriage of fish, which we hope may not altogether be lost on some humane brothers of the craft: we occupied for some years a fishing station in Hertfordshire; and as we followed the sport with avidity, and fish were plentiful, particularly coarse fish, we frequently filled our basket twice and sometimes three times a day. To carry home fish thus often was toilsome; it was worse, it was disgusting; we therefore adopted a mode of relieving ourselves, which we would recommend to other anglers: we dropped these fish at the cottagers' houses in our road, taking them in *succession*, excepting that when they were thankfully received among a larger crew than ordinary of chubby-faced children, we were apt to call *twice* at such doors for *once* at those where we suspected our offering was not really made use of for food. By these means the angler will avoid the toil of carrying home what he will seldom consume. He will likewise bring the practice of the art into repute, and at the same time blunt the ill-will and envy of those around him.

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FISHING BASKET.

Subsect. 8. *Angling Pocket-books.*

3044. *Of angling pocket-books* there are many varieties, made both by the tackle makers and by gentlemen who manufacture their own articles of this kind. Unless the taste be very capricious, or the wants of the angler be very peculiar, it is hardly possible that he will be unable to suit himself among the almost endless varieties of these books in the fishing-tackle shops; and as they are got up with great neatness and with a due regard to portability, we would recommend him to furnish himself from these sources. We would also advise, if his fishings be at all diversified or extended, that he have books for the several varieties of fishing, as one for *bottom angling*, a second for *trolling* and *minnow spinning*, a third for *fly-fishing*, and a fourth for *fly making*: but from what follows it will be found that, to the professed angler, we recommend some modifications of this plan. This division may be quite proper for the use of such as by local residence are well acquainted with the waters which they perhaps daily fish. To them it might be burdensome to carry leaden trolling tackle, when probably a pike is not in existence in the vicinity of their anglings; and it would appear to be equally troublesome to set out with lines and floats when one of the true rapid trout rivers of the North was to be the scene of action for the day. Cases do occur, however, in which some articles beyond those immediately appropriate to these several kinds of angling become necessary, and which as we proceed we shall notice and provide for.

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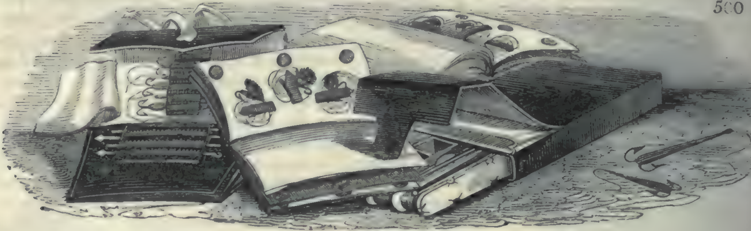


ANGLING POCKET-BOOK.

3045. *The bottom angling pocket-book* has one full square pocket to contain, first, the angler's reel of lines, the number of the divisions in which are optional, but if it present four for the reception of lines it will be amply sufficient, as with tip-capped fine floats each space will hold two lines, one on each side of the division. Between these is a kind of well, subdivided into minute compartments, which contain the plumbing lead, split shots, cap-tips, wax, India Rubber, &c. all of which are inclosed by a sliding cover fitting exactly to exclude the wet. In the pockets are contained spare lines, gut lengths, hooks in oilskin, waxed silk of different colours, &c. &c. The wrapping cover, which incloses all, is made to hold scissors, knife, pliers, disgorger, &c. This may be considered as a simple bottom angling pocket-book, and when there is no chance of interruption by jack or eels, it is all that can be wanted. To meet which contingencies, if the angler wishes to avoid the trouble of his trolling book, he may, without much disturbance to the economy of the other, have inserted in a corner of it a gorge-hook and baiting needle, to make an attack on an intrusive jack, whose interruption he may suspect, if in the midst of his bottom fishing he finds the fish suddenly leave off biting.

3046. *The troller's pocket-book* presents two faces, one with divisions for gorge-hooks; hooks single, double, and treble, for live-bait fishing; spring and dead snap hooks; bead hooks, leadings, gimps, &c. &c. The other and lesser face is made to hold knife, scissors, pliers, with disgorger and gudgeon and minnow baiting needles. Under this face will be found two pockets, one furnished with minnow spinning tackle of every description, separately packed in vellum folds. The other pocket will hold spare gimp, a strong foot length of gut or weed for finer trolling or minnow spinning. It may also be made to hold the artificial bait, called the devil, for trout trolling, with various other matters, according as it may be intended to unite the properties of a trolling and minnow spinning book, or as it may be intended solely for one of these uses.

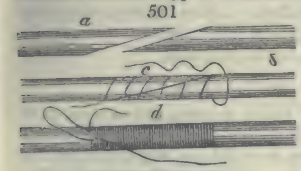
3047. *The fly-fisher's pocket-books* (for two are necessary to form a perfect equipment) are to hold, one the flies, and the other the materials for making them. In no case is it prudent to mix these matters. The articles of which the flies are made will bear any degree of pressure: the flies themselves should not be pressed at all.

3048. *The fly-book* is like any other book, with a certain number of leaves — we will suppose eight, not of paper, but vellum. Four alternate leaves are fitted up with cork at the corners and centre of the margin, so as to prevent pressure to the flies, which are looped up by their gut lengths, and placed underneath the straps, of which there are three to each leaf: both sides of the corked leaves may hold flies. The book has a case which has two or more pockets, in one of which one or more foot lengths of gut should be kept, with waxed silk, and any other requisite matters.

3049. *The fly-dressing book*, to contain the materials, is fitted up with four large pockets of vellum in the covers (*fig.* 500.). It is also furnished with leaves of double vellum presenting appropriate openings, in each side of which vellum cases (differently sized and variously shaped, as long, square, &c.) slip in securely. In the larger and longer of these cases, wings of various kinds may be kept, and the smaller within the others; picked feathers, hackles, furs, and dubbings, all marked, and thus kept distinct. Of the two large remaining pockets, one may be appropriated to scissars, disgorger knife, waxed silks, &c. &c. In the other a spare line and spare gut; one or two foot lengths also, one of which may be fitted up for salmon, as in trout fishing a salmon will unexpectedly make his appearance, and it is then prudent to be prepared for him. On such an occasion the advantage of having the *material* at hand, and of being capable to use it, will be obvious; for, unless it be a regular salmon river, it is ten to one if the trout angler will have a salmon fly with him, but with his dressing matters before him, he can sit down, and in a few minutes be able to show a tempting fly, and challenge his foe to mortal strife.

Sect. III. *General Directions relative to the Repair and Preservation of Fishing-tackle.*

3050. *The various implements that have been described occasionally want repair;* and as such want may occur when no professional assistance is at hand, it is an additional argument in favour of that mechanical tact at which we have before hinted, as being convenient and necessary for the occasions of the angler. One of the most serious accidents which can happen with regard to the tackle is the breaking of the rod.



MENDING BROKEN ROD.

3051. *To repair a broken fishing rod* (*fig.* 501.). If it be broken actually through, and the accident should happen when near home or within the reach of a carpenter's assistance, a true splicing surface should be made, by an oblique fine sawing directly through the two portions (*a b*), when one being placed on the other, will necessarily form a perfect application of surfaces, a true joint, and a lasting repair of the rod (*fig.* 501.). If the fracture be itself oblique, the surfaces should be planed as true as possible, by fixing both pieces firmly parallel, and then drawing them over the plane together. The wrappings being ready, let the surfaces be well glued together as at *c, d,* and if possible with the waterproof glue. When these conveniences are not at hand, slope the broken ends with a knife, so as to fit them as perfectly as can be done, and in the true line of the rod, over which rub some shoemaker's wax. This being done, with fine well waxed twine, or strong thread, or silk (cobler's waxed ends are excellent), begin the binding of the parts directly below the utmost limit of the fracture, wrapping at first a few turns only of thin twine, as at *c, d.* Bring the strands together underneath the hands, each turn regularly, avoiding to cross or put one over the other. Commence anew to bind the pieces very firmly together, which being done, continue the binding a little above the broken part, omitting to tighten about three or four of the last turns for the purpose of fastening off with the hidden knot. Tied thus it is said to be done with the hidden or inverted knot, which, as it is important to the angler, we repeat the method once more: — The three or four last wrappings, instead of being drawn *close* round the rod, should be left loose, and should include in the laps the forefinger of the left hand (see *fig.* 488. p. 966.). Take care to preserve the bows or wrappings distinct, pass the end of the silk or twine between the finger and the rod, and then carefully remove the finger. It is now that the principal dexterity is to be shown in the use of the right hand just relieved, which (while the left grasps the rod near to the whipping) should be employed in carefully tightening the first of these loose turns, which will draw close the last of the whipped turns made before the finger was used. Do the same by the second loose turn, which will tighten the first of those turns which included the finger; repeat this on the third, placing the threads exactly close to each other and as tight as possible. It now only remains to draw up closely the whole of the spare end, which thus comes out from under the three or four tightened layers of the whipping, and to cut it close off; by which operation all will be made to be smooth and firm, without any appearance of knot. The advantage of this hidden, inverted, or invisible tie is, that it is at once neat and secure, and that it spares the rising, the wear, and the consequent insecurity of the common knot.

3052. *When the larger joints of a rod,* particularly the butt-piece, are broken, or indeed whenever a whipping is to take place on a glued joint not yet dry, it is prudent to make a previous binding with lappings of some fine but very strong matter, as hard twisted silk, or apothecary's twine. These lappings may be from half to a quarter of an inch apart, they should be carried obliquely from one fractured extremity to the other, and returning again, they should cross or chequer the first lapping. The whole whipping may be afterwards rubbed down with a piece of hard smooth wood, to make a plain surface for the finishing whipping already explained. For the smaller joints this had better be avoided as less neat.

3053. *When the top joint of the rod* is broken, it will be found a good plan to strengthen the fractured parts by applying round them a quill, either passed down over the lap, or if this be not practicable split the quill, and when softened in warm water insert it around the fracture, first applying over it the waterproof glue, or otherwise some stiff wax. In this case it is hardly necessary to caution the operator against placing the opening or slit part of the quill to either the back or front of the rod in the course of its flexions: it should, on the contrary, be applied to one side. When the quill is applied, whip it round very firmly with the finest silk, and having carried it as far as is necessary, finish with the invisible knot, making this difference only, that to keep up the turns, instead of the left hand forefinger insert a disgorger, quill, tobacco-pipe, or other such matter under them. Or, for greater ease, the end may be passed under the bows or laps by means of a bodkin threaded as in sewing, after which it may be drawn to a proper degree of tightness. It will add greatly to the durability of the whipping, as well as its neatness, to rub it down afterwards with a slight pressure by means of any thing in itself smooth, as the disgorger. This will prevent any parts of the material from rising above the rest, and thus exposing itself to friction; and this pressure acting on the wax of the thread, or silk, will also force it into the interstices, and fill up the inequalities into a uniform surface. In the most common accidental whippings of twine, or packthread, it will perhaps surprise those unaccustomed to it, to see the effect produced by simply rubbing a whipped joint over afterwards with a piece of bees' wax, smoothing it off with the hand, or a piece of plain wood, &c.

3054. *As a finish to the systematic whipping* it will be proper to add a coat of hard varnish, which sets immediately, and makes the whole continuous, solid, and smooth. It will also, when the fracture has been glued in the common way, tend to prevent moisture from acting on it.

3055. *The waxing of silk, thread, gut,* or other filamentary angling material, is rather an important matter; and to do it well may require some instruction: it is not, for instance, by any means so easy as might be supposed, to lay an uniform surface of wax on a considerable length of very fine silk. To do this, it is essentially necessary that the wax be first in a fit state for application, that is, that it be neither brittle nor soft.

Subsect. 1. *Hints on the Preservation of Fishing-tackle.*

3056. *The preservation of fishing-tackle is momentous.* Good articles are expensive to purchase, and without care are liable to injury. As regards the rod, we have already given some directions; we will however repeat, that on the return from fishing it is imprudent to place it in any situation where it may be liable to accident. It is equally so to let the line remain loose, particularly with a bait left on the hook. We remember to have seen a rod thus left at a fishing inn on the Thames, where, on the return to dinner, it had been propped up at the front of the house, in which situation it had not remained long before a duck, attracted by the minnow carelessly left on the hook, swallowed it, hook and all. His struggles to march away with his prize, had pulled down the rod, broken the top, and run out all the reel line; which was covered in dust and dirt, and but little improved by the adventure. In some inns there is a proper apparatus, either within or without doors, to keep the rods in security, where there is room to place them upright, a groove or opening may be made to receive about two feet of the top of the rod, and something to secure the bottom also. The best appointed accommodation of this kind we remember to have met with, was at the Rutland Arms, at Bakewell in Derbyshire, where, in a lofty hall, *a stand* is placed to receive a large number of rods upright, in appropriate niches, perfectly safe from danger or molestation. We, as regards ourselves, are always averse to setting a rod upright at any time, unless there be some specific apparatus for its reception. It is very hard if a straight wall is not to be found somewhere: against such a wall, by means of a few hooks, the rod with the line fastened round it may lie horizontally. The hook of the line should never on any account be left with any thing on it: the juices of the bait become acrid in a few hours, and have an injurious effect on the point: besides which, the bait often dries so hard on the hook, as to make it difficult to detach it. Always therefore remove the bait from the hook; and having freed the point of it from moisture, draw it through one of the rod rings and hang it to another, which effectually frees it from danger.

3057. *On the return from fishing,* the remainder of the tackle should be separately dried. All waters have a tendency to injure angling articles, but some do it in a very extraordinary degree. We need hardly inform the observant fisher that, near the coast, a mist from the sea, or even a breeze from that quarter, will waft saline particles which will require his utmost vigilance to guard against. The sportsman must have witnessed the oxidising effect of moisture on his gun, where a thin coat of rust will show itself on a moist day within an hour or two. On the return, therefore, let every thing be put before the fire; and afterwards carefully wipe with an oiled rag, all iron or steel materials. It sometimes happens to rods, particularly to those without brass ferrules, that when they have been exposed to wet on the return from fishing, the joints are found to be so swollen as not to be readily separated. In such case by no means attempt to force them violently apart by twisting, and more particularly avoid so doing if the joints are of cane. If there be time and room, put such a rod within the air of a fire; but when the separation must be made immediately for packing, &c. wrap round the joints a fold of writing paper, and hold each over a lighted candle for a few minutes. The paper will prevent the flame from discolouring the rod, and likewise preserve the varnish from injury.

3058. *The general tackle will require equal care with the rods.* Damp will rot the lines and corrode the hooks, and every article in which steel enters, as the swivels of the trolling tackle, the works of the multiplying winches, and various other parts of works. Lines should be kept dry but not greased; on the contrary, every thing in which silk, hair, or gut enters, should be kept as free from oil as from moisture. More effectually to prevent rust, it will be prudent to remove all and every article in which iron or steel enters from the leathern pocket book or any leathern covering, as this substance attracts moisture whenever the atmosphere is in a state to impart it. Insects also, too minute for detection, are apt to commit havoc among all the soft articles of fishing apparatus, but particularly so with every thing in which feathers, wool, and fur enter.

3059. *The best preventive against these slow but certain destroyers,* is to tie every thing o the kind up in linen bags. Neither moths, nor those more invisible intruders, the *Dermestæ* and *Termites,* will make their way through linen envelopments. This arises, as w suppose, from something inimical to them in the hemp, for no thickness of woollen or c cotton fabric will form a security from their attack.

CHAP. V.

PRELIMINARY OBSERVATIONS ON THE PRACTICE OF ANGLING.

3060. *The simplicity usually attributed to angling* is altogether imaginary: to practise the art successfully in any of its branches requires some observation and address. Great dexterity is requisite also; and all the arts of the tactician must be employed in the ensnaring of some of the finny tribes, whose quickness of vision is such that they are not to be deceived, save by mimic representations formed with great skill. The urchin hollows the alder branch, or strips the bark of the ash, and forms from thence a whistle; but the shrill noise extracted from it does not serve to convince us that the practice of music is a simple art, and that its theory is not complex. The elegant art of fly-fishing involves so many requisites, that no one denies to its successful practitioners the praise of accomplishment and skill. The intricacies and niceties of float and ground anglings are also numerous, and demand lengthened practice to attain; in their proficiency we hesitate not to say that the London anglers excel the whole world. This praise is given as the result of no very limited experience. We have wetted our bottom and our fly lines in almost every water between John O'Groat's and the Channel; we have trolled the minnow in Wales, and have gaffed our salmon in Ireland, but we have rarely met with any anglers like them; neither did we ever yet meet with any impartial judge who did not yield to them the palm for excellence in bottom or float angling more especially. London also produces some of the best fishing-tackle makers in the kingdom. By them the angler may be fully equipped with fishing implements of all kinds, and with baits of every description, as well living as dead. If he have money, all his wants can be immediately supplied. Conveyances likewise are to be readily met with at all hours, to carry him to waters most amply stored, and immediately connected with houses of entertainment, which offer every accommodation to render the practice of the art convenient, and his stay agreeable. The more active and the more economic may traverse the banks of the Lea, while the wealthy, luxurious, and sedentary may enjoy the sport on the Thames, seated in a punt with an attendant fisherman versed in the mysteries of the art, who, if he has to wait on a true voluptuary, will bait his hook, adjust his float, and prevent the smallest exertion to the angler, save that of playing his fish. Nor are the opportunities of acquiring the initiatory practice of the art less inviting or less numerous. The New River offers scope for the piscatorial efforts of the schoolboy, who, as yet a tyro, sees in the tiny but wary fry his match; and soon perceives that to compete with his fellows he must adjust his bait with precision, watch every nibble, and the moment it is converted into the certainty of a bite must strike warily but truly. Thus initiated, he extends his wanderings to the Lea, where the fish, well fed by nature and crammed by art, are with difficulty enticed to take any bait but the choicest, or to be ensnared by any hook but the one most artfully concealed. Hence it is that London can furnish such adepts in our favourite sport.

Sect. I. *Angling modified by the Month.*

3061. *There are times and seasons for angling*, as well as for all other sports, but in this respect the angler has an advantage over him who courses, hunts, or shoots, because his sport is not limited to time by law, except in particular places and for particular fish, as in the Thames, which is shut from the *bottom* angler in the spring months up to June; and in some proprietary rivers, where fishing for salmon is shut out altogether. The ardent angler may therefore occupy himself every month in the year in his favourite pursuit with this caution, that in some few of them he has little chance of catching any thing by fly-fishing, but must depend on his trolling rod. The period from April to November is by experience found to be the best adapted to the taking of fish by rod and line, and indeed such is now, by common consent, considered as the "regular angling season." It yields the best sport, and that it is the least likely to endanger the health is true; but it does not therefore follow that every one should confine his anglings within these limits, nor is it by any means to be concluded, that the winter months are totally barren of sport; in the Thames they are by many reputed the best.

3062. *January* offers usually but little temptation to the angler to leave his snipe or wildfowl shooting, hunting, coursing, or his skating. It is however possible in a bright day, when the season has not been very severe, that a trout or a grayling, but particularly the latter, may be on the look out for gnats and other minute flies, or tempted with the gentle at the bottom. Chub also may occasionally be taken with the winter bait of ox or sheep's brains. A greedy jack may perchance be ensnared, and a roving roach may be tempted with paste; but the other finny tribes have retired to deep holes, clustered among the few remaining weeds, or lie sheltered by overhanging banks, or buried in the mud below. Here they remain in a partial state of torpidity, or at least of inactivity, and probably do not forcibly feel the calls of hunger. There must also be taken into the account the locality to be fished. In the southern parts of our island fish commonly move from their semi-hybernation two or three weeks before they move in the north. In the Trent fine chub and pike are taken.

3063. *In February* the chance of success is much increased in angling, particularly in some warm localities. We have ourselves taken this month, chub, roach, carp, and perch; jack have also afforded sport, but they are more commonly taken at snap at this time, than by any other method. We once took likewise a very large eel about the middle of this month, while roving with a worm for a perch, having found this kind of fishing for large perch singularly successful at this time of the year.

3064. *Perch* now and then, as we have observed, may be enticed in this month, and occasionally roach also. In some sheltered situations jack will take a live bait with line and float in broad waters, but they are too apt to be capricious, and therefore are most likely, as already observed, to be taken by the live bait with the spring snap. Flounders are fished for in tide rivers during this month with success, and eels occasionally run. The worm-taking fish of rivers will now begin to seize the well-scoured varieties, particularly the lively reds. Pond fish will not stir so early; we however have taken chub by a pair of wings on an otherwise naked hook, substituting a small grub, or two gentles, for a body. Our method was to allow this to roll off a bank, under which we suspected chub to lie, when we often found it immediately seized; in fact, it usually succeeded on moderately open days brightened with partial gleams of sunshine.

3065. *The month of March* brings with it new and brighter prospects, and is the acknowledged time to commence fishing operations in earnest, provided the angler be not too sanguine in his expectations. Jack are usually hilling now, and many of the finny inhabitants are beginning to follow their example if the season be forward. All such, therefore, are in an economic point of view better let alone than disturbed during the process, however good their condition may be. Occasionally, but rarely, a trout will take the worm trailed at the bottom of a scour in March: but the early dark dun and brown flies, assisted by the cow-dung and other muscæ, will more frequently tempt him in a brisk windy day when not cold, and more certainly when there has been no frost in the night. The grayling also, particularly the smaller ones, will begin to rise to the same baits, but of them there is less chance at this season than of the trout: this refers, however, to some rivers only. In the earlier salmon rivers the salmon are on the run, and will afford admirable sport this month with a fly. In the Thames the angler is allowed to fish for the trout in the same manner at this time; and also by spinning, the best mode of angling for it at this season. Carp and tench of rivers, chub, roach, flounders, and eels, are this month fair game for the angler when he can meet them.

3066. *In the month of April* the angler usually commences his operations in earnest, but even yet we would say to the troller and float fisher, Hold hard! while we throw in a word in favour of some of the scaly multitude. If they have spawned they are weak, and afford but little sport, and they are likewise totally unfit for the table: if they have not spawned, or are on the eve of spawning, for every fish now taken thousands are lost to the water; and unless the season has been very forward, there are but few coarse fish, except pike and jack, that have completed the process in the first week of this month. It is certain also that in some waters as many pike *hill* in this month as in March, and except in very warm ponds, perch have still the milt and roe within them, and there, gentle angler, let them remain: it will be sportsman-like and merciful, and in the succeeding months fall to it with what appetite you may. The prey will then be worth taking, and prove an acceptable treat to your friends. Fly-fisher, the trout are rising!

3067. *It would be well that the fence months*, during which heavy penalties protect the spawning fish in the Thames, were extended to other waters. We would not, however, include the last fortnight in May, as by that time, when the season is not unusually backward, we suspect most fish common to the angler have spawned. The gudgeon of the Thames now seek less active streams; and run up the mouths of those tributary to it, where they locate themselves to spawn. During this and the next month the Lea fishers seek them, and consider them as a delicious treat. But they are not thus early in all rivers; on the contrary, in many they will not *take* well until June. In April the trout bids adieu to his hiding-places, which he had before only quitted occasionally, and he may be taken either at top or bottom of the water. The caddis, or larvæ of the *Phryganeæ*, or spring-flies, are now in full operation, and may be successfully used in some rivers, in float angling for both trout and grayling; while the water-cricket, or creeper, which is the pupa or chrysalis of the stone-fly (*Phryganea grandis*), will now usher in the daping or dipping season. Carp about this period are observed to eat fine grass and aquatic plants, and both carp and tench will take the red worm. But in this month a great number of perch, barbel, dace, chub, minnows, rudd, and pope or ruff, spawn: where that is not the case, by angling for them in the swift shallows and gravel patches with worm, and in some rivers with caddis also, they may be obtained, as they will bite freely in mild weather, particularly when a hoar frost has not preceded the day. In the latter part of this month eels may be taken in plenty. Flounders and smelts are likewise free biters in docks, tideways, &c. &c. In some rivers the salmon and sea trout now afford the angler his banquet of fishing delight; the smolts, or year-old fry, on their way downwards to the sea, are excellent risers to any small fly; and in the grayling rivers that admired fish will occasionally take the worm, though this cannot be considered as its season, except for spawning.

3068. *May* is a spawning month with many fish, particularly its first week; and it is the more likely to be so when it succeeds to a backward spring, which will retard the spawning season a fortnight. The state of the water will do the same: when winter floods have been long detained by late additions, and the water prevented from clearing by a wet spring, many fish delay their spawning, instinctively dreading that the clearing away of the flood may derange the gravel which is to protect their ova. Roach, some carp and tench, bream, gudgeons, and bullheads, spawn in abundance the early part of this month, all of which, with the exception of gudgeons, will continue to take the usual baits offered with moderate eagerness. Gudgeons are not fairly on the feed in many rivers until June: the insects which they seek by earthing up the gravel are not forward; and they derive a scanty subsistence only from this source until June and July, by obtaining an occasional supply of early larvæ. In all cases the fish that have spawned will for a time seek retirement in pools, while those which have not, may be found in gravelly shallows and sandy fords, which it is supposed they seek for the purpose of depositing their spawn, as well as to assist by friction the action of shedding the milt and roe.

3069. *In June* the London angler has his favourite resort the Thames opened to him, but to the bottom angler the early parts of the month often prove a blank. Whipping for dace is however successful in the sharps and eddies, and occasionally a fine trout is raised at the same time. On the great trout rivers the May-fly is probably at its height, and happy is he who can get a good station. Grayling also, beginning to stir themselves, are sometimes alternately taken with the trout. The punter looks forward to the end of the month to open his campaign against the gudgeon and barbel, while the more active of angling amateurs skirt the banks, and dape with living insects for chub, roach, dace, &c. Perch, eels, and flounders yield sure sport; in fact, all the white fish will begin again to take freely towards the end of this month. The Thames trout is now active.

3070. *In July* the angler, if he would command success, must rise early, and remain out late. The white fish have now fully regained their strength and plumpness, except those which spawned late. Those carp and tench which did not spawn the last month, may be expected to have done it the first week of this. Jack trolling is yet uncertain, and cannot be pursued to any advantage without a favourable breeze and a hidden sun. Gudgeons are now on the feed, and the trout will chace the minnow, having somewhat glutted themselves with the fly. In this month the half unfair practice of night-fishing with a lobworm on the top of the water for large trout, is but too common and too destructive. Minnows in some streams are again in spawn. The grayling, who has begun to rise to all the trout and dace-flies with avidity, will yet take the gentle at midwater, and sometimes in preference, particularly if the water be at all foul. It is now also that, by the practice of sinking and drawing, the largest grayling may be taken in some rivers, as in those of Hampshire. Roach will also even in midday, if the sun be not in full vigour, take a gentle on a hook previously dressed with a hackle half way down it, or the same with a pair of light coloured wings. Chub may be caught in this month with the grasshopper all day, but early and late anglings are those principally to be depended upon for the taking of trout. If however a very warm gloomy day, with occasional moisture, not the consequence of electric action in the air, should occur, the opportunity should be embraced, as bottom fishing with a lively worm may then fill the pannier. In regard to fly-fishing it will be found in many rivers, that the trout are now less inclined to rise than they were in the preceding months; they will however, if a favourable breeze lend its aid, take the bright coloured duns, as the red spinners, &c. Towards the close of the day, and particularly after a very hot clear one, they may be taken or enticed with the fly called the Coachman (No. 42. of our list), and still later in the evening the moths will prove effective.

3071. *The northern sportsmen* are now on the alert to complete their summer fishing, and prepare for grousing. The grilses, which are fast returning, will now take the fly. The salmon and sea trout also afford the angling visitors to the Lochs and Highlands of Scotland a surfeit of sport, and they return surprised at the grand scale on which fishing is practised on the large waters of the North. On the lakes of Northumberland and Cumberland small perch may be taken in myriads by the tourist, but it is not common to meet with a large one. The burn or beck trout will also afford much sport to the visiter, who will hardly fail to be amused with the blackness of his hue. In the expansive waters of the North the troller from the South must adapt new tackle to his fishings. His multiplying winch must be changed for a plain one, unless the principle of the new multiplier be better than that of the old. Without this caution he may lose his line, or break his rod: his fish he must part with, if it happens to be a large one. In his wanderings the gillaroo trout may probably engage his attention, as well as the char and the gwiniad, which, as being scarce, must interest him.

3072. *In August*, bottom fishing may be pursued with avidity, the summer leisure of the Londoners invites them to the haunts of the fish, and the Thames is seen studded with punts, some stationed in the barble deeps, while others are moored in the gudgeon scowers. The banks present, ever and anon, a daper for chub, or a worm-angler for perch, or a general fisher like the sharp lad, who to the inquiry what he fished for replied, "For what he could catch." The professed angler will at this time of the year attend the waters early and late only, unless a lowering gloomy day favours his wishes. The whipper for dace will find them getting shy, and the roach will look twice at the well sunk half-fly with a maggot before he will take it once. The trout season is fast waning: but that for the grayling is hardly arrived at its zenith, either at top with the fly, at midwater with the gentle, or at the bottom by sinking and drawing: they will however now take the bait, and yield the angler sport in rivers where they abound. Sea angling now also engages the attention of many of the migratory class, where in a boat the graceful fair also may be seen, ensnaring at once the fishers and the fished. On the salmon rivers, those whose inclination does not lead them to the arduous pursuit of grouse shooting, may still attempt the capture of this noble fish with either fly, minnow, or worm, in the rapids; while, on the lochs, he may be trolled for with the tail of a par during a rowing or sailing expedition. In the Hampshire and the Derbyshire rivers which furnish grayling, the angler wields his fly rod with signal success. Sometimes, however, they may be found willing to rise, yet slow to take. If this prove to be the case, try bottom fishing with either gentle or grubwasp, which, in the pools to which they resort at this time, will prove the more certain means of taking them. The precincts of the river Lea now offer the beauties of its enamelled meads and varied prospects once more to tempt to its banks the citizens of London, to wet their lines and recreate their persons. Here may be seen the idler, with whom fishing is an excuse to leave home and business; and although he may not be able to punish the fish, he can punish the meal spread out for him, and wash away care in a pot of the landlord's best, or puff defiance to reflection and bad sport from a yard of clay, or a four inch cigar. We will hope however that this is not "a fair sample:" such are only occasional guests. The majority of those who frequent the fishing-houses on the Lea are, as we well know, excellent anglers and wedded to the sport. Hither they resort during this month in pursuit of barbel, jack, roach, dace, gudgeons, eels, &c. &c.; and a few days spent at one of these clean neat *river houses of call for anglers*, will introduce the novice in Lea fishing to some of the first bottom anglers and trollers in the kingdom: and he must be indeed a cynic who could not find recreation here for that time.

3073. *In September* the weeds begin to rot: the general fisher having tired out the ant-flies in the last month, and even the fetid brown at the beginning of this, now lays by his fly tackle altogether, and betakes himself with his bottom rod to the pools, whither chub, roach, dace, carp, and tench, now begin to retire. The gentle at this time almost supersedes the worm, and the perch will best take a live bait: pastes begin to be relished by roach, and with this bait roach fishing is carried on through the later months of the year. The grayling are at this season in their finest condition, and will continue to take freely the late duns and willow-flies. The very large ones among them may be tried for successfully, by the methods hinted at for the last month.

3074. *October.* The sun of the fly-fisher's joys is now fast setting, and unless he be near a grayling river, or be a troller also, he is little more than cheered by the perspective of a new era and another dawn. The weeds are fast decomposing, and as the fish shun the rotting mass, the pools and hollows to which they retire offer the only hope of success. Here, with the well-mixed paste, the roach and dace angler sits secluded, and the troller plies his skill, rejoicing in the glories of autumn.

3075. *In November*, too, this healthy branch of our art is triumphant; and grayling, particularly the smaller ones, will still rise to the artificial duns. Pike may any day be taken by trolling. We took, on the 21st November, 1824, three jack in about two hours' trolling, on a blustering day, at Boxmoor, Herts. Chub-fishing with brains may now be pursued, and roach fishing is still good in the deep pools, with winter gentles or well-made pastes, and may be continued both this month and the next if the weather continue open. But prefer *spinning for jack.*

3076. *December* closes the fishing year with somewhat of a similar bill of fare to that of November, but considerably more uncertain. Some enthusiasts in the sport, however, may yet be found to try their luck, and some hardy sons of Nature might venture for the chance of a gleam of sunshine and a gleam of sport. We wish them success; but we must decline accompanying them. Trout are at this time out of the question: but the hardy live-bait fisher still bags his pike in first-rate condition.

Sect. II. *On the proper Times of the Day, and the best Situations for Fishing.*

3077. *The best time of day to fish* during the summer months is from sunrise to two or three hours after, and from two hours before sunset until half an hour or an hour after that time. Of night fishing we say little, as the less it is practised the better it is both for the credit and health of the angler. As the season advances towards the colder months, the likeliest fishing hours are those near the middle of the day. In direct winter fishing every hour is alike, provided the weather be open and mild; for if it be frosty, no hour is good. In the spring as well as the autumn months, when the temperature of the atmosphere is raw and cold, even although there be no apparent effect of frost, the fish will not bite until the sun has dissipated the cold air.

3078. *Dark nights it is thought affect fish*; that is, fish are supposed to take baits less eagerly after a gloomy dark night than after a bright moonlight one; because, during the obscurity, they roam in search of prey, and in the morning being glutted they are less eager for food. We by no means however think it proved, that fish feed less during bright nights; for we are warranted in supposing that they seek some repose as well as quadrupeds, though they are, as we know, taken in bright nights by the evening and night ephemeræ.

3079. *The favourable effects* of dark lowering days are, however, not so questionable as some think ; on the contrary, fish of all kinds are then disposed to bite, particularly in ponds and other still waters. Heavy rain is unfavourable to sport, but a soft drizzling rain, on the contrary, assists some varieties of angling ; and soft passing showers, provided they are not accompanied by, or are not consequent on, an electrical state of the atmosphere, increase instead of diminishing the success. Thunder, we hardly need hint, is very unfavourable to the angler. Fish never take well when the mercury in the weather-glass is falling.

3080. *A breezy warm wind* is very favourable to the taking of some fish, particularly the more predaceous varieties, unless such a wind should occur in the middle of the summer, when a moderately cool wind is equally if not more favourable to pike, perch, &c. : in a bright sunny day, a cool breeze will make all fish bite. They are on the alert at such times to profit by the ripple made on the water, which somewhat disguises them; and the fisherman ought also to be on the alert, as then his baits are disguised by the same means. The south and south-west winds are decidedly the best for angling. The east is usually considered as the most unfavourable, and the due north wind next to it: but in our opinion a wind which blows between these two points, is more detrimental to sport than when it is either easterly or northerly direct.

3081. *An angling expedition* to waters unknown to the fisher should be undertaken with materials to meet every variety of fish, and every method of taking them. Arrived at a spot, a little inquiry judiciously set about will greatly further the end. If a known angler can be met with, it is seldom that information is withheld, particularly when he learns that the visit is but a temporary one. If he be a pot angler, and be *costive* as the lawyers express it, open his mouth by a cigar,— perhaps he may not disdain a *fee ;* his betters have swallowed such a bait. We have travelled through most parts of the united kingdom, and always with our fishing-tackle; many parts we have visited several times over, and we have felt the advantage of pursuing the rules we are now laying down for others.

Subsect. 1. *Particular Observations connected with the Practice of Angling.*

3082. *Concealment ought to be the watchword of every angler.* The want of caution in this particular defeats the fishing enterprises of thousands; even many expert anglers lose half their fish for want of being more wary. How is the approach to the water usually made, but by one or more going at once to the margin, looking over its sides, and conversing aloud on the best spots for swimming the float? Can it be otherwise than that all fish within sight or hearing will abscond? and the larger the fish the more wary will they be. If an opportunity occurs, it is prudent to visit the intended angling ground on the evening before fishing commences. At such an inspection it may not be amiss to make the most of time to lay in a few night lines for eels.

3083. *Having chosen the spot or swim,* as it is termed in rivers, which should be of sufficient depth, throw in some ground bait all round to congregate the fishes: but in the very spot it is intended to take the principal stand, there throw a plentiful supply of ground bait, somewhat of the nature of the baits you intend to use. Clay balls, with worms indented in them, if worm fishing is to be principally tried, are a very proper ground bait. Gentles may form the basis of the ground bait in a similar manner; but for this, use the worst of your gentles, or an inferior sort. If paste is to be used, the ground bait may be clay and bran: for particulars we however refer to the article, *Ground Baits*, p. 1030. If from necessity the ground bait be deferred until just before the angling commences, it must not be so plentifully employed as in the other instance — the fish may else become glutted. In that excellent work, Salter's *Angler's Guide*, our views on the subject are completely exhibited when he says, " After you have made choice of a place to fish, first plumb the depth truly, and with as little disturbance to the water as may be ; let your line, with the plummet to it, remain in the water while you make and cast in the ground bait, by which time the line will be softened and stretched, consequently less likely to break. If the water be still, throw in small pieces of ground bait; if a strong current, large pieces: keep as far from the water as you can, and go quietly and slily to work, for fish have so many enemies that they are suspicious of every thing they see, feel, or hear; even the shaking the bank of a river (under which fish frequently lie) will alarm barbel, chub, &c. and spoil the angler's sport: this occurs frequently by strangers walking to and fro to see or inquire what sport, &c. ; and also, when two or three anglers are fishing near each other: therefore avoid agitating the water by trampling on the bank unnecessarily ; drop your baited hook in the water gently, and you will kill more fish than three anglers who act differently."

3084. *Avoid every thing that may attract the attention of the fish* : stand as far from the water's edge as you can, and never let your shadow fall on the water. If possible, take the advantage of a bush, tree, &c. completely to conceal the person : when an angler fishes near home, an artificial screen of rushes, twigs, &c. may be employed for that purpose. In daping or dibbing with the natural fly, the greatest caution is necessary to keep completely out of view of the fish ; and not only the shadow of the person, but that of the rod also, should be kept from falling on the water.

3085. *Among the cautionary remarks on angling* we hint, that the colour of the water should be imitated in the colour of the line, particularly that part of it which enters the water as the foot-link. When the water is very fine and bright, Indian weed is better adapted to it than gut, but it must be well soaked before it can be prudently depended on. In an ochreous soil, when a flood has tinged the water, let the gut be also stained of the same colour. Pure clay gives a kind of light chesnut, which must be likewise imitated: it is therefore well to have these varieties in the fishing pocket-book. We once more advise the young angler never to fish without a reel. In our early anglings we so frequently felt the inconvenience of doing so, that we would not whip for bleak even without being armed with a reel; and this, in general cases, should be used not on the stop, but wholly unchecked.

3086. *It was our practice to weigh all our fish*, and to note their several weights, which custom we recommend to our brother anglers, if they are not at present in the habit of so doing. It will beget a satisfactory readiness of judging by the eye only the weight of every fish. We have witnessed many instances of extreme accuracy in this respect in individuals, which gave rise to many diversities of conjecture, and laid the foundation of pleasant small bets with such as were equally confident but less skilful. A small spring tube weighing-machine (*fig.* 502.) is therefore a useful appendage to the heavy baggage of the angler. To judge of the eye-weight of a fish it is necessary to remember that it is not by the length alone that this judgment is to be formed: this must also be difficult from a due regard to the relative proportions between the length and the circumference. Thus Halieus in *Salmonia*, having ascertained by measurement that a well fed fish he had taken was but a little less than twenty-four inches, concluded, by the usual scale of relative proportions in trout, that his solid measure, *i. e.* his weight, was about five pounds ten ounces. His companion observes on this, that the principle on which he formed this calculation must have been the mathematical one, *i. e.* that similar solids are to each other in the triplicate ratio of one of their dimensions, to which Halieus assents, and the trout proves to be five pounds ten ounces and a half. Halieus further informs us, that his standard solid with regard to a well grown and well fed trout is that of seventeen inches by nine, which will then weigh two pounds. Custom will render it equally easy to form a tolerably accurate judgment of the weight of other fish by the eye, and this acquirement to those who make a point of only taking such as are above a determinate weight (a regulation by the bye sometimes forced on us), often proves convenient. There is also a greater concentration of muscular matter in some fishes than in others, of which the salmon is an instance, while the whiting weighs light in comparison to its bulk. All flat fish are weighty. Where fleshy flakes are large, as in the cod, air intervenes, and thus lessens the gravity of the fish. The carp is proportionally heavier than the pike, and the weight of the eel, particularly the conger, is greater than all. Experimental trials will afford some curious and unexpected results, as we have found.

WEIGHING MACHINE.

SECT. III. *Hortatory personal Remarks connected with Angling.*

3087. *The dress of the angler* has been a matter of some dispute with writers on the art. Some think he should be clothed like the huntsman of old in green, omitting, we presume, the border of gold to the vestments; otherwise the fish, mistaking it for gimp, might prudently avoid the angler altogether! Green may be very proper in some cases, particularly where enamelled meads or verdant groves bound the water's edge; but where a long line of pebbled strand studs the margin of the shallow but wide streams, as those of Wales, Scotland, &c. a drab suit must be more appropriate. We would recommend the dress to be that of a shooting jacket (long skirts are inconvenient in *wading*, much of which practice is only necessitated occasionally in wide streams) with ample pockets; and as to the colour, so that it be by no means glaring, we think it immaterial; and the more so, as the prudent angler will allow the fish to see as little of his person as may be. There is one part of the dress which we do not recollect ever to have seen noticed by any writer, which is the *hat.* Now this, being almost impossible to conceal under all circumstances, should be rendered as little striking as possible. From a pebbled or sandy shore, a black hat must be most conspicuous. Here a white one would be much better, but when a white hat is contrasted by dark green scenery behind the angler's head (as must sometimes be the case, fish where he will), it must be more objectionable even than a black one. There is a drab variety, however, now in use, which avoids both these extremes; and such a one, with a low crown and wide brim, we think the best that can be worn. We know some anglers who fish in caps; they are light it is true, but they do not shelter the face from the sun, neither do they afford a convenient circular reel for a spare line, and an excellent receptacle for wet flies, as the beaver does.

3088. *Waterproof clothes* are very necessary in the Highlands of Scotland and south of Ireland, where short but heavy showers continually occur. Waterproof hats, surtouts, capes, and fishing boots are made in great perfection by Mr. Cording, 231, Strand, near Temple-bar. Boots for walking amongst the rocks, and which are waterproof to the knees, are excellently made by Messrs. Medwin and Co. of Regent-street, boot-makers to H. R. H. Prince Albert.

CHAP. VI.

ANGLING BAITS GENERALLY.

3089. *Angling baits* are of two kinds: first, the matters which constitute the usual or the occasional food of fishes; and, secondly, the artificial representations of such matters as they are known to seek after. Under this view, fishes being as we know nearly omnivorous, so the list of their edibles must be extensive and diversified. This view of the subject will free the angler from the trammels of rule, and will convince him that he need never be at a loss to procure fish baits in any circumstance, since the localities of every water always furnish the means of support to its inhabitants. Baits may therefore be considered as always at hand, and the ingenious mind will always devise means for obtaining them. To be prepared, however, saves time and labour, and it also insures a greater proportion of success, for it is unquestionable that the appetites of the fish of much frequented rivers, as the Thames and Lea for instance, require to be pampered like our own, the quantity of food daily presented to them creating a delicacy and discernment in the choice of it. For them the worm, to be taken with avidity, must be artificially fed and purged of its grosser matters. The various larvæ of the fly, in the form of caddis, grub, or gentle, must, like worms also, be brought into a corresponding state of preparation, to suit the tastes of these well-fed gentry.

3090. *Judgment in the selection of baits* is founded on this experience in the gastronomy of the fishes of well fed rivers, and such knowledge forms one of the feathers in the angler's cap; still it should not fetter his practice or slavishly confine him to fixed rules. He may not always have such well prepared baits at hand. He may also occasionally fish in less frequented water, and the very appetite which is the most pampered is the most likely to be capricious; in which instance, and in numberless others, the angler will find that a more extended consideration of the subject will greatly assist his efforts. A perch fisher of the old school having expended his worms or his minnows, probably retreats in despair. Another who looks further takes out the eyes of those he has already captured, and continues his sport with them, or from his sandwich box he attaches a morsel of beef or mutton for the same purpose. The *Palludinæ*, or small water snails, drawn from the bottom of a river, will entice the carnivorous trout when other baits are expended; and a filamentary morsel from the tendinous parts of beef will take roach, or almost any other of the coarse fish. The pith, or marrow, running in the vertebral canal of a loin of mutton, may be employed for the capture of chub; and when the troller's baits are expended, a well trimmed piece of bacon, or other solid morsel of fat, may be successfully substituted to allure the hungry pike.

3091. *Fish baits* may also be considered geographically, and thus the travelled angler finds that the articles used as such in his own country are inefficient in others. Fish usually prefer the indigenous food of their waters, or such substances as represent it: however, they may on particular occasions, or when pressed by hunger, take a variety. In Holland and Flanders it is common to bait the hook with raw sheep's liver for gudgeons; and the stringy portions which surround the spinal marrow is considered most killing baits both for them as well as roach, dace, and chub. Fruits of various kinds are used in France as angling baits, as the inside of a red cherry for chub, ripe currants for dace, &c. &c. Carrots boiled in sweetened water will there take both carp and tench; and throughout the Continent, the cyprinus genus generally are taken by *fruits* and *vegetables*. In some other countries *animal meats*, both dressed and undressed, are principally relied on for the purpose, while in others more dependence is placed on leeches, slugs, snails, portions of frogs, and sections of the water newt. The fly-fisher who crosses the sea will not rate the discrimination of the continental trout very highly, when he observes the artificial flies he there meets with. However he must not be misled into a supposition, that these clumsy dressings are intended in every instance to represent flies common to his own country; for here also the appetite is accommodated to the circumstances around it, and the flies indigenous to France, Spain, and Germany, are many of them not to be met with in this country.

3092. *Locality with regard to baits* is to be observed within our own limits also. In our western isles a raw cockle, a prawn, or shrimp, is used to entice salmon; and in some parts of England the fresh water muscle is employed for the same purpose. Salmon spawn, as a bait for trout, was unknown in the South until within a few years, though sufficiently common in the North long ago. In some rivers grayling are more frequently taken with a gentle at midwater than by the fly. The flies also which attract fish are not the same in all parts of England. The range of the May-fly (*Ephemera vulgata*) is much confined; and in some countries, and on particular waters, it is wholly unknown. The soil, the climate, the cultivation of the land, and various other circumstances, render some insects indigenous to certain districts only; nor are the individual insects themselves in the same state of development in different districts. In the cold regions of Scotland the congenerous flies are thin, and their types require to be dressed less full than we make them in the South. Such influence has locality, that in the river Dove, flies which are greedily taken between the rocky acclivities are often refused in the campaign or more open country, although only two or three miles separate them.

3093. *Baits*, as it is well known, are influenced by seasons also. The trout is unlikely to be taken by the most tempting flies when presented to him out of season; and even the time of day in which particular flies naturally make their appearance, is the only one in which the trout can be raised by the artificial types. The white moth, or owlet of anglers, dressed with a snowy wing and peacock harl, is so excellent an evening bait in Hertfordshire, that it seldom fails to hook trout through the summer months, and that even when the brown moth, or every other evening fly, has been refused. Yet when we have, as a matter of experiment, tried it at an earlier hour, we have never succeeded. The gentle is principally grateful to fish in the autumn, and the caddis in the spring, because at such times both are provided by nature in the greatest quantities.

3094. *By some instinctive intelligence*, the appetites of the finny tribes are only stimulated to the *seasonable* repast; and such a knowledge will save the fly-fisher particularly much trouble, and show him the advantage of considering the subject of baits with reference to their natural history. Baits so considered will relieve him from his dependence on lists and formulæ, teach him to judge for himself, and enable him to meet contingencies. It will also increase the interest of the pursuit, by causing the practice of it to spring from his own judgment. It may be expected that we should offer something on scented baits. When we can observe that fishes depend as much on their organs of scent as those of vision, we shall be less dubious on the matter than we are now.

Sect. I. *Living Baits.*

3095. *As worms and insects* form a very great proportion of the food of fishes in general, it naturally follows that the baits we offer them are mostly derived from these sources. But these lower links in the chain of animated nature have been but little understood by authors who have written on the art of angling; and thus absurd, unintelligible, and contradictory accounts of the insect baits disgrace the pages of almost every regular treatise which has hitherto appeared on the subject. It would greatly increase the respectability of our art, and it would as certainly pave the way for a more scientific consideration of its objects, if a new nomenclature were introduced into it (particularly of the living baits in use among us), which should be formed in accordance with the systematic descriptions of naturalists. But however trivial and absurd, and however fettered by arbitrary coinage, or multiplied by provincialisms, are the names in present use, we fear that it would require infinite labour at once to overturn them. Until, therefore, a classical nomenclature, which shall bring the art of angling on a par with other liberal recreative pursuits, be universally received, we must be content with a preliminary step, by blending together a technical and a popular vocabulary, which shall be a little more in accordance with cultivated language.

Subsect. 1. *Worms* (Class, *Annelida*; Order III., *Terricola* Cuvier.)

3096. *Worms (Vermes)* form the sixth and last class of zoological subjects in the Linnæan system; and in that class the great systematist placed an incongruous mass of living matter, which even his acumen found it difficult to distribute satisfactorily, for the discordant members of it have no one character in common. Generally considered, their substance is soft, and longitudinally much extended; they are destitute of feet, and slow in their motions, and their head is usually indistinct. Some later naturalists, in their endeavours to form a more just appreciation of the great classes comprehending the inferior orders of animals, refer *Annelida* (worms, &c.), *Crustacea* (shrimps, &c.), and *Insecta*, or insects, properly so called, to one sub-kingdom, under the comprehensive term of *Articulata.*

3097. *Of the five orders* into which Linnæus divided this class, our present business is with the first only, *Vermes Intestina.* This admits of subdivision into intestinal or body worms, and earth-worms: of the former some description has already been given, when treating of the diseases of fishes (p. 947.) as well as of other animals; of the latter, as forming an important item in the angler's practice, we proceed to give an account.

3098. *The earth-worm (Lumbricus terrestris).* The external characters of the earth-worm differ as it branches itself out into many specific varieties; for we cannot persuade ourselves, with Mr. Barbut, that the monstrous dew-worm of the fields, the pungent brandling of dung-heaps, the red worm sheltered in our garden mould, and the marsh-worm of the edges of rivers, are the same animal, differing only in the periods of its growth; on the contrary, we believe them to be unquestionably individual species.

3099. *The earth-worm is an hermaphrodite*, and contains bisexual organs, the situation of which is externally marked by an oval mass or enlarged belt around the neck, which is called the *knot* by anglers. In some of the species of *Lumbricus* the sexual belt or ring is rather more centrally placed, as in the red-worms and gilt-tails. The sexual belt must not, however, be mistaken for the diseased enlargements of their absorbent glands, when they are unhealthy. The application of these parts together for a certain time, impregnates the ovaries underneath.

3100. *The dew-worm (Lumbricus terrestris)*, which is also the lob-worm and twachel of anglers, and the large garden worm of ordinary language, is sometimes of such a size as to be able to extend itself to nearly a foot in length. The hinder extremity tapers more than the fore, except in that variety called the squirrel-tail, where it expands into a flattened surface, and is marked by a red stripe. The colour is a dusky red, the head more intensely red. The enlarged rings or knobs, observed in some, are not symptoms of age, as has been supposed, but are sometimes occasioned by wounds, in others by accidental stoppages of the circulating juices, and may be always brought on by suffering them to become unhealthy. In some parts the squirrel-tailed variety is preferred for angling, and the vicinity of the Thames is an instance where they are eagerly sought after as *baits for barbel.*

3101. *Dew-worms are procured in various ways.* They are sometimes dug for, which, if the ground be moist and light, is a ready way; but in the droughts of summer they retreat deep, and the search is rendered more laborious. When they are not wanted immediately, lay some wet straw over a space of ground, and the worms will on the second day be brought near the surface. If the want be urgent, pour over a surface of earth the liquor in which young walnuts or the green shells have been steeped. If the quantity wanted be not large, strike the prong of a fork or mattock, &c. into loamy earth, the motion of which will alarm the worms, which, mistaking it for their mortal enemy the mole, will hasten out of their holes. But the most ready method of all to obtain numbers of them is, to walk cautiously over close-cut lawns or clean-fed meadows with a candle and lantern during the night. If the weather be moist, and the search be conducted with a very light tread, almost any quantity may be thus procured; for as they are blind, it is not the light but the motion which disturbs them. As each worm when laid hold of must be gently drawn out of its hole, should it break in the attempt, by no means add it to the rest unless wanted for ground bait, when the pieces may be employed to insert into balls of clay, &c.

3102. *Lob-worms are excellent baits* for various fish and various fishings. A lob worm trolled on the top of the water in a star-light night will frequently take the largest trout. We have never practised this: we never could persuade ourselves to practise it, for we think it a species of poaching; but we know that when it is done, it is too successful. A moderate sized lob-worm on a trout hook trailing the ground in a sharp stream by means of a bullet, will entice large trout; and the same method, with both hook and worm of a larger size, in deeper waters, forms a killing bait for barbel. Very large eels are taken by night lines baited with lob-worms. Barbel are still more frequently caught by them, particularly in the Thames, where the alternation of greaves and lob-worms includes almost the whole practice of all the celebrated barbel puntmen, who live by attending persons fond of this variety of fishing. Lob-worms may be procured in Covent-garden, Bell-alley, and Crooked-lane, and at most large fishing-tackle shops.

3103. *The brandling* is very common and extensively diffused, and yet is generally an inhabitant of artificial mixtures made by the industry of man, such as old heaps of compost of rotten tan, sweepings, collections from out-houses, in which horses, cows, and especially pigs, have left their dung. Old thatch, or any vegetable matter in a state of decay and not saturated with water, but particularly very old dung-heaps, will afford a profusion of this useful worm; for although they become more bright and somewhat more tenacious by scouring, yet as they are never gorged with earthy excrement, they serve for immediate use better than any other worm. Brandlings are greater favourites with country anglers than with London anglers, who prefer as a general bait the marsh and red worms. We have used them extensively, and have found them variable, but in general cases we prefer the red worm to them, except in the instance of bream fishing, when we consider them as decidedly preferable to the red variety. They are used as baits for trout, for grayling, and for all the carp species, and in fact occasionally for all the worm-taking fish.

3104. *The red worm.* This is found in the same places with the brandlings, but not so commonly or universally. In tan heaps they are very numerous, and we prefer them obtained from this source to all others. The London anglers, with whom it is a most favourite bait, get them from the banks of ditches and common sewers. Persons are also employed by the fishing-tackle shops to procure them in vast quantities for the use of those who have not leisure to search for them in their haunts.

3105. *Gilt-tails.* This is not a mere variety of the last, but a distinct species; it has however the sexual organs rather centrally placed like the red worm, or is knotted, as the anglers term it, nearly in the middle. Gilt-tails are rather larger than red worms, and appear of a lighter colour, particularly towards the tail. Our own experience leads us to prefer the red worm as a general bait; however, the gilt-tail bears scouring better, and may be kept longer than most other worms.

3106. *Marsh-worms*, known also as blue heads, are very common in moist marshy situations of every kind, from whence they derive their name. They are purposely sought for by poor persons with candle and lantern in summer nights, particularly after rain has fallen in the day. This they practise through the whole of the summer months, to supply the demand for baits in tackle shops. In colour they are of a light dirty purplish cast, and in property are valuable to the angler, because he can seldom be at a loss how to supply himself with them, from the banks of rivers, or the moist sides of ditches. When taken, if they be drawn very gently through the fingers severally, and then placed in long meadow grass rather turning off, they may be used at once, without further preparation. But, except under immediate want, marsh-worms, being naturally very tender, are rendered much better by a thorough cleansing, and being kept some time before they are used. In attempting to preserve them through the winter, much more care is necessary than is required by any other worms: the moss in which they are placed should be kept drier and more frequently changed. A little of the earth likewise should be allowed to remain with the moss when it is gathered, and occasionally a little fresh pot liquor, in which mutton or beef has been boiled (if totally free from salt), may be added, by well wetting the moss with it, and then squeezing out the superfluous moisture.

3107. *As a bait*, we consider the marsh-worm inferior to the red worm; gudgeons will occasionally take the smallest of them when well brightened by long keeping. Perch will also take three small ones on one hook, carrying the two first far up the shank, and allowing the head of the last, which should be a smaller one, to remain half pendent from the lower segment, the point being fully covered with the tail extremity. All worm-taking fish will occasionally bite at the marsh-worm, and sometimes very freely.

3108. *The tag-tail* is so called around the metropolis from the yellow tinge of its tail. It is sometimes erroneously called the turnip worm, a name specially applied to a worm-like grub or larva. It is not more common in turnip fields than in colewort plantations or in any clayey strong soil, whether arable or meadow. It is principally met with in moist spring weather. In size it resembles the brandling, but in colour it varies, being mostly of a pale fleshy hue about the body. The head is somewhat enlarged, and of a deeper red than the body in the young ones, but assumes a blue tinge in the older, about half an inch of the tail inclining to a dirty yellow.

3109. *As a bait*, the tag-tail is greatly preferred to most other worms by some anglers. We have used them, and as spring worms they have proved successful in our practice, but we do not think they merit the high character which some attribute to them. With us the principal recommendation is, that they are very soon fit for use; indeed, from a superior natural toughness of coat, they may be put on the hook immediately.

3110. *Water worms* are found in moist places, in sedges, and at the bottom of dock roots, and are said to be good winter baits. Captain Williamson describes them under the term water-worms, and there is a marsh variety, somewhat altered by locality, which may be so called. Our own experience as to their merits as baits not being extensive, we shall quote Captain W.: — "This is an admirable bait, and is ready for use as soon as taken, being beautifully clear, lively, and of an excellent medium size for most kinds of fishes. It is of a clear bluish white, or occasionally of a very light purple, growing more red about the head. By turning up the long slimy moss which grows on weirs, &c. over which the water does not always run, especially when the mill is going, and which is rarely covered more than one or two inches deep by the passing water, this kind of worm may often be found in great numbers. The fishes seize it with avidity, no doubt from being more habituated to it by the numbers which, when the rivers are much raised by rains, &c. are washed out of the moss into the falls below, where generally the largest and boldest fish are to be found.

3111. *The blood earth-worm* has a very different origin. We have found plenty of them in accumulations of hogs' dung, &c., and occasionally they prove excellent baits, but they require *fine* hooks and a *fine* hand to place them thereon: so treated they insure *fine* sport. We once took twenty-seven tench from a pond in less than an hour and a half with them. We should add as a qualification to our record of this achievement, that not one of the said tench exceeded four ounces, and we therefore returned them to the place from whence they came.

SUBSECT. 2. *Scouring of Worms.*

3112. *All earth-worms* are found to be more alluring to fishes after they have undergone an artificial method of treatment, the knowledge of which therefore becomes important to the angler. In large and much-fished rivers (and what large English rivers are not much fished in these days?) the inhabitants, like those of cultivated and luxurious cities, become satiated with common food. In the Thames, the Lea, the Severn, and the Wye, &c., but particularly the two former, waggon-loads of bait are annually added to the usual alimentary products of the river: thus the well-fed fish require to have their appetites pampered as much as the accomplished epicure, who looks with apathy on the meat of the shambles, but brightens at the prospect of turtle and venison; so the oft-fed fish require that the worm be cleansed from all dross, and that his dyes be heightened by artificial scourings, thus proving, that although the voracious cod, to allay the craving of its stomach, will swallow the plumb-lead instead of the bait, yet that in matters of mere taste fish are not without a decided preference in the nature and state of their food. Worms are extremely voracious, and consume vast quantities of both animal and vegetable substances; for they, like ourselves, are omnivorous. Vegetable matter they gain from the surface of the earth; animal matter is received by taking in earth itself, which is saturated with animal matter, living and dead. When worms are first taken they are usually gross with intestinal matter, and soft by the increased secretions of their bodies. By purging them from the earth they contain they are rendered more *bright*, and on being cleansed from all feculence, they prove much more palatable to the fish. As this process of cleansing promotes absorption of superfluous moisture, they also become thereby firm, or, as it is termed, *tough*, which is of much consequence to the fisherman, since in this state they are more readily retained on the hook.

3113. *The process of worm scouring* is somewhat mechanical, as well as medicinal. By insinuating themselves, in their attempts to escape, between the fibrous parts of hard vegetable substances, they compress much excrementitious matter out of their bodies. Sound moss is the best scourer, as being a matter that is in a state midway between dry and moist. If the scouring matter, whatever it is, be too moist, the worms' breathing pores are stopped up, and if too dry, the same effect follows, still more speedily.

3114. *Having carefully freed a quantity of such moss* from grass, &c., but particularly from thorns, moisten it, and put in a sufficient quantity with the worms, which in three or four days will be properly scoured, appearing then brighter and more active than when first taken. They should during their scouring be examined daily, and those which are injured and diseased ought to be carefully separated from the rest, or all will participate in such injury or disease. Some anglers hastily scour their lob-worms by plunging them into water for a few hours, and placing them into moss afterwards.

3115. *To preserve worms for use.* Shred some hard fat without a particle of salt in it; suet is the best, and mutton kidney suet best of all. Having chopped it into small pieces, and thrown it into a saucepan containing about a quart of water, let it boil slowly, until the suet is dissolved; and then having ready some well-washed hempen sacking or wrapper, that has not enveloped anything noxious, dip it into this liquor. When well soaked in it, and having become cold, then mix some fresh mould with the worms, and put the whole into a deep earthen vessel, or small tub, which is to be preferred: into this pour a good stock of marsh, or red worms, and over the top tie a cloth that will admit air, and yet prevent their escaping; place them in a cool situation, and the worms will feed and cleanse themselves, and keep lively and fit for use for many months. We would observe, however, that if the angler have different species of worms, let him keep them in separate vessels, so that he may at any time select the sort and quantity necessary, to be placed in moss preparatory to his using them. (See Salter, *on the Keeping of Worms.*)

3116. *The slug* (*Limax*) is occasionally used as a bait for fishing. It is a molluscous animal, of which there are sixteen British species, and probably all have been sometimes employed as fish-baits, but the white (*L. alba*), and the large black (*L. ater*), as well as the common field-slug (*L. agrestis*), are those most usually met with, and therefore most likely to be used; for we are not aware that they have ever proved sufficiently attractive to become much in request. The white slug has occasionally been taken by chub and perch; and the large black slug, when cut open so as to expose its whitish inner substance, has been gorged by jack, large chub, and now and then by trout also. Barbel, also, have been sometimes taken, as we have heard, with the large white slug.

3117. *Shrimps are most excellent baits* for all fish frequenting docks and waters which meet the tide. In such places shrimps are often found in abundance; and there perch are more readily taken with them than by any other bait whatever. To prove successful, however, it is necessary that they should be alive, or very newly killed.

CHAP. VII.

INSECTS USED IN ANGLING.

3118. *The study of entomology*, at least so far as regards a popular acquaintance with the forms, habits, and changes of *insects*, may be with considerable advantage recommended to the angler's notice. It is not only that his opportunities might continually stimulate him to such inquiry, but the prosecution of it is also blended with successful practice, which is in no small degree dependent on entomological knowledge. In a philosophic point of view, angling has hitherto been confined to the mere ensnaring of fish, and so little has science entered into the sport, that the practitioner has mostly contented himself with the names of caddis, gentle, and fly, and has remained as little mindful of the vast field of interest open before him, as the fish that swallowed the one, or rose to the surface for the other. Were it otherwise, how much higher would our art rank than it does at present. We can figure to ourselves few pleasanter tasks than to open if it were only the title-page of angling philosophy to an inquisitive Venator. To wet a line with such a one, we might be tempted to assume the character of Piscator, and thus accompanied, to sweeten our travels and our toils by forming interesting intimacies with the numerous natural objects in our progress. Or were we gifted with the didactic powers of the author of *Salmonia*, we might adorn ourselves with the cloak of Halieus, and call around us the kindred spirits of Poietes, Ornither, and Physicus, to listen to our tale. Be assured, brother angler, that if you will furnish yourself with the *Entomology* of Kirby and Spence, and apply yourself to the study of this science as there unfolded, you will be amply repaid, first by the piscatory knowledge imparted, and next by the wide field of interest and amusement it will present. It was our original intention to have offered a general outline of entomology to the angler, but our present curtailed limits will not permit it. Our wish, however, to press on the angler's notice the benefits of this study remains the same, and we again recommend it to his consideration.

Sect. I. *Coleoptera, or Beetles, as Angling Baits.*

3119. *The cockchafer* (*Melolontha vulgaris*), also called May-bug, dor, or dummador, is so well known as to need no portrait. It appears towards the latter end of April or beginning of May in immense numbers, and continues a few weeks. About July a smaller species likewise comes abroad, differing chiefly in the size. It is the larva or caterpillar of this beetle which forms the sand or white worm bob.

3120. *The dung-beetle* (*Geotrupes stercorarius*), known also as the evening beetle, is the large humming insect which flies round us on the decline of day, and may be observed settling on the new-dropped dung, under which it insinuates itself, and from thence makes its way into the ground to deposit its eggs. Hither also it retires on the approach of cold or wet, a fact important for the angler to know, as he can, by turning up the dung, and observing the holes in the earth, follow them by a spade, &c., and perhaps in doing this he may also turn up others at the same time, as it is the habit of two or three species of this family of beetles, when they descend, to carry down pellets of dung with them, into each of which an egg is deposited as a nide for the future larva or grub. The beetles that have this habit of laying their eggs are all found to be good baits for dipping or daping. The green garden and the golden bronze beetles are only the male and female of the *Cetonia aurata*, found in our gardens under the roots of our bulbous vegetables, and in potato grounds, &c. &c. Some anglers prefer these to all others. The order of *Coleoptera* is the largest of all, containing upwards of 3,500 known British species. Some anglers, favourable to using beetles as fish baits, will not use them until they have taken off the elytra, or hard case, which covers the membranaceous wings; but we have not observed that any benefit was gained, but rather the contrary effect arose from the practice; particularly when a large black beetle, which is a famous chub bait, was so served and dipped with; for under such circumstances, neither chub nor trout, although the latter are equally fond of it as the former, were on the alert to seize it; but, on the contrary, after a slight view, they left it. The bronze or copper-coloured beetles are often preferred by fish to either of the others, more particularly by chub. In a warm lowering day, when chub are heard to smack the under surface of the large dock leaves as they spread over a piece of still water, then this beetle will usually be taken by them very freely. When there are sharp streams, before you approach them too near, begin to fish just over the bank, and advance gradually until you can fish the stream throughout; to do which, begin at the top, and fish it regularly down, throwing your bait very lightly across it, letting it go sometimes just under the surface, at others about midwater, particularly in the deeps, and between weed beds.

3121. *On arming a hook with a large beetle*, we differ from some anglers, and propose that the bait be passed upon the hook *head foremost*, so that in dipping it on the water lightly it may be made to imitate the attempts of the insect to rise again. We also recommend that the beetle be placed crosswise on the hook, as the most showy and natural mode of displaying it. Beetles may be preserved for a long time in a box with light mould; and if it be known what trees they frequent, put some of the leaves or small branches with them.

3122. *The small beetles*, as regards the angler, may be divided into the round and the elongated. Among the former we might reckon the *Hister*, *Chrysomela*, *Cassidæ*, *Coccinella*, &c. &c. These are all represented artificially by the palmer-hackle, which has been by some authors erroneously named a buzz-fly; but the real buzz-fly is, or ought to be, a bombylius, or species of bee-fly: such without doubt it was originally intended to represent. The round and short beetles may all be used with advantage by whipping with one at a time on a very fine hook. If dipping be employed, it is prudent to use stronger tackle, and to put two on the hook.

3123. *The artificial representatives* of these varieties are dressed under the names of Marlow-buzz, palm-fly, hazel-fly or Welchman's button, the fern-fly, shell-fly, shorn-fly, &c. &c.; but little agreement is to be observed in the accounts.

3124. *The elongated beetles* are *Cerambix*, *Cantharis*, *Elater*, *Cicindela*, *Staphylinus*, *Leptura*, *Forficula*, &c. &c. They are also used with success occasionally by whipping, but more frequently they are employed in dipping. They are not, however, favourites with many anglers: we must, however, except the *Telephorus*, from whence we obtain the favourite case-winged orange-fly.

Subsect. 1. *The Grasshopper* (*Gryllidæ*).

3125. *Of the value of the grasshopper* to the angler we can speak in terms of commendation, as a most tempting bait for chub and grayling. Mr. Daniel says, "Grasshoppers from June until September are to be met with in every pasture field or meadow, especially in a hot dry summer, but most plentiful in a kind of old, short, mossy grass; the middle sized and the *greenest* are the best, and may be carried in a box with a notch cut in the edge, wide at top and narrow at bottom, which, by lifting up the box-lid gently, leaves just space enough for the grasshoppers to creep out, which they will do separately: some take off the legs in baiting with them, but they answer better whole if properly placed to stand on the back of the hook, which should be entered under the head and lodged in the body. This is a *fine and tender bait*, and is eagerly taken by many kinds of fish in clear streams about mid-water, with the hook No. 6., a fine gut, and one small shot. With grass they may be preserved as directed in the caddis."

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DIPPING WITH GRASSHOPPER.

3126. *The most effective method of using the grasshopper*, particularly for chub, we have in our own practice found to be (when these fish are known on a very hot day to be basking under the surface of the plantain or water-lily leaves (*fig.* 503.), their situation being marked by a kind of smack they give every now and then with their mouths applied to the leaves), to let a hook with a grasshopper fall on any one of such leaves from whence the sound issued. Draw the grasshopper to the edge of the leaf, and as it rolls into the water it is ten to one but it will be taken by a chub. In this way in some ponds at Godalming partially shaded, we have in the brightest days in July had most excellent sport. The cricket (*Acheta domesticus*) serves the same purpose, but is we think very inferior to the grasshopper.

3127. *Even the white butterfly* is used with some effect as an angler's bait. It must be carefully hooked and either daped with or delicately thrown on a part of the stream commencing an eddy. and is then likely to be taken by a trout. The *sphinx* or hawk-moth is also a favourite evening bait with some anglers: these insects fly fast, and are the largest members of the order, and appear to hold an intermediate station between the butterfly and the moth: they fly earlier in the evening than the latter, and are exteriorly marked with a characteristic spot on one or both wings; and their caterpillar or larva is distinguished from that of the moth by a remarkable spine or horn at the tail. The Burnet *sphinx* is met with in hot summer days towards August in great numbers, flitting about in the meadows with a short and feeble flight from stalk to stalk. It is somewhat less than the Orl-fly; its upper wings oblong, of a dark shining green colour with blood-red spots; the under ones a vivid red with dark green edgings. This is *Anthrocera filipendulæ*.

Subsect. 2. *Moths as Angling Baits*.

3128. *The mealy white*, the *mealy cream*, and the *brown moths*, Nos. 39, 40, 41, of our artificial fly list are derived from the various *Bombycidæ*. The *H. humuli*, *T. pronuba*, and others, in their living form, will take fish, and also if artificially made. We are inclined to think that the peacock-fly of some anglers is derived from the larva of the Drinker Moth (*Odonestis potatoria*), which is abundant in early summer upon coarse grass, in damp places especially, and must often fall into the water, on being stung by some Ichneumon fly, and from other casualties. However, the iridescent hues of the peacock's feather are suggestive also of the beetle tribe.

3129. *The neuropterous, or lace-winged insects,* derive their name from their four transparent reticulated wings. At the tail they have often appendicles in the form of pincers, but no sting. The order contains six genera, most of which, as being decidedly aquatics in their immature state, and remaining almost affixed to the margins of the waters which they frequent, are interesting to the angler, and no less important by the use he makes of them.

3130. *The dragon-flies,* which are of the *Neuroptera,* do not offer many subjects worthy of the angler's notice as baits. The small slender bodied *Libellula,* and a few others of the same size which have closed wings, are occasionally preyed upon by trout and chub. The larger are likewise sometimes taken by salmon, but as they affect more quiet waters, they are not likely to present themselves so often on the rapids haunted by trout and salmon as many other insects. Still as they form a very distinguishing fly on the lakes of Wales and Scotland, and are models of some of the showy salmon-flies used among northern anglers, they are of some consequence to the fishers of distant waters. When used for dipping, some anglers shorten the wings and curve the body on the hook; in this way, in the Severn and the Wye, the largest chub are taken.

3131. *The Ephemeræ,* or Mayflies, are among the most important living baits to the fly-angler, as the worm is to the bottom fisher. These beautiful insects appear to be the favourite food of the trout and grayling, and are as nutritious to them as beef and mutton are to us, giving extraordinary strength and vigour to their frames, which is proved by the difference which appears between those trout and grayling, but particularly the former, that feed on them, and those trout and grayling that live where these insects are more sparingly bred. The day-flies, as they are called, are not however strictly ephemeral, for some live but an hour or two. They are produced from larvæ which inhabit rivulets, brooks, and the lesser rivers; and which, having become nymphæ, crawl to the water's edge, where they quit their coverings, and commence their existence as winged insects. Yet feeble and weak with this great change, they have once more to quit the dress they have but just assumed for a full birthday suit, and completely developed organs. They now leave the water's edge, and seek the neighbouring trees or bushes; where, strengthened by the warmth and light of the sun, they pass from the *Pseudimago* to the *Imago,* select a mate, consummate their nuptials, and deposit their impregnated ova in the waters from which they so lately emerged. These various processes are all gone through in some species within the hour: some others are allowed two, three, or more hours of transient existence. In a very few, life is prolonged to a second or third day; but the greater number never see the light of another morn. Their existence usually terminates on the spot that witnessed their birth; and the same pool which found them life receives their last remains; for after the exhaustion occasioned by depositing their eggs in the water, they usually become so enfeebled as never to rise again, but either are swallowed by fish, or are washed to the bottom of the stream.

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EPHEMERA AND LARVA.

3132. *This limited existence* is in accordance with the wisdom and beneficence marked in the whole round of animated nature. Nor is a short life assigned to the insects themselves; they have already lived under other habiliments, most of them a year, some two years, and it is affirmed that a few varieties exist even three years in their aquatic states. Were the lives of the *Ephemeridæ* protracted to the usual period of insect existence, the air would be loaded beyond endurance! On the banks of the Seine and the Marne, in the vicinity of Paris, the *Ephemeridæ* exhibit a singular spectacle for some days about the middle of August. For several hours after sunset they rise in such vast multitudes that they appear like the flakes pressing upon each other in a heavy fall of snow. By and by the whole surface of the earth is covered with the swarms that have fallen upon it, after having finished their short existence.

Sect. II. *The Ephemeridæ as Angling Baits.*

3133. *The angling history of the Ephemeridæ* regards their successional varieties, and therefore embraces their natural history generally. The entomological list of *Ephemeridæ,* and the angler's practical knowledge of *May-flies, duns, spinners, &c.* have never been brought into accordance. It is probable that the naturalist is ill-acquainted with some of the *Pseudimago* forms known to the angler; and it is certain that the angler is not in possession of many species marked in the British Entomological Catalogues. Of the successional races of *Ephemeridæ* our angling list will supply some account. It will then be seen that, to prevent an overwhelming influx, and yet to diffuse their advantages as food for fishes and birds over an extended space of time, Providence has ordained that they emerge from the water at various periods, the early varieties appearing in February and March, and others so late as October and even November. It is interesting to observe the influence of light and heat upon the several races. The early *Ephemeridæ* are small and dark, but as the season advances, they enlarge somewhat in size: the March brown and the whirling dun are both larger and brighter than their precursors; and though the enlargement is not marked in all, yet the alteration in colour is almost universal; the browns becoming orange and yellow; the reds turning to cream colour; and the blues from a deep tinge to a pale dun. In the warm season of May and June, we are greeted with the *E. vulgata*, or May-fly of the angler, the largest of the English species. As the summer light and heat retrograde, so the ephemeral races which follow are seen to become darker and smaller to suit themselves to the varying season, and to catch the benefit of the diminished heat and light on their absorbent colours.

3134. *The elegance of the form of the Ephemeridæ generally* cannot have escaped the angler's notice. When sitting on the waters, few insects look so elegant as the green drake, and the graceful rising and sinking evolutions of the grey drake are also very striking. The markings on the wings of March browns exhibit great beauty; and the erect position of their wings adds much to the grace of their carriage. The varieties of form in wings are not very great among the *Ephemeridæ:* the colours, however, are much varied, and the reticulated structure is in some much more prominent than in others. Some have transparent wings, some hyaline, some spotted; some are white, and others of a glossy black, as those of the grey drake. A few species differ in tint, the males from the females; all, however, are found to change their skins, after emerging from the pupa, and so pass from *Duns* to *Spinners.* The tail is a distinguishing feature in the *Ephemeridæ*, being armed with either two or three setaceous appendages (or, in angling phrase, whisks), according to the *genus: Potamanthus* three, *Baëtis* and *Cloëon* but two. In the *Ephemera vulgata*, or May-fly, they are carried in an elevated manner; which circumstance, united to the green markings of the body, has occasioned this fly to be called green drake in many places, and in others the cock-up or tilt-up fly.

3135. *The bodies of the ephemera tribe* are universally long and slender, and in some of the varieties they are beautifully marked, as in the May-fly, where the segments are alternately green and yellow; and in the grey drake, where the mealy yellow is enlivened by deep brown stripes. The little May-dun is singularly beautiful, from its bright yellow hue. Some have orange bodies and dun wings, others have dun bodies and orange wings, and some are variegated, while a numerous race exhibits blue in all its tintings. Of the importance of this family to the angler, our list will give a proof when we enumerate forty-eight British known, and remarkable species, with numerous others not so decidedly acknowledged as more than varieties. Several of these also appear again in the autumn, and may therefore be with justice reckoned twice over.

3136. *Dipping* with the natural May-fly for trout is a most killing practice. It is usual to put two on the hook at a time, by inserting the point of the hook into the thickest part of the breast of one between the wings, bringing it out a little below the opposite point in the back; the other is passed tail foremost, so as to cover the remainder of the hook entirely. In treating of dipping generally, the use of the May-fly thus employed will be enlarged on. Both the green and the grey drake are used in still and streamy waters, and so greedy are the trout after them, that from the first morning appearance of the green drake, until the grey comes on in the evening, their eagerness appears unabated. The nutritious effect of this food may be particularly remarked in the more than usual strength of a hooked trout at these times.

Subsect. 1. *The Phryganeidæ, or Caddis-flies as Baits.*

3137. *The Phryganea, or straw-bait, or case-fly*, is seen with antennæ bristly, and longer than the thorax; mandible short, corneous, arched and sharp; maxillæ membranaceous; feelers four; stemmata three; wings incumbent, hinder ones folded. The spring-flies are divided into such as have two bristly processes to the tail, and such as have the tail plain like the *Phryganea.* The bicaudated English species are not numerous; but of the united varieties known to naturalists, there are upwards of seventy. The *Phryganeidæ*, straw, or caddis baits (*fig.* 505.), only yield in importance for angling to the *Ephemeridæ*, but to them both in numbers and attractive qualities its members must give place. The popular term spring-fly, like that of *Ephemera*, has no strict reference to their natural history. For as the *Ephemeridæ* live, some much less and some much more than *a day*, so likewise the *Phryganeæ* are not all born in the spring, but fresh species continue to appear at various periods;

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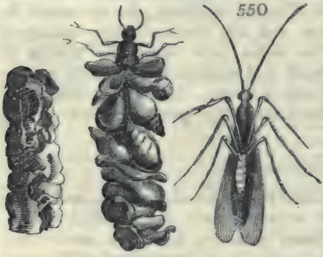

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the early spring months bringing the Early Red fly, and the autumnal season closing with the fetid brown. Thus, like the *Ephemeridæ*, they appear in successional groups, and furnish food for fishes, birds, &c. as well as sport for the angler. The caddis resemble the moth tribe in the carriage of their wings, particularly of the division entitled *Tineæ*, from which tribe it is not by ordinary observation easy to distinguish them. But the naturalist does it readily by their palpi or feelers, and by the stemmata on the top of their heads. They are also further distinguished by their wings being generally destitute of the powdery matter that embellishes those of the moth; instead of which, the wings of the *Phryganea* exhibit a curiously wrought reticulated structure; neither have they the spiral tongue of *Lepidoptera*. The spring-flies proceed from an aquatic larva, which inhabits a curiously constructed tube, in old language called a *cad-case*. The varieties of English *Phryganea* are considerable, though by no means so numerous as those of the *Ephemera*: their size is, however, usually larger. The most prominent variety is the *P. grandis*, abundant on the Thames.

3138. *The stone-fly*, which also proceeds from a water larva, presents a thick body an inch in length, of a brown colour, with yellow markings, particularly on the under surface of the belly. The upper wings are gray, speckled, and streaked with dark cloudings; the under wings are of a yellowish brown, and lie flat on the back, the upper folding over them. The habits of the stone-fly are simple: it lives but a few weeks, during which the female may be seen paddling on the top of the water while depositing her eggs. They fly little, but are seen crawling on almost every substance near the waters where they are bred.

3139. *As a dipping-bait* the stone-fly is a favourite one with many anglers, both for trout and grayling; with the latter we have been very successful by the method called sinking and drawing. It is used by putting either two at once on a hook (No. 5. or 6.), or one on a No. 7. When two are put on, we always placed them ourselves tail to tail. We have also seen them used otherwise, by running the point of the hook directly through one which was drawn up the arming of a bristled hook (No. 6. or 7.); the other was passed tail foremost its whole weight over the hook, the head, breast, and wings covering the point and barb.

3140. *The Hymenoptera, or membrane-winged, follow these.* They are all furnished with four membranaceous wings, and a mouth strengthened with jaws. Most of the females have a piercing oviduct, with which they insert their eggs within wood, and at the same time they discharge an acrid fluid, which causes the vegetable sap to produce excrescences called galls; these form a nide for their larvæ. Some of the species are provided with a sting also, which, however, is generally concealed within the abdomen.

Subsect. 2. *Ichneumon-flies as Baits.*

3141. *The Ichneumonidæ are a family of these* Hymenopterous insects, which have a curious history. They are parasites upon other insects, especially on the larvæ of *Lepidoptera*, an order which includes moths and butterflies. They received the name of *Ichneumon* with the ancients, from a resemblance to the quadruped so called, which was believed not only to demolish the eggs of the crocodile, but even to enter into its body and devour its entrails. So the Ichneumon-flies lay their eggs in the bodies of caterpillars, where these hatch and feed upon their flesh, ultimately causing their death.

3142. *As angling-baits, these Ichneumon-flies* can be strongly recommended, being frequently found in the stomachs of trout. As the providential check on the multiplication of the insect races, they abound everywhere. There are upwards of 200 British species described by Mr. Stephens of the restricted genus *Ichneumon* alone. One of the largest British species of this family is *Pimpla manifestator*. They much resemble the ant-flies in their general appearance, but may be distinguished by their vibrating antennæ, from which they used to be called *Muscæ vibrantes*, and also frequently by their *ovipositor*, or sting, at the tail. One species is figured in Ronald's *Flyfishers' Entomology* (*fig.* 39.), and forms his type for the Orange-fly, a great grayling-killer. It is a curious reflection, that but for the hosts of ichneumon-flies, insects would rapidly increase, to the inevitable destruction of man, through the destruction first of the vegetable kingdom.

Subsect. 3. *Tenthredinidæ, Saw-flies, as Angling Baits.*

3143. *The saw-fly of anglers* is drawn from this source, being a large bluff fly very much covered with hair, like the *T. Amerinæ*, without its rufous colouring. The *Tenthredo lutea* might be used with advantage as a dipping bait, from its size and brilliant colour. As an artificial fly it would also, from the circumstances of its locality, be likely to prove a very killing bait. This genus, without doubt, would furnish many other valuable types for artificial flies. The turnip-worm, bark-worm, and ash-grub, are also derived from this source, being *tenthredinous larvæ*. There is also a splendid species of *Tenthredo* of the size of a wasp, but rather thicker in its body, which is of a bright yellow colour barred with black. This, we conceive, is frequently intended for the wasp-fly by some authors on angling: it is *Allantus vespiformis*.

3144. *Sirex, or tailed wasp:* — antennæ filiform, with not less than twenty-four joints, sometimes more; palpi four; hinder ones long and clavated; mandible thick, short, corneous, and dentated: jaws ciliated; wings lanceolate and flat; abdomen sessile, and terminating either in a sting or an oviduct, which is exserted, stiff, and serrated. The larger sirex forms a very excellent salmon fly, and we think that in mountainous countries, as in Scotland, it is even more killing than the wasp-fly; it may be also dressed much larger. The *larvæ*, which measures about an inch and a quarter in length, is of a yellowish white colour, and is found imbedded in decayed firs and pines, where it is buried by the ovipositor of the parent fly: it is not unlike the larva of some beetles, but is thinner in proportion, and is furnished with a tail spine. It would without doubt prove a useful bait also.

3145. *Vespidæ* (*wasps*)—antennæ filiform, first joint elongated and cylindrical; mouth corneous, with compressed maxillæ, without proboscis; palpi four, unequal and filiform; eyes lunated; body smooth, with the sting concealed. As angling baits derived from the wasp family we may notice *Vespa vulgaris*, or common wasp, and *V. crabro*, or hornet, both of which are imitated for salmon fishing; but we much doubt whether, in northern districts, the artificial fly called the wasp, or hornet, be not drawn from the sirex, which is indigenous to countries where coniferous pine trees abound. The larvæ, or wasp-maggots, often called wasp-grubs, are also an angling bait, as will appear in our description of larvæ.

3146. *Apidæ* (*bees*).— The generic characters of this valuable and interesting insect are, antennæ filiform; mouth horny; maxillæ and labrum membranaceous at the apex; tongue inflated; palpi four, unequal, and filiform; wings aculeous, in the females and neuters concealed within the abdomen. There being upwards of one hundred indigenous species, of the value of the *Apis Mellifica*, honey or domestic bee, it is needless t treat.

Subsect. 4. *Humble Bees* (*Bombus*).

3147. *The humble bee* (*Bombus*), either artificially or naturally, is a good bait for trout and chub; for the latter it is certainly one of the most killing that can be offered. Naturally it may be used as a whipping bait, or for dipping with; and it succeeds best in one or other of these methods, according to the situation in which it is used. The varieties of the larger villose or hairy bees are numerous, but we have observed that those marked with black and orange bars appeared to be preferred. We have therefore principally confined ourselves to, first, *the large field humble bee* (*B. Lapidarius*) the female of which is much the largest, being almost an inch long; and thus it makes a most magnificent bait for chub. It is of a deep black, except the end of the belly, which is of a bright orange coloured red. The male is much smaller than the female, but is similarly marked. Second: *the ground humble bee* (*B. Terrestris*). This is another very large black variety, with a yellow barring on the back, and its abdomen tipped with a considerable portion of white. Third: *the garden humble bee* (*B. Hortorum*) is considerably smaller than the other, and has the abdomen tipped, like *B. Terrestris*, with white; but it has more yellow displayed in its barrings.

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HUMMING BEE.

3148. *Some anglers remove the wings when they use them,* which is totally unnecessary, and is also unnatural; and we believe that the buzzing noise caused by the action of the wings, and the disturbance to the water, tends, on the contrary, to attract the fish, which are on the look-out for these accidents to insects. Other anglers are equally careful in removing the sting, which we likewise believe to be equally unnecessary; but there is at least a stronger pretext for taking away the sting than for removing the wings; so those who advocate the necessity of the operation may perform it thus: hold the bee between the finger and thumb, and pressing the belly until the sting is protruded (but by no means draw it out, as that usually brings with it the intestines), cut it off close with a pair of scissors. Humble bees in almost any number may be procured from clover fields, bean plantations, &c. &c., and may be kept with flowers a few days. Bee grubs are valued also by some anglers, and will be described hereafter. Fishermen differ in their accounts of the disposition in fish to become sensible to pain from a puncture of the sting. Some experiments would seem to favour an apparent dread of the bee by fish; we will not deny the circumstance, but we will state that we have used it successfully in dibbing many times, and hope to do so again.

Subsect. 5. *The Ant-flies as Angling Baits.*

3149. *Of the ants there are two genera, Formica and Myrmica,* our different red and black ants. The former are more common in woods, the latter present themselves almost everywhere, and nowhere more than in our gardens. Each of these varieties lives in communities after the manner of bees, and their industry and internal economy will repay any attention that can be bestowed upon them. At present we only regard them as, to a considerable degree, objects of attraction to fishes from being so often found on the water, and thus thrown in their way. The societies of ants are composed of males, females, and neuters. The males and females only are winged; the neuters are apterous or wingless. The males and females appear to be gifted with wings to enable them to fly to distant places to colonise fresh localities; and it is in this travel that they so frequently fall in the way of the fish. The female ant is several times larger than the male, being about the bulk of a moderate-sized house-fly: the male is scarcely a third of the size. As this disparity exists in both communities, the black and the red, so we may thence account for the introduction of four artificial ant-flies—a large and small black ant, and a large and small red ant. We may also be guided in our choice of these by attention to the natural history of the insect. In rivers which border woody situations it is probable that the red ant will abound; and when such is the case, the prudent angler will confine himself principally to that variety; but, on the contrary, when meadows surround the waters, it will be likely that the black ant may be most plentiful, and, as such, it will be the most proper for use. And as the black is in all cases more common than the red, so more dependence is to be placed on it; for it may be regarded as a general rule, that those baits naturally most common to any situation are those that will prove most constantly attractive to fish. As baits for whipping during the time they last, they are with some great favourites; and we know they will take fish, particularly dace, and if sunk a little below the surface, roach also. As bottom baits they may likewise be used, putting two of the *cocoons* on a hook, No. 7. or 8.; of course we mean the larger sort. The season for using them is June for trout and grayling.

Sect. III. *The Diptera as Angling Baits.*

3150. *The dipterous insects* have two wings only, with halteres or balancers as a counterpoise at their base. Among the genera are, 1. the *Œstrus*, or gad-fly, which we shall pass over,

3151. 2. *The Tipula, or crane-fly, or long-legs*, a nickname which is usually preceded by some trivial personal appellation, as Gaffer, Harry, or Father, and as far as legs go they certainly well deserve the name, as theirs are at least three times the length of the body. They have two transparent wings, long and narrow, without ailerous or petty wings; instead of which they have two fine balances, with long pedicles and round heads like a mallet. In the corselet are placed four stigmata, and on the breast appear two stemmata or additional eyes, as supposed by Réaumur. Each ring of the body is composed of two half cylinders joined into one by means of a membrane, which structural peculiarity affords them room to distend or close up at pleasure. These gaffer long legs of our schoolboy days are not only common in themselves, but numerous also in their species, and hence are likely to come much in the way of fish. The smaller *Tipulæ* are even more numerous than the larger, and of greater variety; and the inference is, that they must be produced in continual successions, or otherwise the original insects must remain through the year, as it is seldom that they are not to be met with. Their intimate resemblance to gnats is of no consequence to the angler's practice, as the artificial dressing for one represents the other also.

3152. *The varieties of Tipulæ*, which may be considered as particularly worthy a place in the angler's list, are, first, the field crane-fly (*T. rivosa*, *fig* 507) measuring an inch and a half in length, with transparent wings having dusky markings. This large variety is a good daping bait as a natural fly for chub, for which two should be used on one hook. Dressed artificially it will also kill all the fly-taking fish. Secondly, the garden crane-fly (*T. hortorum*) is less than the former; its wings are transparent, with whitish variegations. The species *T. oleracea* and *T. cornicina* it is unnecessary to describe, as the artificial representations of the *T. hortorum*, or the garden crane-fly, will answer for these likewise. Thirdly, the yellow striped crane-fly (*T. crocata*) is a species remarkable for lively colours, and well deserves the angler's notice, as there are weathers and waters which would make its brilliancy useful, such as a gloomy blustering day, or a turbury water, *i.e.* one tinged by the effects of a flood. It has a polished black body, with yellow wings round the belly part of it. Fourthly, *T. plumosa*: a large variety of this species enters the angler's catalogue under the name of the spider-fly. Both its larva and pupa are aquatic. Its larva is certainly aquatic, but whether the pupa state is superinduced within or out of the water, we apprehend to be a matter of doubt; nor have we perfectly assured ourselves of the true character of this angling bait. It is still to be ascertained whether as a pupa it creeps among loose gravel, stones, and sand, to await its final change; or its transformation from a pupa into the imago or fly having already taken place, it has yet to remain some days to perfect its wings. To the angler as an angler the alternative is immaterial; but to the naturalist it is otherwise.

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CRANE-FLY.

3153. *As a dipping bait* the Harry long-legs, as this fly is called by the vulgar, is a great favourite with some anglers, who draw one on the hook from the breast upwards, so that the wings may extend themselves, while the lower part of the hook should be covered over with another. In this way chub, and occasionally small trout may be taken. Salter, who was celebrated as a dipper for chub, says, "It is a killing bait for them and trout in August and September." We agree with him as regards chub, but we think that it is not so killing a bait for trout; at least in the Thames and the Lea, where this excellent angler exhibited his skill, there were few trout to be dipped for, and still fewer to be taken.

3154. 3. *Muscidæ* (*flies*). The extent of this class may be judged of from the circumstance that in Gmelin's edition of the *Systema Naturæ*, 550 species of flies are described; which are, according to Harris, not one half of the number of English species alone. The *Muscæ* have been divided into those with two short feelers or palpi, and those without; they have also been separated into the downy or hairy, and the smooth. Dr. Shaw further groups them according to the antennæ, as being simple, or armed with hair. Mr. Walker's monograph on the British Diptera is the completest.

Sect. IV. *Flesh-flies as Angling Baits.*

3155. *Of the angling Muscidæ* it is difficult to give a correct list, so many being used by some anglers that are not common to others. We conceive that we have ourselves used twenty species, and we might have used twenty more, without exhausting those which have proved valuable acquisitions to the angler's catalogue. The early Black, No. 2. of our list, is, we believe, a musca: the cowdung-fly, No. 4. also; the wasp-fly is *M. vespasimilis*; and there are several others less legibly defined, which refer both to the practice and descriptions under vague and discordant names of angling authors.

3156. *The flesh-flies* are, *M. Vomitoria*, a blue-bottle, which forms an excellent whipping bait for dace. *M. Carnaria*, or large blow-fly, is one of the hairy or bristly muscæ; and it may be remarked of this species, that it is viviparous, and produces living larvæ instead of eggs. *M. grossa*, a still larger fly than either of these, is hairy, and has bristled antennæ. Each of these varieties may be used for whipping for dace, &c., and their size makes them also good dipping baits for trout, chub, roach, dace, &c. Grayling also may be taken with them, as we have witnessed to their cost and our gain.

3157. *As an evening bait*, a little before sunset, the natural large black flies are killing baits for chub when dexterously thrown over their haunts, under bushes, &c. As the sun goes down, the flesh-fly should be changed for the moths; first the brown, and at last the white. The angler's bait, called the gentle, as is well known, is the larva of the flesh-fly.

3158. *The gnat* (*Culex*) will engage a little of our notice. It has antennæ filiform, and approximate; in some, simply feathered; others, in whorls; the vagina is exserted, univalve, and flexible; setæ, five; palpi, two.

3159. *The gnat as an angling bait* is occasionally effective, particularly in fine waters and bright skies, and even more particularly as the second dropper under a cloudy one. The most killing artificial representations of gnats are the black, the blue, and the midge; all the other varieties also may be figured by these, provided the size and colours are varied according to circumstances, to suit species, seasons, and waters. Among these, the following appear the most prominent: — The black gnat (*C. reptans*), of a very dark colour, with transparent wings, legs marked with a bar of white. Of all the gnat varieties, and they are very numerous, this is the most common. The common gnat (*C. pipiens*) is numerous, and the most inveterate bloodsucker of all the race. Its wings are transparent; its body is cinereous, with eight brown rings: the antennæ of the male are pectinated or feathered. The next is the midge (*C. pulicaris*), which is a still smaller species, of a dark variegated hue, whose name is derived from the Swedish term for gnat: this also appears in the summer. Our limits will not admit of an extension of these, although there are many more; but as they are subordinate to these in attractive qualities to fishes, they can be dispensed with. We hardly need observe, that it is the artificial representations of these which are used by anglers. The blue-bottle, and indeed all the large *Muscæ*, or flies, are however occasionally daped with in their natural state for trout, grayling, &c. &c. They kill also even more effectively when dressed, and may be so obtained of all fly dressers.

Subsect. 1. *Of Beetle Larvæ as Angling Baits.*

3160. *Bobs, or grubs* of the angler, are the larvæ of the *Scarabæi*. The white worm-grub, earth or white worm-bob, are the produce of the cockchaffer, stag beetles, and a few other varieties of the larger beetles. Those to be favourably mentioned here are of a dingy yellow colour, with a pale red head, and the yellow hue heightened towards the tail. The largest of this species is gained from the stag beetle, but is not very common: the next in size is that of the cockchaffer, which is found in great plenty in loamy soils, when turned up by the plough; and it is to prey on these that rooks are found to follow the plough tail so closely.

3161. *The cowdung bobs, or clap baits* of the angler, are the larvæ of the stercoracious beetles, which deposit their eggs under or within masses of either horse or cowdung. These are rather less than the earth-bob, or chaffer-grub, but resemble it in figure, though they are rather darker in colour, particularly about the head: as however they are the produce of several varieties of the Burying beetles, they somewhat differ in these respects. One of them, and we think the best bait of the tribe, is longer than the others, and is the produce of *Silpha Vespillo* of the entomologist. Its length is more than an inch; its body is also more pointed at each extremity than the other; and each of its rings is marked by an orange coloured bar across its middle.

3162. *The cabbage grub* is the larva of the *C. aurata*, the golden beetle of our gardens; and the larvæ of some of the *Scarabæi*, not very unlike them, being found in similar situations, it follows that there are two or three distinct varieties of cabbage grub. They are none of them large, but have the general properties of the *Scarabæi*. The cabbage grub is used in the same manner with other larvæ for roach, chub, dace, trout, and grayling, by placing two on a hook: if they are very soft, the hook should be armed with a bristle, to retain the grub thereon; scalding will however harden them sufficiently for the unbristled hook.

3163. *The meal worm* is a favourite bait with some fancy anglers for all those fish which take the gentles and other larvæ. It is even more sought after by bird fanciers, particularly for their nightingales, than by anglers. It is the larva of the darkling beetle, or *Tenebrio molitor*, with a dusky long body, which, running quickly about our outhouses, is a well known insect. Its egg (laid always near or among provisions, particularly of the grain kind), produces the meal worm, so called from being frequently found in flour mills and mealmen's warehouses. In figure these baits are not unlike an elongated gentle, of a yellowish white colour, and being often of an inch in length, one will fill up a No. 9. hook very respectably, but two are necessary for any size larger; and as they are rather hard in their coats, our practice has been when using two to double the second on the point of the hook. They are useful when gentles are not to be procured, and will then kill the same fish to which gentles are offered if used in the same manner. Dace seem mightily taken with them.

3164. *To preserve the various bobs and grubs for winter use*, nothing more is necessary than to place them with some of the earth in which they were taken in any vessel. Some put moss with them; whether this be added or not, they should be kept in a cool situation, but free from frosts, and in this way they will gradually harden. Previous to their being used, should it be requisite to make them even more tough than they then appear, they may be immersed in scalding water a few minutes, which will have the desired effect.

3165. *In the angler's use of bobs*, or larvæ of various kinds, judgment must of course be exercised to adapt the size of the hook to that of the bait. The largest bob, or grub, will cover No. 5. hook; the next size may be placed on No. 6.; and the remainder on No. 7. It is always prudent to use a bristled hook, otherwise the internal parts of the grub will exude, and it will slip down the hook; but when a bristle is attached it stays the worm. If this method be not pursued, use two grubs, sliding one wholly up the hook, and then passing another three-fourths of its substance on the barbed portion. Occasionally the bob, or beetle larva, is used with a pair of wings, and is then drawn principally on the surface of the water, being allowed to dip now and then only a little below it: in this way it is roved with hither and thither successfully. These grubs are sometimes used at midwater as roving baits, and still more frequently they are employed in float angling. Our *North Country Angler*, the most indefatigable fish killer that ever wetted a line, by his own account at least (and there is no reason that we know of to doubt him), is not content with the destructive properties of the *bob*, which he considers an excellent bait, but he adds to it a small hackle-fly, which he hangs two feet above it. The believers in transmigration would say, that hereafter he will be seen dangling on the additional bait hook.

3166. *Father Walton* praises these baits for bream and carp. Mr. Best takes a wider field, and says they are choice baits from the beginning of November until the middle of April for chub, roach, dace, salmon, smelts, trout, bream, tench, and carp. We have angled with them, and have taken fish by their means; but as long as our gentles lasted, we never laid them aside to use bobs of any description. Mr. Salter's opinion coincides with our own, that they are not very killing: they appear to be in favour chiefly among country anglers in still waters, especially for perch. They are found in light mould, and under and about cabbages and potatoes; are very tough, and will live a long while among half-dried cowdung, or light mould.

3167. *Lepidopterous larvæ*, in popular language called *caterpillars*, are when hatched very small, but they grow rapidly, some of them to a very great size, like that of the garden tiger-moth. True caterpillars, as larvæ of this order are called, are distinguished by the number of their legs, *there never being less than eight, nor more than sixteen, in any variety of true caterpillar*. Such as have more always belong to some other order of insects. The three anterior pairs of feet which are affixed to the three first rings of the body are hard, scaly, and always of the same number. The hinder feet, on the contrary, are soft, and vary both in number and in figure. The body is composed of twelve segments; to the first the head is attached, and is hard and crustaceous. On each side of the body are nine spiracula, or breathing holes. The caterpillar experiences numerous changes or moultings, at each of which not only the skin, but the jaws, mouth, antennæ, palpi, and a portion of the head itself, are renewed also.

SUBSECT. 2. *The Caterpillar as an Angling Bait.*

3168. *The caterpillar* in angling is not only worthy of attention in itself as a dipping or daping bait, but also as a model for an artificial representative of very great importance to the fly-fisher, known in his vocabulary as a *palmer*. In olden times it was called a *palmer-worm*, after the caterpillar, which was, we presume, so designated from its roving or pilgrim-like disposition. It is however difficult to account for the present mode of dressing the palmer so short and round, as an image of the lengthened form of the true caterpillar. We are disposed to think that the palmer-fly, as it is called, was dressed as a type, not only of other small round hairy caterpillars, but also of some other larvæ, as the tenthredines, and even the hairy or silken cocoons of some small moths, &c.; for in no wise does this particular formation of the artificial palmer typify the long caterpillars of the larger moths and butterflies. Thus in Best's *Art of Angling*, which is compiled from the older works, we read, "Palmer-fly, palmer-worm, woolbed or cankers, are found on herbs, plants, and trees, where they are bred, if not a perfect caterpillar, yet undoubtedly a species thereof; they gain the name of *woolbeds* from their outward parts being woolly: these and the May-fly are the foundation of fly angling."

3169. *The true caterpillars* are extremely varied and numerous: in our gardens we find a large supply, particularly on our *Brassicæ*, or cabbage tribe of vegetables. These are mostly the larvæ of species of the white butterfly (*Pieris*), viz. *P. Brassicæ*, *P. Rapæ*, and *P. Napi*; and we may observe that no caterpillars are better for dipping baits than these.

3170. *In putting caterpillars* on the hook some nicety is required; if it be roughly done, the soft contents of the caterpillar will escape. A bristled hook also is necessary, of No. 5, 6, or 7. according to circumstances, on which the caterpillar should be threaded, passing it up from the shoulders, leaving half an inch of the tail pendent: pass or thread another contrarywise, taking care to have the barb completely covered. Inspect the bait very frequently, and change it often. We have also daped successfully with a pair of brown wings on a hook No. 5., and with one caterpillar passed up the hook to meet the wings, where a retaining bristle dressed on the hook with them should be placed (see *fig.* 508.)

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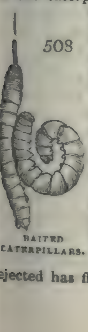

BAITED CATERPILLARS.

3171. *Neuropterous larvæ* are most of them carnivorous and are singularly agile, predaceous, and voracious. As being mostly aquatic, they are interesting to the angler; and although they do not stand conspicuously on his books as baits, they may be occasionally used as such in all their varieties, it being an unerring law in the creation, that those which prey on all around them are also preyed on by others; were it not so, their numbers would increase to an injurious extent.

3172. *The larva of the Libellula*, when burst from the egg, increases by time to half the size of a parent fly, changing its skin as it grows several times. Its head presents, like that of its parent, a curious contrivance in a kind of mask, which can be opened at pleasure, to enable its jaws to seize and devour its prey, which consists of small fishes and water insects in all their varieties. These larvæ move in the water by repeated jerks, caused by ejecting a stream of water from their own tails, which thus forces them forwards. It is to be observed however, that the water ejected has first served for respiration. They may be secured by a dexterous trawl with a landing net, but they will not live long out of the water, and without doubt they might be used as baits with a reasonable prospect of success for any of the neighbouring fish; but the trouble of catching them would not be repaid by even an ordinary degree of sport.

Sect. V. *The History of the Caddis, and Larva of the Ephemera.*

3173. *These ephemeral larvæ* as angling baits do not require much of our notice, at least they have not been often employed in general practice, and still less frequently are they mentioned in the list of baits. We have ourselves tried them as a mere matter of experiment, after having for the purpose of observation extracted them from their holes in banks, &c., but when employed it was always with dubious success. Roach and dace we found would occasionally take them, and, if we remember aright, perch also; but they were never greedily accepted by either.

3174. *The larvæ of the Phryganeæ* are the caddies of the angler, and are produced from eggs deposited by the parent on the leaves of willows, alders, and other trees which hang over rivers or pools; and to those leaves they attach themselves by a viscous secretion until they are hatched, when falling into the water they become aquatic by means of organs already prepared to assimilate with such a state. The members of the genus are very numerous, but the different species present one common character in their mode of life, though they are diversified in size and in the precise structure of their habitation. Hatched from the ovum and falling into the water, the animal instantly sets about to counteract its defenceless state by building itself a dwelling, in which it thrives and grows to maturity, and attains, in the larger species, to an inch or an inch and a half in length, when it exhibits a long depressed form (*fig.* 505.), usually of different shades, the hinder part being the lightest; the colours, however, vary in the species, from brown to greenish and dirty yellow. The body is furnished with six legs, by which, when it has thrust them out of its case, it can draw itself about with facility in search of food. To fasten the case securely to the body, most of the species have a dorsal tubercle, which retains and keeps it from sliding away with the current. In these cases they remain some one, others two, and some three years, according to their species.

3175. *The process of forming the caddis case* appears to commence thus: the animal spins a silken lining, through the interstices of which it throws out an animal glue, serving as the mortar for cementing the masonry of this outer covering. In the selection of the materials of their residence, caddies, directed by an unerring instinct, evince not only much skill, but also apparent forethought. If they occupy rivulets or running brooks, they give solidity and weight to the structure of their dwellings. If their situation be in stagnant waters, the lighter materials of vegetable origin are used; and if, accidentally, the medium they inhabit becomes changed and forms a current, they attach to their frail and light dwelling a stone as an anchor. It may be observed, that the architectural processes of the caddis, or case-worm larva, are in direct opposition to the efforts of man, who commences his building from without by raising a superstructure according to his means, intended not only to afford himself comfort, but also to excite admiration in those around him. Our minute builder, on the contrary, commences his operations on the internal furniture of the mansion, and the limits of his walls are the lines of demarcation of his own person. In this adaptation all the species are agreed; but in the outline of the domicile, and the component materials of it, great diversities are manifest.

Subsect. 1. *The Caddies as Angling Baits.*

3176. *We have already noted* the flies produced from caddis-cases, as objects of the angler's consideration, and we now turn our attention to these grubs or larvæ; and as their varieties are important objects also of the angler's notice, we have already figured the leading member of them at p. 1006., observing that the larger varieties only, as might be supposed, are in general use for daping or dipping with, such as the *Phryganea grandis*, the caddis-fly (*P. bimaculata*), the rhombic (*P. rhombica*), &c. &c. In their relative value as baits we know of no distinction among them. They succeed best in small and slow streams or ponds; the local circumstances of large, wide, and rapid rivers not being favourable to their evolutions; consequently they are seldom found in great numbers there; nor do they prove very successful baits in such situations. When they are tolerably plentiful in wide streams, they are only seen near the edges: in such waters they will kill fish, but best in the most quiet parts of them. As their food is partly vegetable and partly animal matter, such as minute insects and fish-spawn, so they are to be looked for when these are at hand, particularly in brooks, pools, and ponds. They are very often found adhering to aquatic plants; on the water-cress (*Nasturtium officinale*) they may generally be seen. The stone-fly we will again remark on as a very useful and very important fly to the angler, but he must avoid falling into a very gross error, easily induced by their appearance, which is to consider this and the May-fly as similar insects, and so to describe them, which is erroneous. Both the green drake and the grey drake are *Neuroptera*, and the same species, in the imperfect and perfect imago state. The tail appendages as seen in the May-fly, either in its larva state, its nymph state, and as a perfect May-fly, as this ephemera is called among fishermen, easily distinguish them.

3177. *The variations in the accounts* of the properties of caddies as baits are dependent on the nature of the waters they have been tried in. They have their localities as well as other animals, and are most readily taken where they are themselves indigenous. In the Colne, the Lea, and the New River, they abound, and in the smaller streams of the midland counties not subjected to violent floods they swarm also. In meres and sheets of water, where there are reeds and other aquatic plants, they likewise exist in profusion: in such waters they will take fish, and consequently will obtain eulogists.

3178. *The piper caddis* is one of the largest, and is principally met with in northern and Welsh streams, where it is a favourite bait; but it is never found except where the bottoms are limestone or large pebbles. It is about an inch long, the case is straight, and rough from being covered with sand or gravel, and is apparently a small stick, of which the pith was decayed before the insect, in its state immediately succeeding its exclusion from the egg, lodged itself. Advanced to an aurelia, which is generally in April or beginning of May, it leaves its case and last covering, a sort of skin resembling a fish's bladder (which is the method of the whole genus), and immediately, with its many legs, paddles upon the top of the water. It seldom flies, although it has four wings, which in their infant state are short, but soon extend longer than the body. This is usually called the stone-fly, and in Wales the water-cricket, from its similitude to that insect."

3179. *To collect and preserve caddies*, turn up the stones, and the best will adhere to them: when the numbers wanted are obtained, put them into a linen bag for five or six days, dip them, together with the bag, into water once a day, and hang them up; they will then turn yellow, become tough, and fitter for angling than when first got from the brook: if meant to be kept long, they must be put into a thick woollen bag, with some of the moist gravel or sand from the same rivulet from which they were taken; they must be wetted twice a day, but oftener in very hot weather: when you carry them abroad fill the bag with water, and holding the mouth of it close, let the water run from them: under such treatment they have been kept three weeks.

3180. *Another mode of preserving them* is, by placing them in an earthen pot full of river water, with some of the gravel they were bred in at the bottom; but the preceding method is preferable. Some preserve them in their native water by means of bait-pans of different sizes. Place over the tops covers of wood, or linen; if of wood, let the tops be punched full of holes, but not so large as to admit of the insects escaping when placed in the river: this treatment not only keeps them cool, but supplies them with aliment in the fresh water. Others preserve them in moss in a woollen bag on a damp floor, taking care that the bag retains a proper moisture.

3181. *Mr. Salter*, whose authority as a southern bottom angler is most respectable, is not so favourable to these baits. He expresses himself thus: "cads, caddis," or straw case-worms, are hardly worth the trouble of getting, or preserving. The fly is the stone-fly; *the green and grey drakes are similarly encased in pieces of rushes, dried stems of weeds, &c.!!*" That so good a practical angler, and so excellent a practical writer as Mr. Salter, should have been so ignorant of the natural history of the *Ephemera*, as to class them with the cad-case tribes, from which they are as distinct as the bee from the fly, can only be accounted for by the unfortunate practice of taking whatever is written on trust. "These caddies," he continues, "look like maggots or grubs, of a yellowish colour, that are found in cases, or husks of wood and stones; and those encased in rushy or weedy husks are invariably green. Case-worms, rough coats, &c. were formerly used in angling for roach, dace, and chub; but in respect to their value as baits for fishing, compared with what the modern anglers use, they are hardly worth naming or describing, yet are extremely curious as a natural production." Afterwards he says, "In the New River, and some other small streams, I have found the roach take a cad freely in the month of April; and trout also will sometimes prefer it to a worm."

3182. *We may sum up these contradictory accounts* by adding the result of our own experience, which is, that in some small rivers with little run they will kill every kind of worm-taking fish at bottom. In large rapid streams, particularly such as run over limestone, they are but indifferent substitutes for gentles or worms. In the Trent they prove singularly attractive to fish, as well as in all the streams of a similar size, which flow through clay and gravel, around the metropolis. The regular caddis fishing commences in May, and continues until June: after which time however, other caddies continue to present themselves, but they are small.

3183. *The dock or flag-worm* of the angler, is a minute caddis of the larvæ of some varieties of the *Phryganea*. The investing case is made of the vegetable straws around, and sometimes a hollowed stem is found by a larva already made, and is immediately tenanted. The caddis itself is of a reddish yellow, and exhibits the same figure and properties as its larger congeners, the stone-fly, rhombica, &c. &c.

3184. *To the angler* these offer a bait of the same nature as the common caddis, but more minute and more accessible. They may be procured without the intervention of a groping-net, and by merely pulling up some of the flags around the still parts of a river, or any sedgy pit or pool near it; for this variety can only be found in still quiet situations, and never ventures into the open water. By shaking the roots gently to free them from the soil, and then looking well into them, the cad-cases will be found adhering to their fibres. The inexperienced may not readily discover them, but by carefully examining every portion which appears tubular, and rather exceeds half an inch in length, they may be detected. If to be used immediately, pick them out dexterously with a pin; but if to be preserved for future use, proceed with them as previously directed. The early summer months are the best for employing these baits.

Subsect 2. *The Turnip Worm, Fish Grub, &c., as Baits.*

3185. *Of this bait*, found at the roots of many bulbous vegetables besides turnips, Captain Williamson gives the following accurate account, accurate at least as far only as regards its appearance and habits. For want of a due acquaintance with the natural history of insects, Capt. W. is led into the error, not of considering it as the true caterpillar, which some others have pronounced it to be, but into the more remarkable one of classing it with earth-worms. The general acumen of this gentleman makes this oversight a matter of surprise

3186. " *Turnip worms* are of a peculiar appearance, having greenish blue heads and cream coloured bodies. They are commonly found under large wide turnips, and under large potatoes ; in both of which they make holes, and occasionally seem to nestle in the cavities occasioned by their own depredations. When first exposed to view, they generally curl themselves up into a ring, in which state they will often remain a long time, without making any effort to get away. They are about two inches and a half long, and rarely stretch themselves out like other worms. These are not very good baits ; but when put into a pot with moist rotten dung, they improve a little, and may answer when more showy worms are not at hand."

3187. *Of the value of the larvæ of the wasp and bee tribes*, called wasp and bee grubs, we can say but little from our own experience. We have certainly fished with them, and as baits for slow deep waters they are valuable ; but as brains are equally efficient as winter baits for chub, and pastes and gentles for other fish, and are more readily procured, we have adhered chiefly to them in our own practice. Whenever these grubs fall conveniently in the way of the fisher, we would however advise him to toast, and try them. Extended angling habits lead to a conviction in every practitioner of the art, that the more varied his baits are, the more he accommodates his fishings to different waters, different prey, and different times and seasons.

3188. *Mr. Daniel says*, " The young brood of wasps, bees, and humble bees, may be discovered by the going in and out of the old ones. By making *wet squibs* of gunpowder, and thrusting them late at night into the hole or place where the nest is, and setting them on fire, the old wasps or bees will be smothered, and the combs containing the young, covered with films, may be taken without danger of being stung. From the comb no more should be removed than are at any time wanted for present use. Some boil them, for immediate use, three or four minutes in milk, which will make them stick well on the hook ; but if kept above three or four days after boiling, they will turn black." *Toasting* the cake is better.

3189. " *The young wasp, or bee grub*," Mr. Salter tells us, " is an excellent daping and tripping bait for trout : this maggot is much like the common gentle, but considerably larger : use a No. 8. hook, put a good bunch of them on at a time, and let them swim down the current, touching the bottom." We can vouch for this being good practice in Middlesex, Essex, and Hertfordshire ; and also in the trout streams of Derbyshire.

3190. *The blow-flies* (*M. vomitoria*) deposit their eggs on animal matter either putrid or fresh. In a few hours the larvæ or *gentles* are hatched, and when full grown, which happens in eight or ten days, they are of a white or yellowish white colour, with a slight tinge of pale red, and of a lengthened shape, with a sharpened front in which the mouth is situated, and from whence the body gradually enlarges in size to the last or terminal segment, which is of a very broad and flattened form, surrounded by several slightly prominent tips, and furnished with a pair of dusky specks resembling eyes, so that an inattentive spectator might easily mistake this part for the head, and the proper head for the tail. When this larva changes to a chrysalis, the skin dries round it, and the whole assumes a completely oval form and reddish colour, which soon changes into a reddish brown. In ten days more, the fly itself emerges.

Subsect. 3. *Gentles as Angling Baits.*

3191. *To the angler* the larvæ of the blow-flies are highly important ; and it is somewhat singular that they are so, seeing that the animal from which such larva proceeds is not aquatic, and that under ordinary circumstances it is not likely that its larva should reach the water ; for a carcass, if thrown into it, before it became fly-blown, would certainly never produce maggots there. It is even very questionable also, whether immature larvæ would attain perfection under water.

3192. *To procure or blow gentles*, nothing more is necessary than to expose any animal matter, such as a carcass or portion of one, either fresh or putrid, within the reach of blow-flies during the spring, summer, or autumn months, and the gentles will appear on it in a very few days. There is some fancy among anglers about what animal matter is to be chosen for the purpose ; and as the larvæ certainly feed on it, so, *à priori*, we might suppose some kinds would prove more nutritious than others, and thus produce finer gentles. Under this view we are not certain that such is not the case : reasoning generally, it might be alleged that, as instinct is more unerring than reason, the parent animal would choose no situation that was not adequate to fulfil her intentions of rearing her young to maturity. There are other circumstances however, favourable to their full development or growth, which may somewhat influence our choice ; the principal of these are moisture and seclusion. For this purpose we gash the liver which we hang up, that the fissures may remain moist, and afford a nestling place for the young larvæ. The head of an animal, as of a sheep, &c. ; or the whole carcass of a smaller animal, as a fowl, is also good as offering protection and covering to retain interstitial moisture. From tallow chandlers and fellmongers gentles may be procured ; and where the supply can be always secured, this is a ready and convenient market ; but where they are not always to be had, it is better for the angler to use himself to *blow* his own gentles, as his stock is easily kept up, and disappointment certainly avoided.

3193. *To preserve gentles after they have been procured* is the next step, and here two or three obligations occur. The first is to prepare them for use ; the next is to preserve the supply. To prepare them for use is nothing more than forcing from them some of their internal and external secretions, by which their coats become more dense, or, as the angler expresses it, more *tough*. This is first promoted by removing them from the breeding vessel into a more confined situation, with a mixture of sand and oatmeal or bran, either dry or moist, as it may be desirable to hasten or retard the process of pupation.

3194. *To prevent gentles from turning* is therefore, of course, nothing more than to retard the process of evolution ; and this, from what has already appeared, is best effected by giving sufficient room to keep them cool, and thus prevent their hardening and drying.

As heat hastens their change more than any other agent, additional cold may be given by the choice of the situation they occupy; when, therefore, the angler takes gentles with him for several days' use, he should inclose them in a wide tin with wet sand, and give them every advantage of being kept as cool as possible, and if he can lower the vessel down a well, to within a few yards of the water, his end will be fully gained. Some of the gentles may be previously separated from the rest and placed in bran, or in oatmeal, for immediate use. When a pretty long expedition is meditated, as one of two or three weeks, the gentles selected should be of two sorts, some fully evolved, and others green, as it is termed, that is, hardly full grown: two days' keeping in bran in a warm situation is sufficient scouring for the former; to the latter a thin slice of beef or mutton, or a small fish, may be put, when in their moistened sand. The vessel in which they are kept should, of course, be placed in a cool but not in such an intensely cold situation as the well: as the gentles from this store become full and plump, they may be removed to the other for scouring. Gentles *succeed* the wasp-grub in autumn and early winter.

3195. *The different states of gentles* are found to be acceptable to different fish. It is said, and our own experience justifies the assertion, that barbel, chub, carp, and tench prefer them green or unripe, as being more full of flavour and more highly scented. With regard to barbel and chub, we are fully convinced that gentles are more relished in their early states; and we were so prepossessed with this opinion, that in our later fishings we purposely supplied ourselves with green gentles; but we confess we have been at a loss to discover any sharper avidity in carp and tench for these in preference to others. Roach, dace, and bream are evidently more partial to the scoured gentle. Mr. Daniel cautions sportsmen against throwing away their gentles when on the *turn* (which is known by their alteration of colour and loss of activity), for roach and dace, he observes, will frequently take a red and a white one that is turned and a fresh one together, in preference to any other bait: grayling always take more readily the largest and best-scoured gentles; and our experience convinces us, that it is impossible to be too particular with regard to their state, &c., as baits for these fish.

3196. *To preserve gentles through the winter months* is a very important consideration for the angler. In the neighbourhood of still and deep rivers his roach fishing depends principally on them; and in the bends and deeps of the more rapid rivers which afford grayling, he is equally indebted to them for his principal sport and his largest fish. In September or October, the later the better, so that the parent fly is yet abroad, which will much depend on the season (we have seen the flesh-fly active in the early part of November), allow either the carcass of a fowl or rabbit, a sheep's head, or a portion of liver, to be well blown. Procure a butter tub, or, in preference, a stout long elm box (our own was one foot wide, one foot and a half deep, and three feet long); into some such vessel put sifted mould moistened and mixed with dried and pulverised cowdung: horsedung, swines' dung, or poultry-house sweepings, are less eligible as being heating, and thus tending to push the evolutions more quickly.

3197. *With this mixture* half fill the box and very lightly press it down; put the carcass and the blown gentles together into it, strewing them over with some of the same compost; as the mass sinks fill it up with the same, and press it at last moderately as the gentles will find their way to the bottom. This box may then be placed in any outdoor cool situation, and the mould at times be slightly moistened; or it may be buried a foot or two in the earth, if convenient, and will then require no moistening. The advantages we derived from a long box were, that we could turn up the earth in it at one end to procure the gentles we wanted, without admitting air or disturbing the whole mass; and what was not of slight cousequence, without being disgusted with the sight of the rotting carcass. It is of course some trouble to uncover the box when buried, but in this case the trouble is amply repaid by the cleanliness of the process, for the earth prevents any effluvia from annoying the angler in removing the gentles, and once a fortnight will be sufficient to effect this. During the early winter months fresh supplies may be added to these, as they can be obtained from the holes and corners of fellmongers' yards, the melting-houses of tallow chandlers, or the killing houses of the knackers in London, and collar makers, huntsmens' lodges, &c. in the country. Neither is all this trouble necessary but to the country sportsman, for the London anglers can usually supply themselves the year through with gentles from fishing-tackle shops, and also from the knackers or horse killers, where some of the finest may be procured, although a prejudice exists against them when thus obtained, which is fostered by the regular venders, who affirm that they are only fit for ground bait. The idea is indeed *ground-less*, for when *duly prepared* these will be found for barbel singularly attractive, and for all other fish also they appear nearly if not quite equal with those procured from any other source. Of the value of gentles as a bait but one opinion we believe exists, or we should not have dwelt so long on them; neither are they a local bait merely. Through all the districts we have travelled they are highly prized for all winter-taking fish, roach, dace, and grayling especially.

3198. *We cannot pass the water-cricket* without some mention, although our faith in its virtues as a fish bait does not equal that of the *North Country Angler*. Remote from much intercourse with the world, and as we suppose in possession of an angling library rather less extensive than those of Messrs. Haglewood and Milner, the *North Country Angler* congratulates himself and his readers on his extraordinary *discovery* of a *new insect*, and his full experience of its remarkable angling virtues, both of which, however, had been fully treated of by Walton and Cotton nearly two hundred years ago. We mean not by this to disparage the writings of this author, or the merits of the bait: he might not be a profound naturalist, but we have no doubt that he could catch fish in competition with the profoundest philosopher, and could beat him too; and we ought therefore to be obliged to him for not withholding *the secrets of his craft* in a work which affords both information and amusement, though savouring a little too much of the poaching character. Yet we do beg leave to smile when he commences a chapter expressly dedicated to the history and virtues of the "Creeper, or Water-cricket," after the following manner: — "I am not so vain as to think that no other anglers have made such useful discoveries and improvements in the art of angling as I have done; however, as I have not heard or read of any such, I shall, for the benefit of society, inform my reader how I came to know this bait, and how I fish with it." Mr. Daniel, who holds our author in high estimation, under the designation of an "Experienced Angler," but who unfortunately gives us his blunders as well as his excellences, thus echoes his further account of this newly-discovered creeper! Have any of our readers a remembrance of the caricature of *cracking* a *joke*—verbum sat? "The water-cricket or creeper, it is an error," says Mr. Daniel, "to suppose is the same as the cad-bait; for though generally found by the water-side, the latter is always in some kind of husk; the creeper never; nor ever has wings, and cannot, therefore, be the stone-fly: it may be kept in the same way as the caddis!" Stone-flies are, indeed, in particular waters, killing baits; but unfortunately, even where they are found in the greatest plenty, they do not continue longer than five weeks; but about the middle of May they take wing, and for a fortnight or three weeks, while their wings are growing, they may be taken, and by nipping off their long wings, may be fished with as the creeper. It is best to gather them fresh when going to use them immediately, although they may be kept two or three days in a vessel immerged in a shallow stream near the water's edge, where they are to be found; but in catching them the person must be nimble, as they conceal themselves very quickly in the sand or gravel, or under stones. Trout are observed to thrive much and come into colour during the season of the stone-fly.

3199. *Mr. Salter's opinion is very favourable to the stone-fly:* he says, "The stone fly, water-cricket, or creeper, while in the state or form of a maggot (we wish Mr. Salter had stated the grounds on which he also considered it a pupa) escapes from the husk or case before his wings are sufficiently grown, so as to enable him to fly, and creeps to the crevices of stones, in which places he may be found, and from which circumstance his name is derived. These insects are found in almost all trout streams or stony rivers, and are known by most anglers for trout as killing baits." Mr. Salter afterwards says, "Although the May-fly is certainly the most general killing fly, yet the stone-fly is found to be the best in some few places, more especially about Carshalton, and also in very stony small rivers: these flies are the best, either natural or artificial, and can be used until Midsummer in most waters." These entomological lapses do not, however, at all lessen the value of Mr. Salter's accounts of the killing properties of this bait.

SUBSECT. 4. *Living Baits from Fish, Frogs, &c.*

3200. *This account,* as far as regards fish, will be confined to such as are used as baits in their living state, and to such immediate uses only. The individual history of each, as well as the methods of employing them as dead baits, will appear in the articles appropriated to that head. Living fish baits are of course selected from those which predaceous fish are themselves known to prefer as their natural food. They are likewise chosen from such as are striking objects altogether, and attract by a display of their brilliant colours or variegations, or, as the angler would say, show themselves well in the water. The ease with which they can be obtained also influences their adoption or rejection; it is thus that minnows, gudgeons, roach, and dace are favourite baits with the angler, as they unite in various degrees these qualities. It is supposed, in consequence of the armature of some fish, as the dorsal spines of the stickleback, the sharp opercle of the bullhead, and the fine points of the perch's back fin, that these fish are less readily taken, either as baits or prey, than the others. But as hunger breaks down stone walls, so it blunts these spinous processes in the apprehension of the fish which devour them. It must however be allowed, that whether it arise from these or other circumstances, the spine-furnished tribes do not seem to be sought after with such avidity as those that are spineless. To remedy this, anglers cut off the offensive spines; and with many the practice is thought to succeed in removing all fear of them from enemies; but whether under these mutilations the wary fish may not be in dread of the armature, nothing but a long course of observation will show. Carp and tench, it may be observed, are known to be less frequently sought after by predaceous fish than many others, and yet they are unarmed, which gives us reason to believe that the others owe their degree of security more to their not suiting the taste of the predaceous fish than to any fear of taking them. There is not one of these fish just enumerated that we have not detected in the stomach of pike; but for one so found ten of other kinds have been met with. We regard it however as an error, to suppose that pike will *never* devour tench; but we think it not unlikely that these fish are less to their taste than any others of the cyprinus genus; for we do not remember more than one or two instances of the remains of tench being found in a pike's maw. Perch fry are devoured by them occasionally without mercy; and those of four or five ounces are not safe when other fish are scarce.

3201. *The size of living baits* is, after the *quality*, the next important matter for consideration. A large bait is certainly the most alluring, to pike particularly; but in a dexterous hand small baits will kill most fish. It is less the size of the fish than the capacity of jaw that is to be considered, in their avidity for quantity; thus a jack of five pounds only can pouch a roach of half a pound, when a perch of the same size could hardly swallow one of two ounces. Perch always prefer small baits, and are dainty respecting their condition also. Trout are able to take one much larger, we think, than a perch; and we recollect a trout of two pounds only, at Uxbridge, gorging a very large gudgeon, with which a friend was roving for jack. The use of live baits in general requires a float; when they are used without a float they certainly insure more exercise, but they also require more skill and attention in conducting the process. Perch are very frequently taken with a live bait, particularly by a minnow: trout are not so often taken in that way.

3202. *Live baits to be successful should be suited to the place fished in.* It would be unsportsman-like to offer fish baits not natural to the water. A shrimp in Dagenham Breach would be a tempting bait to a perch, but in Wittlesea Mere it is more than probable it would be refused; and the small frog which might take fish in this place would not be so well relished at Blackwall Docks. Pike in pools will take dace and trout, but none other of the predaceous fish would touch an unnatural bait. Live baits are seldom well taken at the bottom of any deep waters, but particularly of still ones. In deep streams with much motion they may be sunk lower, and kept down by means of lead. The tendency to rise to the surface is the greatest inconvenience in live bait angling. In very shallow waters live baits are altogether inadmissible; but a *dead* minnow may be spun in the shallowest water if it be sharp, or it may be dropped in on a gorge-hook even with a chance of success, such advantage has the dead over the living bait. For live bait fishing deep waters are preferable, the bait being sunk two-thirds only of its depth if there be motion in the water, or half way if it be still. In cold stormy weather fish retire to the bottom of the deeps, and then a living bait sunk to their own level is sometimes taken at once: but even in such cases, to insure success, keep the live bait in a gentle tremulous motion, and occasionally draw it quickly up a little, which stimulates the fish to take it, as fearing it will be lost to them. Weeds are very unfavourable to live bait fishing, and we always avoided the situations in which they abounded if we could: nevertheless, we have fished on broads where only living baits were acceptable, either for jack or perch, which broads were weedy. In these cases we always fished without a float, and kept a light hand on our bait, restraining it as it approached either the surface or the weed-bed. A quantity of very fine shot should be strung on the line near the bait in these cases, to keep it down; the minuteness of the shots will prevent them from doing so much injury as would be caused by the rising of the fish to the surface.

3203. *Live fish baits*, of every kind, should answer to their name by being truly lively. Much more depends on this than is imagined, as will be apparent on a proper consideration of the matter. When river baits, particularly those caught in sharp streams, are taken to troll with in large stagnant waters, although similar fish may abound there, and be the daily food of the jack, yet the river baits are immediately taken, and with an eagerness which shows that fish, like ourselves, instantly see the difference between the well seasoned and the ill seasoned of their fellows. This nicety is well known to trollers who frequent meres and broads, and they therefore always endeavour to supply themselves with river baits at much trouble, although the same species may be procured on the spot. If possible, therefore, let your live baits be got from the clearest and quickest streams and scowers; and if it be so necessary to success, that the baits should be of the most active and vigorous kind, it is equally requisite to preserve them so after they are taken, by keeping them cool and undisturbed; and it is particularly necessary that the water they are kept in be frequently renewed. Never remove them from the fish-kettle until the moment they are wanted, and then do not do it by the hand, but rather by a drainer-net, or ladle, as already directed (p. 989.). When fish baits are to be kept alive for an indefinite period, so as always to be at hand, a trunk should be sunk in their native waters. If this be not practicable, they should at least be put into a large tub or tank of river water. Pump or well water soon destroys them. Of the methods of procuring fish for baits we have already given some account in treating of angling apparatus. It may be added here, that the readiest way is by a casting-net, the next by a hoop-net let down in the run of the bait-fish, and small red worms tied over various parts of it will draw the fish together, when a sudden raising of it may entrap them. The last method is to angle for them, for which purpose it is always prudent to be furnished with a well assorted line or two. The stickleback is sometimes used instead of the minnow, and in some cases effectively.

3204. *The minnow as a live bait* (*fig.* 509. p. 1018.) is too well known to need an eulogium. It is less used in this state, however, for salmon and trout than for perch, and occasionally for chub. In roving for small jack and the largest perch, a lively minnow is a killing bait, affording also pleasant diversion; and for the chub, with a well-shotted line, we have successfully practised a sort of live bait sinking and drawing in deeps. Used with a float the minnow is also a good bait for *jack* in broad waters, which, although not very deep, yet, if there be a mild stream running through the centre, offer much chance of success. In such waters the smaller jacks haunt the sides from fear of the *pike* that inhabit the fastnesses, and here a minnow is such a treat to them that they cannot refuse it if it show itself well. As a living bait the minnow shines most, however, in perch fishing. On a paternoster line it shows itself with attraction: occasionally it also decks the night line, but we think it is here less valuable, as it seldom lives long enough to show to advantage.

3205. *Minnow roving* is practised as a general way for the capture of trout, perch, chub, &c. If it be done without a float, put a few shot about nine or ten inches above the hook, to keep the bait-fish down. The hook itself may enter the root of the back fin, by which sufficient hold may be gained without injury to the fish: we prefer this method to that sometimes practised of passing it through one of its lips, and still much more to that of including both lips, as recommended by Mr. Salter, which must unnecessarily harass and weaken the fish, by making it more difficult to take in water for the supply of the gills. To a single lip-hold there is less objection, and a sufficient portion may be taken, both to secure the fish and not materially to injure the bait. In this way the minnow should be dropped in here and there, wherever there may be a likely spot for sport, and which, of course, will vary somewhat according to the habits of individual fish. If our efforts were particularly directed to perch, we would choose deep holes, mill-pools, locks of canals, the sides of bridges, &c. &c. For chub, which will likewise frequently take the minnow with eagerness, it would be well to try shady holes under overhanging banks and boughs. In search of salmon try the boldest deeps; and for trout, drop the minnow into eddies and whirling pools, or the tail of a bed of weeds, &c.

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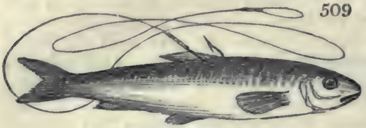

MINNOW ROVING.

3206. *In roving*, either with minnow, bleak, or gudgeon, it will be well to consider the probable size of the fish around the angler before mounting the bait. If salmon are likely to be guests, or even large trout be nigh, the gut used should either be twisted, or else it should be very strong in itself. In regular salmon roving, fine gimp is often employed; but in our opinion well twisted gut is sufficient for any other fish than jack, and it will even secure them if they are under three or four pounds. We however would recommend, that when circumstances occur to prove that either salmon or well sized jack are at hand, a gudgeon, or other sizeable fish, should be substituted for the minnow, and be harnessed accordingly, still bearing in mind a very general rule in this kind of angling, that the finer the tackle, consistent with the size of the fish, the greater the chance of success.

3207. *A live minnow in float-angling* is less common as a general bait, though sufficiently so as a particular one, when intended for either perch or jack. There is, however, this difference, that if perch be the intended prey, strong single gut is sufficient, unless the perch run very large indeed, when and when only it may be proper to use twisted gut, particularly if there be any chance of a salmon taking the bait. When jack are the objects sought after, unless they are very small, the minnow must be hooked to fine gimp, and the hook employed on this occasion should be strong, but not large. The float must be a cork one, and of sufficient size and buoyancy to sustain the minnow, and the line must be so leaded as to keep the bait from rising to the surface. The depth to which the bait should be sunk must of course depend on the nature of the water, and the fish which inhabit it: for general cases, the usual direction is to sink it to mid-water; but as this in very deep pools would be too great a proportion, four or five feet may be properly considered as a fair ratio of depth. If, in stormy weather, it be wished to sink it much lower for perch, it is but to run the float up the line, and rove with the bait without it.

3208. *In fishing with living minnows* it is to be observed, that it is not the largest that are the best baits; and let it be observed, that when they are very full of spawn they are not eligible, for they are then soon spent, and the least exertion in casting them to any distance bursts them. Choose a middle-sized one, with a silvery belly, but avoid those which are yellow or dull in colour. Trout, in particular, are extremely nice in this respect: perch, though less so, yet will be best tempted by the most perfect bait. In this angling, let the minnow fall lightly from the hand, and when it is to be cast to any distance, let it be first gently swung with a free line, to gain an impetus, and it may then be rather delivered than cast, without disturbance to the water or injury to the bait. In very wide waters, live minnow roving is ineligible, however; and it will be found here more convenient, and far more successful, to use it as a dead bait, and in what way we shall notice when treating of dead baits.

3209. *If a trout should take the bait* while thus roving, which will be known by the sudden rush of the fish, and the violence of its mode of seizure, give a second or two of leisure to the trout to turn the bait, as the smallest opposition might alarm, or any sudden check might make him feel the hook, in which cases he would instantly abandon it. The perch takes with somewhat less violence, and an experienced angler readily distinguishes between the modes of doing it by these different fish, independent of the situation and nature of the water, which will commonly assist the judgment in this particular. It is necessary to let the perch have even more law than the trout to swallow the bait, which he will not do until he has roved with it a little; therefore two, three, or four seconds should elapse, or the angler should wait until the perch has carried it away two or three yards, when he may be struck with a moderate effort. The jack will require still more time ere he be struck: his seizure will be rapid and violent, like the trout; but it is his usual course to run directly off to a distance with the bait, and the spot he issues from, as well as the direction he takes, will usually enable the angler to judge of the enemy he has to deal with, who must then be managed in the way directed under jack trolling.

3210. *In this kind of fishing*, a rod of sufficient length and strength is requisite, with running tackle, as a matter of course. We always used for this purpose one of very stout bamboo, which was sixteen feet and a half long. Many use one of eighteen or nineteen feet. It is however evident, that this must depend greatly on the nature and extent of the water, and still more on the kind of fish inhabiting it. A light rod in a good hand will kill heavy fish; and the convenience and comfort of carrying and working with such a one, contrasted with the weight and toil of one more clumsy, will make a slight risk of little consequence to him who fishes perhaps for weeks together. The loach, or loche, is now and then used in the same manner as the minnow, but it is principally employed on night lines for eels, and for trout also. In these respects it is to be preferred to the minnow, as it is hardy, and lives longer: for all other purposes of a live bait it is, however, greatly inferior.

3211. *Lampreys*, when small, form excellent baits for trout and eels; they must also, to be in place, be used on a paternoster line, or otherwise, on proper eel hooks, and laid as night lines. When cut into pieces also, the larger sorts furnish very excellent baits for eel or night lines. Lampreys for baits, we may inform the London angler, may be bought about Hungerford Market of the Thames fishermen, particularly at the Spotted Dog in Strand-lane. The blind lamprey, or *Myxine*, which is about the size of a lob-worm, is sometimes used for the same purposes and in the same manner with the former; and its diminutive size renders it in some cases convenient for live bait trolling at the bottom of sharp streams, and in this way they have with us proved as successful in taking trout as any other method.

3212. *The gudgeon* is a valuable live bait, probably the most so in all the list of living fish baits. It lives longer in the water, and preserves itself better than any other fish; and, what is of consequence, it is less inclined to rise to the surface than either roach, dace, or bleak. As a dead bait we shall have more to say on its qualities. The London angler can usually purchase live minnows and gudgeons in Crooked-lane, and at Turpin's fishing-tackle shop, close to Sadler's Wells, and likewise at Cheek's, tackle-maker, 132, Oxford-street, and at Little's, 15, Fetter-lane.

3213. *Live bait fishing with gudgeon* is practised by roving with or without a float, or otherwise by stationary float fishing. In these separate methods the principles and practice employed are nearly the same as with the minnow, except that it is necessary to use stronger tackle. If either pike or salmon are at hand, a hook (No. 4.) should be armed with gimp: more lead also will be necessary to sink the fish, and a larger float must necessarily be required to suspend both. It will indeed be prudent, on the supposition that heavy fish of these kinds are at hand, altogether to prepare the tackle in the manner detailed in treating of live bait angling for jack.

3214. *Another mode of live bait gudgeon roving* is practised by some anglers with a double or treble hook. The double hook is to be procured ready-made for the occasion, or two hooks may be firmly whipped together back to back, and then attached either to a link of twisted gut, or in preference to about ten inches of fine gimp looped (*a*, *fig.* 510.). It will be seen that a third hook is attached to this harness or trace (*b*); but which, however, is not necessarily a part of the apparatus, it being more commonly dispensed with. Having looped the gimp to the baiting-needle, introduce it under the skin a little beyond the gills, and carefully avoid injuring the flesh; guide the needle along the under surface of the skin, but rather upwards, so as to bring it out at the root of the farther end of the back fin (*c*). Draw the gimp or gut through the opening which will fix the hook as at *d*.

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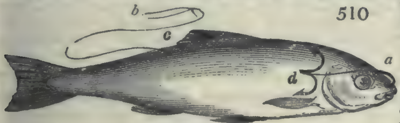

GUDGEON ROVING.

3215. *An improvement on this plan may be thus introduced.* It is found that in the use of these armed hooks, the skin is apt to be torn down by repeated castings out, which has been attempted to be remedied by attaching a short shanked hook (No. 9.), by means of a piece of gut with the whipping on of the gimp (see harness at *b*, *fig.* 510.); or, if preferred, this small hook may be attached by means of a loop slipped over the gimp. The use of this additional apparatus is to relieve the stress on the skin of the sides, by dividing the pressure; to which end introduce this hook into some part of the head of the fish, as at *a*.

3216. *It is directed by Mr. Salter to be passed through its under lip*; but we object to all interference with the mouth or gills of live baits, as they become much sooner drowned. It is a better practice to pass it over the head, and to fasten it into one of the nostrils. Where the angler is dexterous at tying, &c. we would recommend him, in forming this harness, rather to use two hooks back to back, of his own whipping, than a double hook ready made, unless it be on one shank. If he make it himself, he may let the shank of one be shortened a quarter of an inch, which, after the whipping, will then form a finer penetrating end, and will consequently lie less bulging under the skin.

3217. *It may also be well to recall the attention of the angler to the feelings of the bait-fish.* We would not affect any morbid sensibilities: we are aware that no animal sporting can be pursued without inflicting some pain, and without some appearance of cruelty; but if we are to be so convicted, let it be of the minor offence. In the ardour of the pursuit of sport we have used this mode of live bait fishing, but it savoured so strongly of impalement, that we never relished it, and at length abandoned it wholly. It certainly secures the fish more perfectly than by hooking it by the back fin merely: it also allows much more liberty and extent of roving, and is altogether perhaps the most killing method: but, when against this advantage is objected the mutual injury to the feelings of both the fisher and the fish, we think the balance will be in favour of the more simple mode.

3218. *The bleak* is much less valuable than the gudgeon as a live bait, it being not at all hardy; but it shows well in the water while it does last. Like roach and dace, when used with a float, it is not without difficulty kept from rising to the surface, and it is unusual for a hungry fish to follow it thither and to take it there.

3219. *Roach and dace are excellent baits*, but are much better as such when dead than living; however, in extensive waters, and where pike are to be found, a roach or dace of half a pound weight makes a showy and tempting lure. They are, as noted, difficult to keep below the surface of the water without a well-shotted line, which in roving is inconvenient: it is therefore better to use a float. In placing dace or roach on the hook, do it by the back fin: we have seen them fixed by the tail, which practice is injudicious, as it tends to drown the fish by drawing them contrary to their natural way of receiving water. For snap-fishing, roach and dace are good baits, and they are so for jack as well as pike, since jack will, from voracity, seize a bait he cannot swallow, and with snap-tackle the very attempt is fatal. Handle either roach, dace, or bleak, tenderly, for in arming the hook with them their scales will rub off, and they will then look diseased and unsightly to the fish for which they are intended.

3220. *The perch as a live bait* is objected to by anglers, but we believe without much foundation. As regards small perch we are certain it is so, for we have repeatedly found their remains within predaceous fish. In the Grand Junction Canal, as it runs through Hertfordshire and Buckinghamshire, nothing is more common than to find perch of two, three, and four ounces in the stomach of a jack. This fish, it is well known, mouths his prey, first seizing it across the body, and with one fatal gripe destroying any resistance: he then turns it, and leisurely swallows it head foremost. In this act the rays of the dorsal fin become compressed close to the back, and the spines, which bound its extremity, of course no longer present any thing offensive.

3221. *Large perch are without doubt dangerous prey to jack.* Mr. Salter informs us that he has seen a jack choked by the spines of a perch which stuck in his mouth; but we learn that the perch was large in proportion to the jack. This agrees both with our theory and our experience, for after a perch has attained to half a pound it is probably in little danger from a jack. Small perch, we know, are greedily devoured by jack; and it is well known, as many an angler can testify, that they make, particularly in extensive still waters, as meres, broads, and lakes, attractive baits.

3222. *The spines may be cut off to ease the fears of the angler.* We have tried them both with and without this mutilation, and have found no difference between them. When however the whole fin has been nearly cut away, as we have seen it done, we have then observed that not only did the bait swim awkwardly, and become sooner enfeebled, but that the jack themselves were less disposed to take it. A perch of one or two ounces will be found a useful roving or float bait, particularly in some waters; such we deem it, from our own experience, formed on a long acquaintance and extensive use of it, the result of which was that we never selected it purposely as a live bait, though we never failed to kill with it; but as a dead bait we have some prepossession in favour of it, our reasons for which we shall state when we treat on *Dead Baits*, p. 1022.

3223. *Small grayling and salmon-fry*, in large rivers, are both used occasionally as live baits for salmon and trout, but more frequently they are employed in trolling for them as dead baits.

3224. *Small jacks* are used for live bait both with float and without, and their unnatural parents swallow them up with as much avidity as if they were aliens the most remote. The difficulty of procuring them, however, in sufficient numbers, is a hindrance to their being often employed.

3225. *Frogs were formerly much used as fish baits*, and Father Walton has fallen into unmerited odium by unguarded expressions concerning them. We condemn any wanton infliction of pain, but we are disposed to think that frogs have not more but less sensitiveness than many other baits. We believe that a hook stuck through the back fin of a fish, gives rather more pain that that which penetrates a small portion of the loose skin of the back of the frog, or the thin web between its toes. Frogs, as long as they continue small, still remain with some anglers a favourite bait for large perch, particularly in extensive marshy waters, as broads, meres, &c. In Dagenham Breach they prove at times successful baits for both perch and jack, and for chub occasionally in other waters. Half-grown frogs, or even those that are full-grown, are employed as living baits in roving or float angling for jack and pike in wide waters: and in all cases it is observed, that the bright yellow variety best suits the fancy of every one of the frog-taking fish.

3226. *In angling with frogs as live baits*, it is necessary to recollect that they must be allowed to come to the surface to respire, or they will be injured. It is erroneous to suppose, because we see them so often under water, that they are capable of remaining there continually: on the contrary, being only amphibious, they seek the open air at intervals, like others of that class. Although there is reason to suppose, that under the pressure of circumstances they can remain long submerged without absolute suffocation, yet it is not natural, and it weakens them. During the winter months they are thought to seek the bottoms of ponds, and become torpid; but in this state they have compensating faculties to enable them to support life during the long interval of exemption from ordinary breathing.

3227. *In arming a hook with a frog*, some begin by piercing the web of the foot, some the skin of the thigh, others the back; and it is again recommended to do it by the lip. We believe it to be immaterial to what part the hook it be attached; but the skin of the back is certainly that which enables it to show itself to the best advantage in the water. Captain Williamson says, "They should be hooked through the back muscle of the hind leg, tying up that limb so as to conceal the hook a little; or you may pass the hook through the skin of the back. It will require a good weight of shot on your line to keep the frog down; but he should be brought up now and then for air, or you may keep him chiefly on the surface. In many places, especially among broad dock-leaves, &c. where the jacks lie with their noses often out of the water, and are ready to receive whatever offers (for in this manner they catch many moorhens), it is best to let your frog be on the surface."

3228. *The water-newts* (*Lacertæ*) are by no means in common use as baits. We are not sure that we ever either heard or read of their being so employed; and yet both the varieties will occasionally be taken by all those fish which take the frog. They appear to succeed only as a bait in stagnant waters, as far as our experience goes, and then are by no means a killing one; but as a water-newt is often more easily obtained than a frog, it may sometimes become an acquisition when other baits are not to be had.

3229. *The water-newt, eft, or effet*, is familiar to every person living in the country, as it may be found in almost every stagnant pool throughout the kingdom, yet its natural history is in general but little known. The angler passes it by also, because he is not aware that he can reap any benefit from it; but probably if we develop a portion of its physical history, a little more attention may be drawn towards this animal.

3230. *The larger or warted water-newt* (*L. Palustris*) is much less frequently met with than the smaller or common variety. It may however be found in the stagnant pools of Hertfordshire, Buckinghamshire, and in others of the midland counties.

6231. "*It is*," says Dr. Shaw, "*when full grown*, from about five and a half to six inches in length, and sometimes rather more: its colour on the upper parts is an extremely dark or blackish brown, the sides being marked with numerous small scattered whitish specks or granulations; the under parts are of a bright orange colour, variegated with numerous large irregular spots or patches of deep black; the tail is of a flattened form, with thin or sharp edges, and with an acute termination on each side the tail; in the male is a silvery white, broad band or stripe, accompanied by a bluish tinge — this lateral tail-stripe, as well as the dorsal crest or process, is generally far less conspicuous, and is even sometimes entirely wanting in the female: the eyes are of a bright gold colour, the head rather small than large, the limbs short, the fore-feet divided into four, and the hinder into five toes, all of which are destitute of claws. This animal is by no means an infrequent inhabitant of the clearer and colder kinds of stagnant waters, and is also occasionally met with in damp and shady situations, under trees, hedges, &c. &c.: it lives principally on insects, and though it is an innoxious species, and perfectly incapable of injuring any of the larger animals, yet it appears from the experiments of Laurenti, that the natural exudation, or secreted moisture, of its skin is fatal, like that of the salamander, to the small varieties of the *Lacerta agilis*, several of which on biting this animal soon became paralytic on the fore-legs, were seized with a general weakness, and died without any convulsive motions."

3232. *The common water-newt* (*L. aquatica*) is much smaller, and is that which most frequently falls under the angler's observation: its general length is three inches and a half. "The male," says the same eminent naturalist already quoted, "is distinguishable at first sight from the female by its conspicuous dorsal crest or process, which is broader in proportion, more strongly elevated, and more regularly sinuated than that of the preceding species: the sinuations are continued to the very tip of the tail on the upper part, and likewise take place in a similar proportion on the under part as far as the junction of the tail with the abdomen, whereas in the former species the upper part alone of the tail can properly be said to be crested. This wide process, or sinuated part, is remarkably transparent; and when viewed with a lens, of even moderately magnifying power, exhibits very distinctly the ramifications of the bloodvessels dispersed through it; but if examined by the microscope is, perhaps of all other objects that can be selected for that purpose, the most eligible for exhibiting a general view of the circulation; for it shows in the most distinct and beautiful manner the rapid current of the blood, the particles of which in this animal, as well as in the rest of the *Amphibia*, are of an oval form, not round as in the *Mammalia*.

3233. "*In the greater water-newt* on the contrary, this part being nearly opake, can by no means advantageously exhibit the same phenomenon. The female is almost destitute of the dorsal crest, but the tail is furnished with an approach to it, though far less conspicuous than in the male. The general colour of the male is olive brown, beautifully and distinctly marked with numerous round black spots dispersed over every part of the animal, but largest and most conspicuous on the sides and tail: the abdomen is orange coloured, the black spots often appearing rather less intense on that part than on the back."

3234. *The female differs very considerably in colour*, being generally of a pale yellowish brown, much less distinctly spotted, and from the want of the dorsal crest might be almost mistaken for a different species by a person not conversant with the history of the animal: on the top of the head, in both sexes, are three or four longitudinal dusky streaks, the eyes are small and gold coloured, the fore-feet *tetradactylous*, the hind *pentadactylous*. They are remarkable for a high degree of reproductive power, and have been known to exhibit the restoration of their legs, tails, and even, according to Dr. Blumenbach, of the eyes themselves, after having been deprived of them by cutting.

3235. *As angling baits*, it is not difficult to get the newts from the bottom of small stagnant pools by a sudden trawl of a fine rake, which gathering the mud, weeds, &c. brings those *Lacertæ* with them; or they may be taken by a landing net of the kind described (*fig.* 491. p. 984.). When used as living baits, they should be hooked by the fleshy dorsal ridge, and in this way, being occasionally allowed to come to the surface to respire, they will live a considerable time as a float bait; or they may be used as roving baits: they might also be trolled with as dead baits with a small gorge-hook, in which way they are frequently taken by jack in ponds.

Sect. VI. *Inanimate Fish Baits.*

3236. *Dead baits used in fishing* are almost if not quite as numerous as those that are animate. Full as our list of living baits has been, it can be equalled by dead baits, as they may be properly called, and not improperly arranged under these heads,—vegetable substances, animal productions, and imitative matters or substances. Of vegetable baits we present them with grain of various kinds and under various forms, as whole kernels, ground pastes, and mixtures: almost every one of the *Farinacea* enters our list, and vegetable pastes are varied by us without end. Our animal baits, not at the moment of presentation in a living state, are formed from almost all that has lived under some disguise or other. Of imitative matters, very extensive is the angler's list; and were he indeed punished for "taking the likeness of every matter which has lived," sad indeed would be his prospect.

Subsect. 1. *Vegetable Matters as Baits.*

3237. *It was formerly much the custom* to use fruits, seeds, and grains of various kinds in the catching of fish; and in some continental countries the custom still prevails, particularly in taking the varieties of the carp genus. In England also they were formerly fished for with berries of different kinds, particularly with blackberries, &c.; and they are still occasionally so used. To this day, likewise, angling authorities recommend cherries for chub and carp; and although more tempting baits are now known, yet there is little doubt that these and many other ripe and sweet fruits of a conspicuous colour will entice such fish at times as are more particularly attached to vegetable food. Bream, likewise, have been so taken: seeds of different plants, particularly of the aquatic kinds, have been tried with some effect; and green peas are yet a favourite bait for carp at morning dawn.

3238. *Grain has not yet lost its character with some anglers*, who use soaked barley, wheat, rice, &c., by selecting one, two, or more of the finest of the grains to put on the hook, particularly for carp fishing. It is alleged by some, that the fish mistake these for gentles or other grubs; but we apprehend it is their disposition to take farina for itself, which influences them on these occasions, and that it is no mistake of these wily tribes, therefore this bait is yet used. Beans too have, in former days, been baked for the purpose, and barley, boiled in milk and dipped in honey, that, we suppose, they might please the "sweet tooth" of these gentry! We learn also, that to increase the appetites of the capricious carp, it has been even advised previously to soak some of the beans in a solution of aloes, and then lay them as a ground bait over night in their way, presuming that after a good scouring they might the next morning be more ready to take any bait offered them. We leave this preparatory recipe or *whet* where we found it, and proceed. Barley also and wheat-bait, it is said, are in common use in some rivers of the midland counties, as in the Trent, Humber, &c., and are prepared, particularly wheat, by choosing it undried, or such as from damp is become swollen and going to burst: it is to be slowly soaked in water by the heat of a half-cooled oven, or any other means which will continue the mixture of wheat and water in a moderate but not boiling heat for two or three hours: when cold it will form a stiff jelly-like mass, in which the grains of wheat will appear suspended, but sufficiently distinct to bear separating. It is with these grains, picked carefully out whole and put on the hook in the same manner as gentles, that the wheat-bait practice is pursued principally for roach. We venture, however, to pronounce, that as a bait it is greatly inferior to either gentles or paste: pearl barley parboiled is recommended likewise as a good bait for the roach and dace of ponds.

3239. *Pastes* are sometimes made of vegetable, and some are composed of animal substances, both of which we shall describe with ground baits.

Subsect. 2. *Dead Baits from Animals and Animal Substances.*

3240. *These are varied almost to infinitude*, and we shall here enumerate those only which are most usually employed: others will be mentioned in our angling directions for individual fish. *Greaves* form a most tempting bait for barbel and chub, and also for eels. To prepare them, break a sufficient quantity, over which first pour some cold water and let it stand by all night; on the next morning pour off the cold water, and in lieu of it pour some warm, but not very hot water; after this has stood an hour or two, the parts of the greaves will separate, from which choose as baits the largest, whitest, and most connected pieces, which cover up with leaves or wrap in a moist cloth for use. When fishing, hang one, two, or three of the whitest of these pieces on the hook, concealing the point.

3241. *Brains and spinal marrow* are excellent and favourite baits with the London anglers principally for chub, though roach and bream will take them. The *pith*, as the spinal marrow is called, from the back bone of the ox is to be carefully drawn out, and the outer skin being taken off, is to be cut into appropriate morsels of the size of a nut, one of which is to form a complete covering round the hook, carefully concealing the point. The use of the brains is as an animal ground bait to attract the fish together, and to give them a relish for this kind of food: the pith being more solid shows better in the water, and is better retained on the hook than the brains, and therefore forms the best hook bait in this kind of fishing: the brains are by some strong stomached anglers taken raw into the mouth and then *blown* or spit out into the water; but a more cleanly practice, and one equally effective, as far as our experience goes, is to mix a quantity of them, carefully separated from the investing membranes, with pollard and a little sand; these when worked together become tolerably adhesive, and should be occasionally thrown in as a ground bait. This is justly considered as one of the most killing modes of winter fishing for chub, and it certainly proves to be such invariably in our southern rivers.

3242. *A clerical friend of the writer* is very partial to a snap-bait, consisting of the fat of bacon cut into the shape of a small fish, and decorated with a system of snap-hooks. With this he takes many pike, especially in the winter months, when bait-fish are difficult to procure. This bait he uses successfully in the Witham, a Lincolnshire river.

3243. *The various fish we have lately described as live baits* are all of them employed with some effect as dead ones. The stickleback, with its spines removed, may be used as a spinning bait for trout, or on a minute gorge-hook is roved or trolled with for perch, and is occasionally taken by a chub, or small jack: also the minnow, as a dead bait, is used in the capture of salmon, trout, and perch; it will also take chub and jack. As a general bait, therefore, we shall here consider a few of the methods in which it is employed, reserving others to be described with salmon and trout anglings. As a spinning bait the minnow is very successful, and indeed is the most universal in its application of any of the living ones, and with the gudgeon forms the most effective and attractive among the live baits of the angler. A concise but correct description of minnow spinning, and an accompanying cut of the tackle used, may be seen in a little book, price 2*s*., which also contains many other embellishments and much instruction, on the manufacture and use of the various tackle employed in angling. We thus notice this little work for its intrinsic merits, and also because the name of the writer has been long identified with an art in which he himself excelled. We also are desirous that it may increase the practice of this interesting and innocent amusement, the pursuit of which keeps hundreds of our London youths from gambling, thieving, and drinking, and tends to make them enterprising and attentive to one object, the want of fixing the attention being the worst habit of youth. Under this impression, we regard with pleasure the banks of the New River when studded with youths exerting their energies to ensnare the wary fish. The directions there introduced are as follows: "In spinning a minnow, by which large trout and many other fish are taken, you should use the bag rod with the perch top, though you may make shift with the other rod, if you have a stiff top to it, but being shorter it will not command so much water as the first. The winch and running line should be used, at the bottom of which you must have tackle of the following description in the room of any other gut lengthener (unless what was there before was a very strong one, when you may join this to it), the lower length of very strong gut fastened tight to a No. 1. hook with a long shank: about three inches above this you must attach a short piece of gut with a No. 7. hook tied on, so that it may hang even with the top of the shank of the large one: you may then add to these two lengths of strong gut which may be twisted, or otherwise joined together by means of two small box swivels, with one or two shots to sink it; or some use a conical hollow piece of lead to slip down over the noose of the bait, which I think is better. To bait the above, pass the large hook down the throat through the whole length of the body, and bring it out at the tail of the minnow, then put the small hook through the jaws of the fish, slide down the lead, and it is now ready to put to your line. When you make shift without the small hook, put the large one through the lower and upper jaw, drawing three or four inches of gut with it, and then pass it as before described; draw the gut tight, and it is ready. This is a very inferior way: I should not have mentioned it, had it not been that you can use it when you have not other tackle fitted up. Spinning a minnow is performed as follows: cast your bait across or down the stream; then draw it towards you for a yard or two, either against or across the current, and it will spin round; then let it sink a little, and repeat it, until it wants throwing forth again The most likely places are currents, waterfalls, milltails, weirs, &c. When at a place where you stand on an eminence, first try close to you, then let out four or five yards of line, and try again, and so on, till you have let it down the stream as far as your line will permit, which is the most likely way of taking them, as they will not bite when they see you. Some anglers use a small bleak, but I think it inferior to the minnow, except for pike or jack. I have taken chub, jack, and perch by these means. Observe, in spinning the minnow, the fish (if a trout) will mostly hook himself; but it is as well to strike the moment you feel or see a bite." (*The Jolly Angler*, p. 77.)

3244. *Minnow spinning with one hook* is thus described by Mr. Lascelles: — "Have a large hook (No. 1 or 2.), rather long in the shank, and wrap it very neatly on to your gut, which should be at least a yard in length, extending the wrapping on the gut for about an inch or a little more, which will cause it to spin the better; and to promote this still further, I would have you use two swivels: draw your hook first through the mouth of the minnow and out at the gill, then turning it again through the mouth, bring the point of the hook all the way down the sides, rather nearest the belly, and quite to the fork, drawing out the point at the tail, and leaving it somewhat on a curve, which, from the opposition it will make to the stream, will cause it to spin the better; and, to make it sink, you must have two large shots on your gut, betwixt the hook and the lower swivel.

"In throwing the minnow, considerable art is required to keep it entire and untorn, for there is great reason to apprehend damage from an unskilful performer: to prevent this as much as possible, never allow your line to go out to the full extent, lest, by a sudden jerk, you either get rid of your bait, or tear it so as to be entirely useless: your plan will be, to let it meet the stream exactly at the moment when it would otherwise gain its greatest extent of distance; it will fall much lighter, make less disturbance in the water, and altogether have a neater appearance, and be more likely to excite the attention of a fish, which, by a little playful and dexterous management, you may often entice to take your bait, contrary perhaps to his real inclination. The best time of day for this species of angling is early in a morning, in deep holes, and near the roots of trees, but especially if the water be recovering from an overflow of rain."

3245. *In this method* the turn of gut, including the whole space between the mouth and gill, is apt, when it is fully softened, to pucker draw and disfigure the fish. Were it not that the gut necessary to be used is apt to break by too close a knot, it would be much better first to enter the point of the hook below the mouth of the minnow, passing it *through* both lips, and drawing with it enough gut to be enabled to return the hook, then entering it *within*, to pass it on to the tail, as described by Mr. L. By this method a secure half hitch will be formed; and if fine gut previously soaked, or at least passed well through Indian rubber till perfectly flexible, be used, it may be practised to advantage with moderate safety. It must however be remembered, that a very heavy fish might probably endanger such strong gut as is necessary for the purpose. This disadvantage might be remedied by making use of platted silk instead of gut. These methods will again be adverted to, when we treat on the minnow spinning as particularly practised in trout angling.

3246. *The practice of minnow spinning* is equally adapted for deep still waters, and for rapid scowers. It will, however, require some skill in the angler to spin the bait effectively in still deeps, but practice and a nimble turn of the hand will effect this necessary mode of showing it; for without, the sight of the line, which the quick turns of the bait alone can hide, will almost immediately scare the fish. In shallows, the minnow will readily spin by its own resistance to the water; but it is to be remembered, that the more shallow the stream, the further the angler should stand from it; in which case it will be prudent to give somewhat more length to the line. In drawing it through a scower, let it pass smoothly to about midwater, and then imitate a minnow striving against the stream, draw it quickly upwards. Occasionally let it glide down the stream; in fact, vary the action to give every attitude which the habit or caprice of the fish is likely to assume. We shall have occasion to notice other methods of mounting the minnow when we treat of trout fishing.

3247. *The minnow used in trolling, roving, dipping, and drawing with, as a dead bait,* is mounted either on a double or single gorge-hook (*fig.* 511.), which may be procured at tackle-shops. One of these should be whipped to strong gut, either single or twisted, according to the angler's opinion of the necessity of fishing fine or strong. If jack are likely to be present, the strongest twisted gut will be required; and even that will be endangered by any thing beyond one or two pounds. But unless they form one of the immediate objects of the angler's sport, the finer the tackle the greater will be his chance of success with every other fish. Having looped the gut, introduce a minnow needle into the mouth of the bait, and

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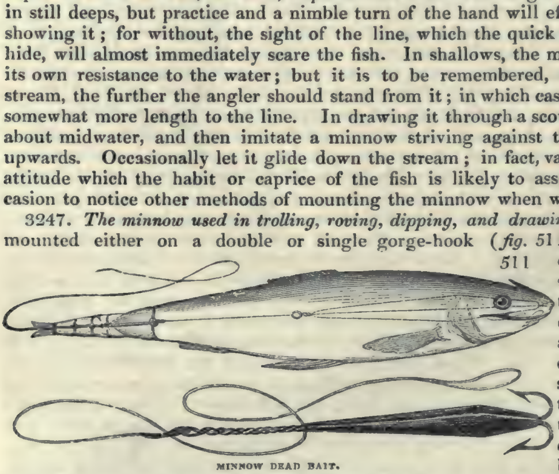

MINNOW DEAD BAIT.

bring it out at the middle of the fork of its tail. The leaded part of the hook, if properly sized and formed, will lie concealed in the belly of the minnow, and the points of the hooks or hook will lie directed upwards, close to the jaws of the bait. To keep the bait from being forced forwards on the hook, it is necessary either that it be tied firmly round the tail with light blue thread, or otherwise, which is a much neater practice, that the needle and thread be passed through the tail, first on one side and then on the other, including within the return the back bone of the fish and the shank of the gorge, and then that the ends be tied on the side first entered after the previous directions have been followed.

3248. *Swivel-traces.* The loop of the gut should now be fastened to swivel traces, which are fitted upon two lengths of picked gut, strong and even. For strong fishings twisted gut is sometimes used. These gut lengths are to be united by placing a small box swivel between them; then loop one end of the gut firmly, and to the other fit securely, but neatly, a small hook swivel, on which hang the loop of baited gut; and lastly, attach the loop of the traces to the reel line. These traces, which are to be always employed in minnow spinning of every kind, are figured with the mounted minnow, to appear anon.

3249. *The method of using the minnow* on a gorge-hook in trolling, roving, or dipping, varies a little according as one or other of these practices is pursued, premising that a similar rod should be employed both in the trolling and spinning, as that recommended for live bait minnow fishing.

3250. *Minnow trolling and roving* requires that the bait line and rod line together occupy a length equal, or nearly equal, to the rod, with the rod held firmly (about the middle of the butt) in one hand, and in the other a yard and a half of loose line drawn from the reel. Now let the bait rather swing than be cast from you in any direction you choose, delivering it on the water with as little disturbance as possible. If trout be the object, cast it beyond a current, and then draw it through, raising and lowering it as it proceeds across. If you feel a trout seize the bait, strike him after a slight pause, but not before, it being necessary to remember, that more time is to be allowed here than is requisite in live bait trolling, where the hook is usually seized with the fish, and an early stroke is necessary to fix it. The deeper pools should be tried for perch, and shady holes for chub, in all cases taking the widest range possible with the bait, and imitating in the play of it the natural motions of the minnow as much as they can be done, now quickly, and now with a momentary respite, which sometimes induces the fish to dart at it. This mode, which may also be called the *diving minnow*, has an advantage over all others for still pools, which are the situations large trout occasionally choose as a strong hold: the gorge minnow diving down into this proves often irresistible, and is taken at once.

3251. *In dipping and drawing*, the action is more confined; the line is also shorter, and the practice itself is particularly adapted to confined situations, where a perfect command over the bait is retained in the hand of the angler. The bait is to be gently dropped on the top of the water, and then suffered to go freely to the bottom, which will show it to advantage. Now *draw* it from side to side; and, by occasionally raising it to the surface, give its descent a new direction. Drop it between piles, above the first reflux of eddies, and into the centre of whirlpools, in the bends of rivers, and under the overhanging stumps and roots of trees.

3252. *Trolling, roving, or dipping* with a minnow on a hook, leaded at its shank for the purpose, will frequently secure large trout, perch, chub, and jack; and though the practice is far less elegant, it has some advantages over spinning the minnow. By these latter modes, the bait can be let down between the openings in weedy waters; or it can be cast wide away across a current, where it may chance to meet the trout or perch. In the proper situations, if fine gimp be used instead of gut, the minnow thus applied will prove as tempting a bait to young jack as the gudgeon, and we have found it even more so in many instances.

3253. *Foxing of minnows.* When these baits are not to be procured by any other means, it is recommended by Mr. Daniel to revive the old method detailed by Walton, of dosing them with small pills of *Cocculus Indicus*. The practice we leave to absolute necessity, which can alone sanction it; but that minnows so taken "are brighter, and will endure to lie longer in the water than those taken in any other manner," is totally at variance with all the analogies of poisons, which leave the body particularly liable to a more early decomposition.

3254. *To preserve dead minnows* it is now common to salt them. If to the common salt there be added a small portion of bay salt, it will harden them still more. The pyroligneous acid would, without doubt, preserve them also: and if there can be an attractive quality in tar (Mr. Daniel directs worms to be dipped in it), then the scent might not be injurious, but serviceable. It is advisable to destroy minnows as soon as they come out of the water, either by a blow on the back of the head, or otherwise by at once plunging them into salt: either of these methods tends much to harden and preserve them.

We would also recommend to the angler to try the effects of sugar in preserving them, according to Dr. M'Culloch's method, which does not differ in the operation from that of salt. It will most assuredly keep them as well; but whether they will be as firm, our experience does not enable us to state. When minnows are taken out of any such pickle for use, they should be first dried from their moisture, and then, instead of being each wrapped in paper, let them be well rolled in dry bran, which will more effectually preserve them than any other method. Many experienced minnow spinners even prefer one that has been laid in bran an hour or two to one fresh caught Putting them in wet moss is by no means a good practice. For minnows after they have been dried, a japanned tin box, not unlike a tobacço-box, is a convenient receptacle: in this they may be laid straight, side by side, but without actually touching each other; then fill up the interstices with bran, and let the box be kept in the coolest situation about the angler.

3255. *The bullhead, or miller's thumb*, is occasionally fitted up on a gorge-hook, and will then make a very respectable trolling dead bait. Eels will very readily take them as night line baits. As living baits they are entitled to little notice, although we make no doubt an experienced angler would contrive to show them to such advantage as to get a *run* from something. It is usual to cut away the spines from the angles of the gill-covers, but there is no real necessity for this; since, as already observed, the jack would take him head foremost, when his spines would lie as snug as his gills. To make all sure, these may however be cut off.

3256. *The gudgeon as a dead bait* is the groundwork of the troller's hopes; and as we shall have to say so much of it when treating of pike fishing, we shall here only hint at its general qualities as a bait; among which are its showing well in the water, and not becoming water-sopped so soon as roach and dace. Nor are the scales so easily parted with when dead as they are with them, to the injury of the bait's appearance. The figure of the gudgeon is also more adapted to receive a gorge-hook than that of any of the flat-sided fish, as bleak, dace, &c., which are apt to look distorted with a leaded hook, if proportioned to the length of the fish. With a gorge-hook the gudgeon may be considered as an almost universal bait for predaceous fish, as it is taken with equal eagerness by large trout, large perch, and pike.

3257. *To preserve gudgeons as dead baits*, it is advisable to kill them as soon as they are taken out of the water, and preserved in fresh bran, after pricking the spinal marrow. This remark applies also to all bait fish, which, if suffered to lie on the ground to die in heat and moisture, become limp and discoloured, and never again recover their brilliancy or firmness; whereas, on the principle of fish crimping, when they are at once destroyed by a momentary violence, the muscles immediately harden, and the process of decomposition is delayed as long as they remain so, which is many hours longer than when not thus treated.

3258. *A bait box* should be purposely made for gudgeons, and, as already observed by Mr. Salter, none is better than the usual sandwich-box, or one of a similar shape, from six to eight inches long, four and a half or five inches broad, and even an inch and a half deep.

3259. *Perch as live baits* are valuable to the pike and jack fisher; for, as already noticed, it is a great mistake to think that these fish refuse them. We have *trolled* very often with perch, even when roach and dace were within reach; and we greatly prefer them to others when bait fish are scarce, because they will remain three times as long without lacerating as either roach or dace, twice as long as a gudgeon, and will *show* well at last. On a stormy day of 1824, when we could only muster one small perch, we took with it three small jack on a gorge-hook. We confess it was rather the worse for wear when we unpouched it from the maw of the second jack; and had not the last jack been unusually eager, it is possible he might have paused before he ventured on the already twice disgorged bait. It is needless to say its ragged trim rendered it unfit to go any more into company. Roach, dace, chub, and bleak, as white fish, are also each of them showy dead baits on the gorge, snap, or other hooks. The flat sides of the bleak, however, are more favourable to some other modes of baiting than that of the usual gorge-hook, but a small flat leaded one, purposely made and well introduced, will nevertheless make it a respectable bait. A greater inconvenience occurs from the scales of this fish becoming loosened so soon. If, however, bleak be immersed in vinegar, or rolled in salt, as soon as killed, they will retain their scales much longer. Smelts and sprats are also used as trolling baits.

3260. *The artificial devil bait*, as it is called, has found many advocates; and strange as its representation (*fig.* 512.) may seem, it was at one time even popular, and is yet to be purchased at most fishing-tackle shops. It is formed of the most glittering materials, as tinsel, &c. &c.; and is usually studded with glossy matters. It is intended to imitate a minnow in size and shape, and its bright tire serves to make it more showy, as its bent shape assists in making it revolve rapidly in the water, and thereby attracts notice. It is fitted up in various ways, but it usually follows one or other of the manners employed for spinning the minnow, save and except the loose hooks appended to the sides, which are seen to be considerably extended out, as was the case with that we copied this from. We would however observe, that these double hooks may be lessened in number, and need not extend so far beyond the body of the effigy. We have represented it, and we have heard good anglers applaud it; but it is best for mill-tails and rapid streams.

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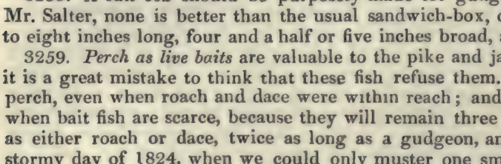

DEVIL BAIT.

3261. *The entrails of chickens* also may be so fixed on a double hook, or, what is better, they may be so drawn over a gorge-hook, one within another, as to form a taking bait for jack and pike: sewing them dexterously together will also assist the process, otherwise they are apt to loosen. Bacon cut to imitate a fish-bait of four or five ounces, and penetrated by a gorge-hook, has been not unfrequently employed against pike also. In fact, in situations where pike and jack-food is scarce, they will take almost any thing; and so it is not unusual under these circumstances to take them readily with the bacon bait and snap-hooks, as above described.

SUBSECT. 3. *Artificial animal Baits.*

3262. *Almost every animal* that fish are known to prey upon, has been imitated by man. The ingenuity of fishing-tackle makers has occasionally shone resplendent in this particular, but as frequently has failed. We might, for the sake of system, commence with artificial flies, on which we shall have much to say hereafter; but before we part from them, we will just notice the grotesque figures we sometimes meet with in the cases of some of these artists, such as beetles, grasshoppers, &c. &c. We must, however, observe, that we have been delighted with the exact resemblance shown us by others. If anglers will encourage these, they will compete with each other to produce a very correct likeness of any bait whatever. **Mrs. A. Lewis, flymaker, Hereford, excels.**

3263. *Of fish the imitations are numerous.* One of the latest inventions deserves notice for its hybrid character as a bait; with which, in our love of system, we have been extremely puzzled to know how or where to place it. If we had taken a hint from the maker, we should have been at no loss in giving it a niche with artificial flies; for it was in company with them when we first saw it. But for fear we should occasion a schism among them, it must remain where it does. It is called the minnow-fly, and is a diminutive representation of this fish, sufficiently light to be drawn on the top of the water, and in this way is said to prove a good bait for trout. It is also used at mid-water in sharp rippling streams, and is spoken highly of by some anglers. *A priori*, one might be led to suppose it only likely to be taken by trout which, particularly when they are in a capricious mood, rise at every thing: but in these humours they seldom take any thing, however readily they may rise to whatever is thrown to them. We have ourselves never used this bait; nevertheless, we are disposed to think it worthy of a trial, particularly for salmon, whose risings are thought to be equally capricious with trout, but that they more often take what they rise at than trout. After all, we however do know, that the minnow-fly increases in its reputation with many, and we therefore recommend it for trial; and moreover will, when our time is more our own than at present, try it ourselves. The common imitative minnow is made of wool, fashioned around one or two hooks; the whole is then covered with oilskin, and is afterwards painted to the life. In other instances it is made of wood or cork, and sometimes of mother of pearl. We believe that these latter representations of living minnows are now justly held in great contempt: after repeated trials we never hooked a fish with one, although we confess to have once or twice stirred a trout, and to have brought him to a rush; but further than this, deponent sayeth not.

3264. *The artificial gudgeon and artificial minnow* have recently been imitated very accurately and with very great success. The best are made of India-rubber or gutta percha painted properly. They can be bent any way, and hence are called "flexible." Mr. Flinn, of Worcester, is the inventor and the best maker of them. They kill well; the flexible gudgeon, pike, and large trout; the flexible minnow, perch, jack and middle-sized trout. Sand-eels are imitated in the same way, and are good baits for trout, and passable ones for salmon. These baits made very large, say six inches in length and thick in proportion, will kill the ***Salmo ferox*** **and other large lake trout. See *The Rod and Line* (Longmans).**

SUBSECT. 4. *Pastes for Angling.*

3265. *Pastes* are known as a species of hook bait used in still and deep anglings. Ground baits are matters which very generally accompany these and other hook baits: they are usually of a *nature similar* to the hook bait used, but inferior in *quality*. The ground bait being spread around in large quantities, is supposed to attract and congregate the fishes, which being thus called together, soon discover the superior attractions of the hook bait, and thus are lured to fulfil the intentions of the angler.

3266. *Pastes are important baits* among professed bottom anglers, who compound them with great skill and care: and the well fed fish are by these means become so dainty, that unless these pastes are continued to be worked up with perfectly clean hands and pure materials, they will fail in their intent. The infinity of articles which used to enter the paste list are now reduced to comparatively very few; but enough remains to secure every one of those fish which take a bait in this form. *Pastes* are liable to turn sour, or to become fetid; consequently much care is required in keeping them, and it is highly necessary to renew them often. It has been common to unite with the substance of pastes a little fine cotton, or wool, to make them more readily adhere to the hook; but this we believe to be seldom necessary when either bread, dough, or flour is used, if the angler will allow himself sufficient time for the kneading. Pastes are nevertheless occasionally required, and when used are usually placed on small hooks, but the size must vary with the fish baited for, and consequently the quantity of paste also. Chub and barbel take a ball as large as a hazel-nut; the latter will take even more. Roach and dace require a pellet of the size of a marrow-fat pea, and from this down to a pin's head.

3267. *Salmon's roe, and salmon's roe paste.* Barker, we believe, was the first discoverer of the extreme efficiency of this bait, although it had been well known for centuries, that one of the favourite repasts of fish was the spawn of each other; and that some do not hesitate to eat their own, or that of the same species at least. Barker's letter on the subject, as written to his patron, has been preserved, and is a curious specimen of the love of angling: —

"Noble lord, — I have found an *experience* of late, which you may angle with, and take great store of this kind of fish. First, it is the best bait for a trout that I have seen in all my time; and will take great store, and not fail if they be there. Secondly, it is a special bait for dace or dare, good for chub or bottlin, or grayling. The bait is the roe of a salmon or trout: if it be a large trout, that the spawns be any thing great, you must angle for the trout with this as you angle with the brandling, taking a pair of scissors, and cut so much as a large hazel-nut, and bait your hook, so fall to your sport; there is no doubt of pleasure. If I had known it but twenty years ago, I would have gained a hundred pounds only with that bait. I am bound in duty to divulge it to your honour, and not carry it to my grave with me. I do desire that men of quality should have it, that delight in that pleasure. The greedy angler will murmur at me, but for that I care not. For the angling for the scale-fish, they must angle either with cork or quill, plumbing their ground, and with feeding with the same bait, taking them asunder, that they may spread abroad, that the fish may feed and come to your place: there is no doubt of pleasure, angling with fine tackles or single hair lines, at least five or six lengths long, a small hook, with two or three spawns. The bait will hold one week; if you keep it on any longer, you must hang it up to dry a little: when you go to your pleasure again, put the bait in a little water it will come in kind again." This was, indeed, a notable discovery of Barker's, and salmon roe is a favourite bait to this day.

3268. *As regards the value of salmon or trout roe as a bait*, Barker's intelligence has been confirmed: it is not, however, a universal bait, but kills better in some waters than in others. In real salmon and trout rivers it seldom fails to entice fish, and that in a degree beyond any other bottom bait whatever. In our journeyings we made many inquiries relative to what may be called *its natural history*; but at that time it was but little acknowledged by angling professors, and a kind of mystery hung around its preparation, &c. We were however given to understand, from several sources, that some particular state of the fish, and that not a healthy one, was necessary to the perfection of the bait. We do not find this confirmed by the later accounts of angling writers, but we must confess that we do not now hear of its being so invariably successful as it then was said to be. This may, however, arise from the levelling influence of time, which reduces the standard of most things to their just admeasurements and value.

3269. *The period at which the spawn is most effective as a bait* is differently stated. Mr. Salter says that it is best when collected about two months before spawning time, with which we cannot agree. It may then make paste; but as spawn, in this immature state, the ova betray their imperfect evolution by their appearance. When salmon, from circumstances, have been prevented from spawning at the appointed time, we are disposed to think such spawn is peculiarly grateful to fish; and it becomes, as we know, firmer and more adhesive than other spawn. Healthy spawn, or roe, is never better as a bait than when it is collected about a fortnight or three weeks before spawning. We saw at Lancaster some roe for sale; it was then laid in cakes in a box with woollen wads between each layer; but it was denied that it had been salted. It had evidently been picked very clean from its membranous adherences, and was pressed very close and flat; but if our memory be correct, the *pea*, as the individual ovum is called, was distinct and unbroken. It must, therefore, have been subjected to gradual pressure in a mass, probably having been first slightly salted with common salt, and perhaps a small portion of bay salt had been added to it. That the structure of the ova should be preserved entire, we think is of much importance to the value of the salmon roe, and if so, what is called salmon paste must be greatly inferior to the actual roe well preserved.

3270. *To preserve salmon roe* we should recommend, instead of salt, that sugar be employed after the method directed by Dr. M'Culloch, of Edinburgh (p. 1025.); and as it is observed that honied baits are well received by fish, we see no reason why they should not prefer it so preserved to the saline mode. The former method of preserving it was to lay it on a wooden plank, pressing it moderately by means of another plank: then hanging it, exposed to a gentle heat, until it becomes firm. It is reasonable to suppose, that this was a very good plan, provided the process of desiccation was slowly but effectually performed.

3271. *For preserving this spawn* a more modern method has arisen, by which it has been kept good two years in a cool situation. A pound of spawn is immersed in water as hot as the hands can bear it, and is then picked from membranous films, &c. It is now to be rinsed with cold water, and hung up to drain for twenty-four hours; after which put to it two ounces of rock or bay salt, and a quarter of an ounce of saltpetre, and again hang it up for twenty-four hours more. Now spread it on a dish, and gently dry it before the fire or in the sun, and when it becomes stiff pot it down. We should, however, recommend that the potting be not in one mass, but, like the shrimp paste sold at the fish-sauce shops, that it be divided into small pots, pouring over each some melted suet, by which method a pot can be opened when wanted, instead of disturbing the general store. It forms an additional security to cover each over with a moistened skin or bladder. Trout roe is also said to make a good bait, but we have no personal experience of its efficacy: in fact, we never tried it; but it has been so strongly recommended, that it would be but fair to give credence to its value until numerous trials have proclaimed it as totally inert.

3272. *To bait with salmon roe*, first put on the hook (which should be sized according to the fish intended to be tried for) a mass which shall fill up the hollow of the bend, and hide the steel. On the point put two or more firm large grains of it, both to conceal the snare and tempt the fish. In this way it is said to be principally a winter and a spring bait, but we know no reason why it may not be advantageously used at other times, for spawn of some kind is almost always to be found. At Uxbridge we saw in the preserved water a scene of destruction we grieved at: it was *committed* by two gentlemen who gloried in killing all the trout in the pool, and the quantity was such (thirty pounds' weight) as would have furnished excellent sport to the fly-fishers who frequented the White Horse Inn for many days. Killing fish is a delightful amusement; but there is a species of fish murder which should be branded as direct poaching, and punished with he contempt of every generous sportsman. Salmon and trout are perhaps the greatest gourmands at this bait: grayling appear to be next in succession, and roach, dace, and chub, bring up the rear.

3273. *Shrimp paste* is also made and used by some anglers, particularly for perch and roach, and we believe that chub may be also occasionally taken by it; but we are not aware of any great merit that it possesses. It is, however, prepared and used after the manner of the salmon roe paste.

3274. *Cheese paste* is also used by some anglers, and is made from either new or old cheese, by mixing it with stale bread if the cheese be new, and with new bread for old decayed Cheshire cheese. From either mixture, by a long continued kneading, an excellent adhesive paste may be made, which for winter fishing will be found a valuable bait: the new cheese and old bread for roach, and the old cheese and new bread for chub. At least, in our own anglings, these varieties have proved to have answered the ends required. Bream will sometimes take both these kinds, and chub are taken with them both before and after spawning.

3275. *Sweet paste is thus made:* — Take any quantity of the crumbs of new bread, and after dipping it in honey, work it in the hands until the honey be incorporated, and the mass be of sufficient tenacity to remain well on the hook. When honey is not at hand, use a syrup made of white sugar. Nothing shows the capricious tastes of fishes more than this bait: carp will take it greedily one day, and will refuse it the next. A friend of ours procured permission to fish in a preserved water in Surrey, which was stored with large carp, and his leave included permission for a friend. It so happened, that although he went himself, we could not make use of our ticket that day. Our friend was prepared with several reputed carp baits, among which was the paste in question: with this he killed three brace of very heavy carp, and returned delighted with his sport. On the following week we also took our sweet paste, our ticket, and our stand, and began under the most flattering auspices, as the day was mild and gloomy. We pursued our angling "from noon even until night," and we took at length one small carp, and a moderate-sized tench also; and thus the same fish which had contended for the bait on one day, wholly refused it a few days after. However, the experience of every angler will furnish him with instances nearly similar: perhaps the anomalies are less in most other pastes than in this.

3276. *As a bait for carp* Mr. Salter remarks, that it is a most killing one during the months of July and August, and as long afterwards as the fishing season lasts. As regards carp, we think this paste has a very peculiar claim on the angler, who cannot be at his post too early and late, where the carp fisher should be in most cases. With this allure, he may obviate the necessity without destroying his sport; for we think this is one of the few baits which the carp in favourable weather will take even at midday. Tench are also fond of it, but less so than carp. Chub may be taken by it sometimes very well, and roach will seldom refuse it. When using it, groundbait with No. 2. (page 1031.), but do not cast it wide in still waters.

3277. *A keeping paste*, dignified by some London anglers with the name of the patent paste (though we never heard of the patent being enrolled) is made by separating the vegetable parts of flour from the pure gluten. Knead any quantity of flour with cold water, added by small quantities at a time, but avoid saturating it beyond the consistence of soft dough; and let the process be conducted slowly. The dough, when well formed, should be thoroughly washed in repeated fresh waters, at each time doing it in one mass, pressing it as dry as possible from the last water that had been applied. Continue this until the whole assumes the consistency of birdlime, and will no longer tinge the water it is washed in. This paste has two advantages: one is, that it will keep many months in wet cloths or under water, which is indeed the most certain method of preserving it. When used also, it must be surrounded with a very wet cloth to keep it from hardening, and the fingers must be dipped into water before affixing it on the hook, which is effected in manner and quantity as other pastes. When it has been put on the hook, its second valuable property becomes at once apparent by its adhering fast to it, let the current be what it may. With these qualities it may be useful in those rapid waters no other paste can withstand. But when it is recollected that the very perfection of the process of making it depends on the abstraction of two out of three of the component parts of the flour of which it is made, and both of which are acceptable to fish, it can be matter of no great surprise that, as a bait, it proves greatly inferior to the more simple *common bread paste*, in which the *farina*, compounded of gluten, starch, and mucilage, is kept entire.

3278. *Common bread paste* is made either of new or stale bread, according to circumstances; and as this, in the opinion of the best bottom fishers, is somewhat important to the success of different anglings, we shall detail each separately. New bread paste is made by intimately kneading together in the hands, for a few minutes, three-fourths of new with one-fourth of stale bread, without dipping in water. This working will bring it into a very glutinous adhesive paste: it is particularly fitted, therefore, for angling in strong eddies and powerful streams: but it does not apply so well to the finer fishings for roach and dace in moderate streams and still deeps, since it will not separate so readily from the hook as the paste made from stale bread; and this peculiar property of separating, the experienced roach fisher considers to be essential. In chub fishing, on the contrary, it forms a valuable property in this paste, as a larger piece will adhere to a larger hook, which would be soon washed off from the other. It is also more useful than the stale bread paste for taking dace in the Thames, as well as the streamy parts of all other dace rivers. This paste is convenient from the quickness with which it is made, and which, if the angler have far to travel for his sport, should be done at the water side to prevent its drying.

3279. *Stale bread paste* is made of bread one day, or at most only two days old; in which latter case the requisite portions of the bread should be taken from the centre of the loaf. It should be first momentarily dipped in water, and instantly squeezed as dry as possible; then placing it in the palm of one hand, with the fingers or knuckles of the other continue to knead and work it twenty minutes, which will make it a stiff uniform mass. It is well to observe, that as all bread pastes have a tendency to become quickly sour, particularly if wetted, it is advisable, should the angler have some miles to travel, that he carry the bread with him in the form of a small loaf or roll, which will enable him to keep his paste from drying too much, and from becoming sour. This excellent paste might with great propriety be distinguished by the term roach paste, as it is that which most professed roach anglers use, particularly those who fish from banks in still deeps. With this paste our friend heretofore mentioned used invariably to bait his hook in his late winter fishings in the Lea (gentles supplied his hook in the more early winter months). He was a most excellent roach fisher, and his preference of this paste arose from a full experience of its superiority over all others of the kind for these fish under the circumstances adverted to. In the roach streams of the Thames and some other rivers, new bread paste is occasionally preferred; but the readiness with which paste of stale bread is affixed to the smallest roach hook, as No. 10, 11, or 12., and the little tendency it has, from being less tenacious and solid, to resist the entrance of the hook into the roach's mouth, make it certainly the preferable paste for these fish; and, moreover, they seldom refuse it at any season. Bread pastes are taken by barbel, carp, tench, chub, dace, and minnows. Even bleak will occasionally be tempted; but the occurrence is somewhat rare.

3280. *Barbel paste* of a more tempting kind may be made by dipping bread into the liquor from which greaves have been taken after soaking, using it instead of water for the mixing. In this case we think the introduction of wool into the mass useful, as otherwise the current will wash it away, or at least will expose the point of the hook, which we, however, obviated in our own practice by putting on the point a firm minute white morsel of greaves. Bream will sometimes take this paste.

3281. *Coloured pastes* are of various kinds. A principal one is that tinged with vermilion, and is intended to give it the hue of fresh fish spawn. Some fancy-anglers tint their paste yellow with turmeric; and as fish, when thoroughly on the feed, will take any thing almost, so these varieties assume the character of killing baits; but these occurrences being rare, the error gradually cures itself.

3282. *In the general application of baits on the hook*, experience and dexterity are both required. Let the hook be perfectly dried by wiping before it is attempted to put on the paste, a sufficient portion of which should be separated by the finger and thumb from the mass; and when rolled into an oval form, should be forced on the hook by pressing it into the hollow of the bend, so as completely to cover the whole of it, allowing the upper part of the shank only to appear, and which should seem to spring from the centre of the mass. A little practice will of itself teach the process, perhaps, better than written instructions, which, however, are useful, as they first awaken the mind to a conviction of the necessity of being particular in these matters, and they also lessen the incipient difficulties of the practice. One caution we think advisable with regard to such pastes as are little adhesive, that in pressing them on the hook they be rather flattened than round, as regards the area formed by the barb and bend, by which the force of the current will operate on that surface of the paste most which has two points of contact, and least where it has but one.

3283. *Paste hooks should be whipped with white silk.* We always whipped our hook and gut with white silk and white wax, that the contrast of colour between the white paste and black whipping might not be too apparent. In aid of this also we shortened our shank, and we strongly recommend both of these practices to anglers whenever fishing with white paste. It will also be found to prevent the stale bread paste from so readily separating from the hook, which is very apt to occur in fine roach fishing, if the bend of it be whipped very finely with small white cotton, about eight or ten turns of which will extend three-eighths of an inch, and will be sufficient. This plan certainly tends to retain the paste on the hook in quick streams, the constant tendency to washing off being one of the great drawbacks on the pleasure of paste-fishing.

Sect. VII. *Ground Baits.*

3284. *We might commence by remarking on the great variety of these baits;* nor is it to be wondered at. The angler who has extended his observations beyond the precincts of his own immediate vicinity, must have been struck with the diversities of opinions and practice which distance creates in his favourite sport. We have had many occasions to notice these differences, and we have embraced them with a view to extend at large our systematic and general view of the art. Of these instances, few are more prominent than the little attention which is paid to ground baits by the ordinary bottom fishers of distant counties; while with the metropolitan angler they form a very important feature in his practice, and he would almost as soon angle without baiting his hook, as he would wet his line without first drawing the fish together by *baiting the ground.* In the oft frequented waters within the reach of these professors in the art, the fish resort to certain spots, holes, or swims, in expectation of these matters so frequently offered them, in the same manner as trout come to the head of stews to be worm-fed in the great preserves at an accustomed hour: and thus the habit of preparing the ground for the fish of these waters is kept up, and it is in vain to expect good sport without it.

3285. *Of the importance of ground bait,* Mr. Salter (who was known to have been himself a most excellent bottom angler) very justly observes, that if, however, ground bait is neglected by the inexperienced, or avoided by the idle fisher, little success will attend his efforts in bottom or float fishing; and we may further observe, that it is chiefly by the judicious use of *ground baits*, and by fishing at a *proper depth*, that one angler is more successful than another, although fishing with the same baits and within a few yards of each other. Nor is this surprising, when the rationale of the action of ground bait is considered. Fishes naturally congregate where they have been led by any singularity of appearance in the waters they inhabit: thus they are on the alert, and take every kind of bait eagerly, when a flood is coming down. Conscious that food of different kinds is forced along by the sweeping current, they are on the look-out to receive it; and thus also when ground bait is thrown down it attracts the attention and draws fish together, which finding that an edible is presented to them are detained there; and although their naturally roving disposition may carry them away again, fresh supplies render their absence short, and they instinctively return to the scene of former plenty. It is the principle of ground bait to attract fish without glutting them; and thus, although edible matters enter into the composition of ground baits, yet they are, or ought to be, always inferior to the hook baits offered at the same time, by which the fish may be tempted to leave the ground bait for the more delicate morsel on the hook.

3286. *Ground baits should be laid previously to fishing.* On the principle that from memory fish will repair to spots where they have before found food in considerable quantities, it is the practice of all experienced anglers, not only to groundbait the spots they intend to fish in during the time of their practice, but also to do the same the evening before if possible, which is sure to detain them, or bring them again in the morning to revisit the place; and it more certainly collects into one focus those fish which otherwise would radiate every where around. So convinced are anglers of the advantage of a previous evening's groundbaiting of the waters they purpose angling in, that many who cannot be present themselves, send or give directions to have it done for them. When fish are very scarce, it is politic to previously groundbait a place several successive days, to give the distant fish a habit of coming to the spot daily.

3287. *In the use of ground baits,* the nature of the water, and also the kind of fish intended to be angled for should be considered. It is essential also that the ground and hook baits be of the same kind, in colour, taste, and smell, but not so necessary that their qualities be the same: they should, on the contrary, be more attractive, or, as we might say, *piquant.* A quick rapid stream must have massive ground baits that will resist the current: still waters require more diffused matters. Varieties in fish will make some difference in the quality of the ground bait likewise. To draw together perch, trout, barbel, &c. animal substances, as worms, particularly such as are conspicuous, as lob or dew-worms, should be stuck into masses of clay, which by attracting attention may detain the fish around. It is a good plan to chop these up; and when thrown in for a few days, the diurnal bounty insures fish not being far off. Roach and dace, chub and bream, frequent spots where malt and malt-house sweepings, chaff, bran, &c. have been previously scattered; and it is thus that gamekeepers not only keep their own fish to certain localities, but also tempt those of their neighbours. In Hertfordshire a gentleman, not himself much of a sportsman, lamented to us that, although he much wished to oblige some friends with a few days' tolerable fishing, he entirely despaired of being able to do it, for the poachers had carried away all his fish. They certainly had grievously thinned his waters; but as a certain tenacious nobleman, who had a very clever gamekeeper, lived not very distant, we were confident that he had many in store. I recommended this gentleman therefore to doubly bait his water, as I well knew the keeper baited his; and he did so, by throwing in a profusion of various matters night and morning for a fortnight, well watching it during the time. The consequence of this method of procedure was, that he gave his friends a week's excellent sport. Cheese is thus used for chub and barbel.

3288. *A general rule regarding ground bait* is, that in most cases it should be of the *same nature* with the hook bait; but it must be inferior in *quality*. If this condition be not observed, some fish may leave the latter for the former; whereas, by thus adapting them, the fish will be thrown off their guard, and take the hook bait with less caution when it resembles the ground bait, of which they have partaken with impunity. This rule however, like most others, admits of exceptions: it is the principle that we advocate.

3289. *Proceeding to the formation of ground baits*, after these preliminary remarks, we shall detail the general practice, as pursued by the best bottom anglers in the formation of these matters, numbering them for future reference.

3290. No. 1. *Bran and clay ground bait* is the most simple, and the most common in use among anglers, particularly for roach, dace, and bleak. Take some adhesive light mud or clay from any convenient spot, and mix with it a quantity of bran or coarse pollard. Of this mixture drop in here and there around you masses of the size of a pigeon's egg. If there be any current put a stone within each, sufficient to sink and retain it below. The force of the current should likewise be calculated: if it be very sharp, let the stone be rather larger, and also cast it in rather above the part of the water you wish it to rest on. This ground bait we recommend as the most proper for swift streams and currents of large rivers, as the Thames, &c. In such waters a large supply is necessary to meet the driftings and solvent powers of the rapid flow; and this being not costly, can be thrown down in liberal quantities, on which success so much depends.

3291. No. 2. *A meal ground bait* is one which is particularly calculated for the deep pools of rivers and gentle eddies, which form the strong holds of carp, chub, roach, and dace. Among the London anglers, we think it is in more common use in the Lea than in the Thames, which perhaps is owing less to its extreme lightness of texture than to the cupidity of the puntmen who usually accompany the angler, and are very frequently allowed to find ground bait for him, for which they make a charge; and as a shilling or eighteen pence for bran and clay will pay better than two shillings or half a crown for bread and pollard in sufficient quantities, so bran and clay are usually recommended; and, for reasons before stated, these are perhaps sufficient for ordinary fishings: but a meal ground bait is certainly the most attractive to the above fish, and where much is expected, much must be done to deserve it.

3292. *Mr. Salter's method of making this ground bait* is one of the best, and agrees with our own in essentials. He says, "For a day's angling a quartern loaf is necessary, the crust of which you will cut off, the crumb to be cut in slices about two inches thick, and put into a pan, or some deep vessel, and covered with water: when the bread is quite soaked or saturated, squeeze it nearly dry; then add the bran and pollard by handfuls, equal quantities of each, and knead them together similar to making bread, until the whole is nearly as stiff as clay. In making this ground bait, it requires some labour and time."

3293. *The qualities of this ground bait for cleanliness*, and its tendency to attract carp, roach, chub, dace, and bream, will however amply repay any trouble in the making of it. It is to be observed of it, that it is more particularly calculated for groundbaiting still deeps, or very mild currents, it being neither heavy enough to withstand rapids, nor will it, from its solvent properties, bear a stone well within its masses. The best ground bait is that, in every situation, which remains stationary, and dissolves slowly.

3294. No. 3. *Take barley meal one part*, mashed potatoes three parts, and stiff, clean, adhesive clay or marl two parts; work these well together, and they will form a cheap and excellent ground bait for almost any waters, and for all the usual fish for which ground bait is used. We have found it useful in bream fishing in Dagenham Breach; but the following still more so:—

3295. No. 4. *A very useful ground bait* for rivers with still deeps, where fish of almost every variety abound, as in some parts of the Trent, the Severn, and the Wye, may be made as follows,—Mix with some stiff clay as much coarse pollard as it will bear without destroying its adhesiveness. If well worked, it will retain its tenacity with an equal weight of meal nearly. At the water side, separate pieces about the size of a goose-egg, into which stick a few worms and a few gentles. As these escape from the dissolving clay, they are seized on by the fish, who continue to wait in the expectation of more, and are thus ready to take the angler's bait also if it show a more tempting appearance than the other. It will likewise add to its good qualities if some well soaked greaves be mixed with it. From long experience, we can recommend this ground bait strongly, as a most excellent one for the still deeps of very large rivers, where carp, tench, perch, chub, barbel, roach, dace, bream, eels, and gudgeons, may perchance be all congregated by it. For we have, in some of these rivers, known nearly every one of these varieties taken within the space of a few hundred yards. As a professed barbel ground bait, it is also very good, and will admit stones within its balls readily if it be sufficiently worked.

3296. No. 5. *Barbel ground bait* is likewise made of soaked greaves with clay only, and from its tenacity and its admitting of being thrown into the water in large lumps of three quarters of a pound, it is particularly adapted to barbel punt fishing in the Thames deeps, with greaves for a hook bait.

3297. No. 6. *Mixtures of boiled or scalded malt, barley, wheat, &c.* are good *ground baits* for carp, tench, chub, and bream. They should be united with coarse sand, which helps to sink them, and increases the effect also. This variety is particularly applicable to meres, fleets, and large ponds, which are principally stocked with carp, tench, and bream.

3298. No. 7. *Worms cut into pieces*, and gentles with the dust, or rather minute fragments of greaves, all mixed together in sufficient quantities, form a tempting ground bait for carp, tench, chub, barbel, &c. Add to them double the weight of wet sand, and throw the whole in by small handfuls at a time. This ground bait, like the former, is only adapted to still waters.

3299. No. 8. *Gentles are sometimes used alone*, or at least are only accompanied by wet sand to sink them. For this purpose the London anglers usually furnish themselves with what are called carrion gentles, procured from the horse killers, fellmongers, and great melting houses. These gentles are green or unripe; they are also unscoured, and smell rank, consequently are not so readily taken by many fish as those which are scoured, riper, and brighter. Our cut (*fig.* 513.) shows the gentle box, which is considered to be filled with them, and is accompanied with a bag of coarse sand. It is thus, therefore, that when the former are thrown in as a ground bait to draw the fish together, the latter (*i.e.* the well scoured) being let down amongst them, although on a hook, are preferred and readily taken. For a day's fishing a quart or two of carrion gentles will be required, and should be cast in with judgment, so as to reach the spot fished on their descent. If this caution be not observed, they may do harm instead of good, by inviting the fish to the distance that the stream may have carried the gentles.

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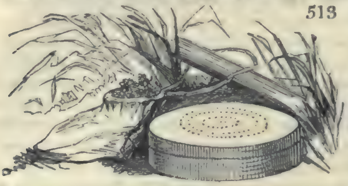

GENTLE BOX.

CHAPTER VIII.

BOTTOM FISHING.

3300. *Bottom fishing is an angling phrase*, like many others in the art, by no means over definite. Conventionally it is understood by many to express such anglings as are practised below the surface of the water with a line and float, whether the bait touch the ground, or whether it be several feet above it. By others it is considered as more expressly signifying angling with or without a float, provided the baits are sunk so low as to trail on, or are close to, the ground. Our treating of it will be in its most comprehensive sense; our instructions will be general also, and applicable as well to the more unusual practices without a float, as in barbel angling, and also to the more common method. *Straight-corking* is holding the float still, in a rapid stream, and is deadly to chub and barbel.

Sect. I. *General Instructions relative to Bottom Fishing.*

3301. *In this amusement are required implements or tools*; baits to allure; craft to display them; and fish to operate on. Of the necessary implements called *fishing-tackle*, we have already fully treated. Our two last chapters described *angling baits* individually and generally; we now propose to offer some instructions relative to the *practice* of the art; and we will afterwards proceed in search of the *fish* to angle for.

3302. *A sufficient variety of fishing-tackle* on all occasions is the most important requisite, which we would press on the attention of the young angler. Success in any one kind of fishing is always a matter of chance: but total disappointment as regards sport very seldom occurs to him who is able to vary his modes of attack. Under this view such implements as may be wanted to meet a proposed change in his practice, should always be taken, whether the journey be long or short. Experience taught us to have recourse to a *card list* of these necessaries to insure their being always taken: we shall present a copy of the one we so used, and leave it to the angler's choice to adopt, alter, or reject it altogether, as he thinks fit; only remarking, that several good practitioners have acknowledged that the method had saved them many a disappointment. Persons who fish every day almost, have all their tackle in one place: habit brings all indispensable articles before them, and they muster themselves in the mind's eye, as it were, in angling array. Very different is it with the man of business, who wets his line but once a month perhaps, or not more than once or twice in a season. His tackle put by in the same hurry as when it was wanted, requires a muster-roll, or something is sure to be absent without leave.

CARD LIST.

Rod. Reel. Landing Net. Basket.

Lines (gut) with large cork flat—small ditto—swan's quill ditto, strong. Hair lines with tip—cap, and float. Paternoster line. Night lines. Spare gut and hair. Spare reel line. Hooks, naked—hair-mounted—gut and gimp-ditto. Split shot. Float-caps. Plummet. Coffin-lead.

Traces and hooks—minnow spinning, roving, and gorge-hook. Ditto, ditto, and ditto, for gudgeon. Snap-hook. Baiting-needles. Dip-lead. Devil-bait. Minnow-fly. Wax—waxed silk—waxed twine. India Rubber. Knife. Scissors. Pliers. Disgorger. Clearing ring. Gaff. Baits—bags—and boxes.

Small fly-book. Reel and line. Flies *ad libitum*. Fly-rod.

Sherry, Sandwiches, &c.

3303. The practice we have advocated of being furnished with a variety of tackle for enabling the angler readily at any time to change both the method and the object of the attack, was constantly pursued by ourselves, and it is that which laid the foundation of our list, of which the above is a literal copy, one of which was always to be found in our bottom fishing-tackle book. We framed it as an assistant to a treacherous memory, and with the exception of the drag-hook, we never moved for a single morning's fishing without the whole of the articles enumerated. Our fly-book, it is true, was not always called into requisition, but as it was very small it added little to the burthen. Its usual contents were a few bright palmers, and a few house-flies, which we could use by the help of an additional top to any rod in whipping for chub or dace; and when it appeared a doubtful point, whether the fish would take best under or on the water, we added others, and took our boy with us with a spare rod for fly-fishing, or we took our usual fly and dressing books as a part of our equipage. In vicissitudes of times and seasons, the angler, thus armed, may almost bid defiance to a blank account. Should the worm, gentle, and paste, wholly fail, the minnow can be spun, or the gudgeon can be exhibited; and if these also prove unsuccessful, the attention may be diverted to jack trolling. Perhaps all efforts under the water may be attended, as they sometimes are, with negative success; and this often for a very simple reason, because at those times the fish approach the surface to feed there; and it is now well if the angler be prepared to attack them. If he be but a novice in fly-fishing, yet the fly top of his general rod will enable him to treat the rising multitudes by whipping for them with a palmer, or an ant, or house-fly; or with his usual rod he can dip with such natural flies as his observations point out as acceptable to the feeding fish.

3304. *The articles which enter the card list*, most of them, indeed all of them (that ever enter a book) can be collected and carried in one pocket-book purposely made to receive them, and for the information of the young angler we will describe it. The case part contains the usual boxwood line-reel, but the central portion, instead of having one row of box-like cavities, has two, by which the artificial minnow, the minnow-flight, and other matters, can be kept free from pressure in one row: the usual apparatus, as split shot, float-caps, bored lead, folding plummet, wax, &c. &c. in the other. The reel compartments are adapted to hold two cork and two quill-floated lines. A strong leathern leaf exhibits the minnow and gudgeon tackle for spinning or trolling, with needles, disgorger, &c. &c. on one surface; while the other affords a pocket to receive swivel traces, spare lines, gut-hooks, silk, &c. &c. The portability of angling apparatus is the next consideration, and we will suppose our angler furnished with the requisite tackle for bottom fishing: his baits arranged; his worms in wet moss, with the smaller sorts distinct; his gentles scoured, or his bread ready to knead at the water's edge, provided he intends to fish with paste. We will take it for granted, that his ground bait also is prepared; but how is he most conveniently to carry it is the question? Mr. Daniel recommends an apron (from his old oracle, the *North Country Angler*), something like a fish-woman's, which in different compartments shall hold worms and ground bait, &c. &c. The custom of dangling the worm-bags at the button, which Mr. Daniel is so severe upon, we apprehend is the best after all, for in the pocket or the basket they are apt to be pressed. We, however, recommend the apron, if the angler is likely to be confined to one situation, as a very convenient article, particularly in punt fishing.

3305. *To plumb the depth* is the first operation after the ground bait has been thrown in (*fig.* 514.), and the rod and line have been mounted according to former instructions. Mr. Salter directs that the line and plummet be first used in ascertaining the depth, and that then it be suffered to remain in the water, while the ground bait is in preparation and cast in, by which time, he says, the line will be softened. This is spinning fine, but it is true; and it is better to spin instructions too fine, than to omit them altogether. In groundbaiting let the pieces be small if the water be still, and large if it be a strong current; and repeat it as the biting slackens. But to return to our diverging point. Unfold about two inches of the plummet, if it be a folded one, and within it inclose the point of the hook, the shank being without; close the fold, and the plummet will be then fast secured to the line. Now lower it down to the bottom of the water, without slackening the line; and having remarked the extent of it that is wetted, affix the float, so that its top shall be even with the surface of the water. Again, lower it down to try its exactness before the plummet is finally removed. To place the bait critically as to depth, is a matter of much consequence in true ground angling, so that every circumstance which is likely to interfere with, or alter it, should be attended to. In tide rivers, where the depth of water is liable to continual variation, it is very necessary to repeat the plumbing frequently, for with those groundling fish which feed at the bottom, a bait elevated only half an inch above the surface of it will almost to a certainty be refused. It is thus that while punt angling for gudgeon in the Thames the experienced fishermen recommend frequent plumbing, and the moment the gudgeon relax their biting, they either rake, or plumb, or both. In the Thames this is particularly done; for even where the tide has no effect on its waters, flashes, as they are termed, of water are continually coming down from the opening of locks and sluices above, which produce a temporary alteration in the river's depth. The unhatching also of mill-races, and the falling of showers some miles above the stream fished in, may produce a trifling change. In canals, and in such waters as communicate with them, the opening of locks occasions continual variations in the height of the water, of which the angler should be careful to inform himself, by now and then taking the depth. An alteration in the water length of the line itself will sometimes take place by the shifting of the float, which by repeated immersions, if not previously secured, may be forced up the line, and thus bring the bait to drag on the ground. This might be prevented by a half hitch or two of the line around the top of the float.

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PLUMMETS.

3306. *A plummet* is not absolutely necessary to ascertain the depth when a shotted line is used, though it is always convenient and desirable. If there be a moderate quantity of shot to a line, on immersing it the float begins to recline a little as soon as the shot reach the bottom, the gravity of the lead no longer acting on the resistance of the float. This being observed, the intermediate space between the shot and the cap of the float gives the measure of the water. If the float, therefore, be moved downward as much as the space which exists between the shot and the hook, the depth is then plumbed correctly enough for ordinary purposes, but by no means for regular ground fishing.

3307. *A ring plummet* is more applicable to strong currents, where the force might carry the folding one along with it: to use this, pass the hook through the ring, and fix the point into the cork at the bottom. Even this, however, is sometimes insufficient; and it is not amiss, therefore, to be furnished with a barbel lead, which by means of a loop will make a plummet sufficient to stem any current the angler usually fishes in. It is a great error to suppose that, "when your float stands upright, you are off the bottom." It is by no means the case; for your float may just have water enough under it to keep the lowest shot touching the ground, while it may be kept erect by the others above it. Having found the exact depth at which your float begins to recline, it is necessary to draw it down your line, as far as there is distance between the uppermost shot and the bottom of your hook. By this means your bait will just trail upon the ground, and in this fashion is peculiarly acceptable to many fishes, especially roach and gudgeons, and almost equally so to barbel, &c. Remember that strong currents often require very powerful weights to sound with. In such cases we always use the clearing ring.

3308. *Baiting a hook with worms.* The ground bait being thrown, the rod and line mounted, and the depth accurately plumbed, it becomes necessary to *bait the hook*, which we will suppose to be done with *a worm*, or worms. When one only is used, enter the point of the hook at the top of the worm's head, and carefully draw or squeeze its body round the bend, and over the whipping, by means of the finger and thumb of one hand, while the forefinger and thumb of the other are employed in pressing the hook onwards, until less than half an inch only of the tail part is left, which should be directed within the curve of the bend. If too much of the worm be left unattached it entices the fish to suck at that, and tease the angler with continued nibbles; till at length, on raising his hook, he finds this portion gone, and the point of the hook exposed. To the careless angler this happens continually. If too little be left, there does not remain enough to attract the fish by the motion in the worm. It had always been our own practice to attempt to direct the projecting portion of the worm within the bend, and one of our first lessons in worm fishing was never to let the tail project outwards from the point of the hook, that the fish might not rip the bait away, so as to bare the hook down to the bottom of the bend.

3309. *To bait with two worms* is the most alluring practice of any for the voracious tribes, as trout, perch, and eels; while one, on the contrary, well put on, unless the worms be very small, is perhaps best for roach, dace, and gudgeon. In baiting with two worms, proceed to place the first as already directed, but allow it to remain above the arming until the second worm is penetrated by the hook, not at the head but near the tail, threading it up, and turning a small portion only of its head within the bend of the hook. Lastly, draw down the first worm to meet the second.

3310. *In baiting with the dew or lob-worm,* enter the point of the hook a very little below the head, and carry it to within half an inch of the tail, burying the whole of the hook within the worm. We have, when the worm has been unusually large (which is a very tempting bait for large trout and barbel), passed out the hook a little short of the centre of its length, and have again entered it about an inch below, and carried it along the remainder of the hook, leaving the folded portion pendent. The barbel has by no means a large mouth, yet by sucking it can take in a very large worm, and we believe that the general result of barbel fishing shows that they are particularly enticed by a large bait: perhaps we might also include large trout with the barbel in this respect. A very long worm is not, however, a desirable bait for any other fish, unless it be very thin, when it may be put on as directed above. In all other cases a worm whose length exceeds the linear measurement of the whole hook rather more than one half, is the most convenient for baiting, and the best for expedition. For as in our opinion fish never willingly take dead worms, so when one is exhibited crumpled up and wrinkled, or torn or crushed, we suspect it is refused because it is supposed to be dead. It ought, therefore, to be the aim of every worm-fisher to show his worm lively, by allowing it some motion, and to exhibit it as healthy also, by avoiding to tear or unnecessarily pierce it; yet it should be kept so compact on the hook, that the fish shall not take any of the former without taking also the whole of the latter.

3311. *In baiting the hook with bloodworms,* much delicacy of finger is required to place them so as to cover the hook without mangling the worms. Our own plan was to pick out the largest we could find, having first selected a fine wired hook. On this we carefully threaded the greatest portion of the worm, carrying it high upon the arming, which should be always of red silk. About a quarter of an inch of the first worm we left pendent, with that part directed towards the back of the shank. We then inserted the hook through two portions of the second worm, leaving a quarter of an inch hanging on each side of the hook a little below the former. Lastly, we covered the barb and the bend with another large worm, the tail part of which we allowed to protrude a little also, but directed inwards. If bloodworms be so baited the method will be found the most killing possible; and the little trouble it takes to show them thus, will be amply repaid by the success which will follow. Carp will take them as a bait thus put on, and they will do it when they appear not likely to be tempted by any other. The same may be remarked of dace and chub, and particularly of gudgeons; salmon, trout, perch, and barbel, generally prefer the larger varieties of worms.

3312. *To bait the hook with gentles.* Unless the hook be very small, two or even three are requisite. With three insert the point of the hook into the gentle close to the head, or more bulbous end, and bring it out near the tail: now take a thin green gentle, and pass the point directly across the body, and then put on the third exactly as the first, except that, *having just shown the point of the hook through the skin of the gentle, retract it again.* For the latter hint we were indebted to Mr. Salter, and a very good one it is; for, as he justly observes, the skin of the gentle being somewhat tough (especially in cold weather), by piercing the skin in the first instance an opening is made, by which the finest stroke (where a bite does occur) will enter the hook sufficiently into the fish to secure it, and you do not risk breaking your line, or the top of your rod, by striking too hard. One gentle on a No. 10. or 11. hook will often succeed when more are refused, and the fish shy. The gut should be *shaved,* at the end, to arm this hook.

3313. *To bait with a gentle and wings.* The angler will sometimes find, while he is roach and dace fishing, that as the day advances towards its meridian, the roach and dace he may have been hitherto taking with success, will gradually leave off biting, and from the bottom will show themselves above, the dace at mid-water, and the roach but a little below the surface. This circumstance will afford him an amusing opportunity of varying his practice by mounting on a gentle hook, No. 8. or 9., a pair of wings. A brownish landrail wing-feather is the best to use. After the wings are on, cover the rest of the hook with a tough well-scoured gentle; whip with this, but not violently, and dace will rise eagerly to it. It is more than probable that roach will take it best when it is sunk some inches, or even a foot or more, below the surface.

3314. *Of striking and playing the fish.* When we find that our own opinions coincide with those of able authorities, who have expressed them much better probably than we could, we deem it the fairest way to let such authorities speak for themselves. We therefore give place, in this instance, to the argumentative observations on "striking and playing a fish when struck" by Captain Williamson, who says, "By striking, we mean the act of drawing the line tight when a fish is at the bait, in such a manner as may cause the hook to penetrate into some part of its mouth, and prevent its escape. To judge accurately as to the moment when you should strike, is acquired only by observation and experience; and the degree in the force and the manner of striking depends much on the nature of the fish supposed to be at it, its size, its strength, &c. &c. Strike rather quickly than violently, and not from the arm but from the wrist. When we consider the elasticity of the rod in conjunction with the tenuity of the line, and when we reflect that the smallest change of position at the butt of the former will cause an immense difference in the situation of its point or tip, and if we call to mind that not more than half an inch of hook is in the fish's mouth generally speaking, and that if that half inch pierces its mouth, our object is effected, we shall then see the impropriety of those strong uplifted pulls which many, even of those who think themselves good anglers, exhibit when they have a bite."

3315. *That the stroke should be made from the wrist*, is a very just observation of Capt. Williamson. "Under the supposition, that there be no impediment in the way of the rod's action; that the line can be drawn and kept nearly straight, from the tip to the float, without causing the latter to vibrate or be displaced; then a very slight turn of the wrist will cause sufficient removal of the tip, and consequently of the whole line, to make the hook take effect. The elasticity of the line will cause a kind of secondary motion, such as tends to fix the hook, and to make the fish instantly attempt an escape."

3316. *Never strike with the line slack:* nothing can be more unsportsmanlike, nor any practice more likely to mar the contemplated capture. If there be advantages in striking from the wrist (and fishing is badly conducted if it be not so done) a slack line does away with them all. A moderate stroke only with a loosened line acts unequally on the resistance, and thus very frequently snaps it in two; and the time required to give the impulse through a tortuous line unequally extended, is such as often to defeat the purpose of hooking the prey by conveying a previous alarm to it: this is particularly the case with the fine biting fish, as roach, dace, &c. With all this caution, observe that time must be given for some fish not only to mouth the bait, but to swallow it. Capt. Williamson illustrates this after the following manner:—"Let us suppose that a perch should seize your live bait suspended to a cork float, and carry it down; as in such case time must be given for the fish to gorge or swallow the bait, it follows that your line must be slackened, or be eventually let out from the reel so judiciously, as not to let the perch feel any check while in the act of swallowing." Under all circumstances, whether you succeed or not, examine your bait when a fish has been at it. On most occasions of the kind it is best to feel, as it were, first, whether the bait be gorged (which is done by the above means), and if you find it to be so, which the heavy bearing of the perch will sufficiently indicate, then a very slight turn in such direction as may be the reverse to that in which he is proceeding will have the desired effect. The learner must not suppose that any time is lost in such operations: they follow as quick as thought; and their appropriate adaptation to the moment not only decides the fate of the fish, but evinces the ability of the angler.

3317. *A quick but fine stroke is also necessary in some cases.* "Many fishes must be struck at the least nibble, while others must have some seconds allowed them. One will take the float scarcely half an inch under water before he has the bait fairly in his mouth; while another will merely take a slight hold of some pendent part, and carry the float one or two feet, or more, below it. In such case they are sometimes hooked on the outside of their mouths." Our author is certainly correct in this account of the biting of fish. The roach and dace are among the finest biters; the chub and carp, also the tench and the gudgeon, are irregular, now quick, now slow; the trout and perch are usually quick, and often violent in their taking of the bait: but the several modes of seizing their prey will be enlarged on with the descriptions of the individual fish. "When your bait is on the bottom, and a fish runs with it, drawing your float along the surface, sinking in very little or perhaps not at all, the line should be drawn straight from the tip of the rod to the float, and when you strike, observe the rule already laid down, of striking counter to the fish's course."

3318. "*It is necessary always after a bite to examine your bait,* which seldom fails to be deranged, more or less, by every attack that it sustains. I have seen anglers too lazy to do this, they being in the habit of leaving all to chance, when, after sitting for half an hour or more without a bite, in drawing up to remove to another spot they have been greatly surprised to see their baits half eaten away, and the hook two-thirds bared; yet they expected to catch fish."

3319. *Playing the fish after striking.* As soon as a fish is struck and hooked, if its size should be such as not to warrant your drawing it instantly out of the water, give him line in proportion to his exertions, by either his weight or resistance: but this must be done with great caution; for, as observed by Capt. Williamson, it is often more prudent to run the risk attendant on a short line and little scope of play, than to allow such a range as would enable the fish to dash among weeds, boughs, piles, or any thing likely to create difficulty. Giving line is not always practicable, especially in foul waters overhung with wood; and in such situations the largest fishes are usually found." Be cautious of urging the fish to his utmost exertion by over resistance, and always withdraw him gently from the baited hole, so as not to alarm his companions, and thus ring the knell of your future sport.

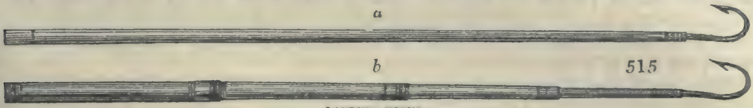
3320. "*As the elasticity of your rod and of your line* afford you considerable advantages, your study should be, always to keep the former in such position as may effectually combine the powers of both. This is done simply by keeping the point of your rod raised, so that it may bend, and by its spring gently yield to the efforts of the fish, and draw him back to his proper degree of pressure on the line, when his effort has ceased."

3321. *Some other niceties in float angling* are now to be attended to; and particularly we must press on the notice of the beginner, that without a proper regard to the length of line admitted between the water and the rod, or, in other words, between the angle which the rod and line make with each other, his success will be doubtful. In all waters, but more particularly in rivers, when you are bottom fishing for chub, roach, dace, bream, and gudgeons, observe to have no more line between the float and the top of the rod than will allow of a quick but fine movement of the wrist, to operate instantaneously on the hook below.

3322. *With regard to the proper length* to be allowed between the top of the rod and the water, no certain rule can be prescribed; for it must depend on the station of the angler in reference to the surface of the water below him. If he be fishing from a high bank, it is evident, that were he to dip the point of his rod within two feet of the water, it would be fatiguing to himself, and a wrist-stroke from such a position must be an act of too much effort to be consistent either with the quickness or fineness required. But if he be placed on a level nearly with the water, the length of line between the float and the point of the rod should be rather less than more than two feet and a half. He must be careful also to carry the top of the rod exactly with the progress of the float, and directly over it, so as to keep the line perpendicular, and, as before directed, with such a degree of extension that the line may never be slack. The rod, the line, and the float should move uniformly together; by which means the angler will be enabled the instant he perceives a bite, by a quick but only slight wrist-motion, to fix the hook in the mouth of the fish. It is for want of strict attention to these matters that young anglers secure few fish out of many bites. Time is lost in striking, and thus the fish discovers the cheat and throws out the bait.

3323. *When a fish has been unsuccessfully hooked, and breaks away*, it also happens that if his struggles are violent, he will almost to a certainty alarm his fellows, and it will be in vain to expect sport at that spot for some time. Our own practice in such case has been to quietly drop in a few loose worms or gentles, and also a few small balls of ground bait, and then to steal away to another part of the water. In the meantime the fish have again congregated, and finding no interruption or reason for alarm, their confidence has been restored, and we have again renewed our fishing.

3324. *The fish being successfully struck is in proper time landed*, the methods of doing which vary very much. From an elevation the landing hook is a very convenient assistance, either the rodded (*a*), or the telescope (*b*, *fig.* 515.). Avoid, however, any premature effort to land a fish. The tyro in angling is too apt to be anxious to look his prize in the face, which is a dangerous experiment on a fish only half spent. Fear gives energy to its last efforts, and its struggles may tear away the hold; or it will often make a wily attempt to escape by first slackening the line, and then running in on the angler, when, taking the advantage of its situation, it will double itself and strike the line with its tail, so as to break it, or otherwise tear out the hold on it. In every case, therefore, keep a tight line, preserve a necessary patience, and never land a fish of any tolerable size until it be completely exhausted. Full directions for landing a fish under every variety of circumstance have been already given, with the description of the landing net and the gaff-hook. One other useful hint presents itself, which is, that in bottom angling, after it has been prosecuted some time with success, it often happens that the fish suddenly cease to bite, in which case there is reason to expect that either a large jack, perch, or trout of some magnitude, has made its appearance among them, and frightened them away. The usual practice in such instances is to take some nice strong tackle, and put any small fish alive (a minnow, if it is to be got) upon the hook, by sticking it through his upper lip, or back fin; if either pike or perch be there, the bait will be taken. An equally effective method, and one that will prevent a total cessation of the pursuit, by changing the tackle is, to have a trimmer or two, which may always be applied advantageously, and will soon clear the place from these intruders.



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LANDING HOOKS.

3325. *Fine tackle in bottom fishing*, be it especially remembered, tends much to the success of the sport. The angler who uses fine tackle or single hairs in clear and large waters, and conceals himself, will take five times more fish than he who fishes coarse or in sight, especially if the former have a reel on his rod with a running line. The *foot-link* the angler should be careful to suit to the water: the colour of the rest of the line is immaterial in many rivers, when full without overflowing: an amber foot-link, free from chalky white, or knitty specks, is best when the water is low and clear as crystal.

3326. *Practical directions* with regard to angling stations, seasons, and the weathers favourable to the sport, have already engaged some attention (p. 996.); we may, however, with propriety give a few additional hints at the outset of our initiatory instructions. As regards angling stations a general remark may be offered, that in all still and confined waters fishing requires less nicety in every one of its operations than it does in rivers. The baits need not be so varied, nor so highly scoured; nor is it so necessary to use ground bait. Pond fish, likewise, will take at all depths; or at least a great exactness in this respect is less requisite here than in river fishing, where it is hardly possible to be too critical or too attentive, not only to this but to various other minutiæ also, particularly in such parts as are much frequented, where ground baiting renders the fish nice, and disturbance makes them wary. Some fish are to be looked for on gravelly bottoms, others on oozy or clayey soils. Barbel, chub, roach, dace, and gudgeons, prefer the former; and those spots which are the most truly sandy and gravelly, are usually the most furnished with them. Carp, tench, and eels, may be sought for in ponds. Jack, bream, carp, tench, perch, and eels, will live and thrive in lakes and stills with oozy bottoms, particularly if assisted by a spring of water within or near them. Trout cannot be expected but in running waters: the larger have commonly one settled spot in which they fix themselves, such as the tail of a weed-bed, in a deep pool where an eddy whirls the water around, under the overhanging race-boards of a mill-wheel, &c. &c.

3327. *As regards seasons* it may be well to observe, that in winter fish usually lie deeper in the water than in the summer, and are generally more sluggish and unwilling to bite: but they are also less likely to shift their situations in that season than in summer; wherefore, having once found them, one is almost certain to meet with them again in the same place whenever he looks for them. The middle of the day should be chosen for winter angling; but the mornings and evenings yield the most sport during the summer months. If, however, the weather be warm and lowering, fish will often bite during the whole day, but not if the clouds are charged with thunder. The waters are apt to be very low in July and August, and fishing must then be conducted with considerable skill, the brightness of the water at such times allowing every deception to be seen. The use of very fine tackle, and great care to keep out of sight, are now doubly requisite. The grey of the morning and evening twilight offers the best obscurity, and the best chance of success under such circumstances. A heavy rain-storm, by filling the river, and bringing down some fresh water, will revive the angler's hopes; and he should now sally forth, as he may expect sport among all the groundling fish.

3228. *As regards weather generally*, from what we have just remarked it may be gleaned that heavy rains will prove ultimately beneficial, particularly if they thicken the water; but during their immediate continuance fish seldom bite. A mild drizzling rain will often insure amusement on a very hot day. Thunder-showers stop all biting, but when they are over, fish return to it with double gusto. The fine evenings of wet days are, for this reason, productive of the best sport: in fly-fishing this favourable change is a prelude to excellent diversion. Carp, tench, and bream, in still waters, are particularly likely to bite during a slight rain, and always after it. When rain has filled the rivers the angler should principally try the sides of the stream and its eddies; but when a drought prevails, fish the middle of the stream, and its deepest currents. Sunny weather is not favourable to fishing; and when it is practised take care that neither your own shadow, nor that of your rod or line, falls on the water.

3329. *Do not hesitate to angle in any wind, if intent on the business:* fish will occasionally bite in all, provided they are not too cold. That from the east or north is certainly unfavourable, but fish may be taken during either of these winds by angling in spots sheltered against the blast. Dead calms sometimes occur in July and August, when the air is so sultry as to lull all nature into seeming repose. Anglers, obey the call, nor worry yourselves by fruitless efforts to tempt the fish which are then *above* temptation, though, to pun on it, they may be said to be rather *below* it. Wait on them at their supper-time, and breakfast with them before or by sunrise the next morning, and you shall not labour in vain, particularly if you leave a little ground bait behind you as an earnest of your intentions.

Sect. II. *Still Water Angling.*

3330. *Still water angling* next claims our attention; and we, having accompanied our reader to the *moving* waters, will now introduce him to the *still* also, be they of the pond, the canal, or lake, in all which some variations in his practice will be necessary to insure success. The immense sheets of water in some parks, the vast lakes, the extensive broads of some localities, and the meres which are found in some others, all yield fish in plenty and variety; and, consequently, still water angling deserves our full attention.

3331. *Still water fishing* is too apt to be held in light estimation among those who consider themselves professed anglers. As the difficulty of conquest ennobles the achievement, so the angler derives among his fellows little credit from the well filled pannier drawn from such sources; for the fish which inhabit still waters are much less liable to disturbance than those of rivers, their enemies are fewer, and consequently their resistance small: their food, though less nutritive, is yet obtained without address or the exercise of much exertion. They are altogether tamer animals, and take the bait, therefore, with little reluctance, give themselves up without much opposition, and consequently are considered as rather fit for the initiation of young anglers, or as furnishing a meal for the pot-fisher, than fitted to wreath a laurel for the brow of the professed artist.

3332. *The fish of still waters* are generally paler in colour, of a more lengthened figure, and their heads are usually large in proportion to their bodies, as compared with the fish of rivers. Thus considered, we need not be surprised that they not only yield less sport to the angler, but also that when taken they are of less worth to the eater. The relative properties of still waters, as connected with the qualities of their fish, are however greatly dependent on the source from whence they are derived. If they are fed by springs which arise within them, and their waters are carried off at an outlet; or, if furnished by means of a feeding stream, however small, that runs through them, the value of their fish is greatly increased, and even the varieties also. In either of these cases even trout will live, and gudgeons will thrive. Chub likewise, which are more properly a river than a pond fish, will nevertheless attain some perfection here. Two large ponds on the summit of a range of hills in the neighbourhood of Guildford, where we have fished, contain trout, and both are furnished with water from central springs only. Flood waters, which overflow flat lands, and finally rest in some hollow, as that of Dagenham Breach, have usually a large quantity of fish in them swept from the upper grounds; and as the same means by which the fish were brought have also poured in food, so these fish thrive and multiply. Such waters have another advantage, inasmuch as they have always an outlet, commonly by flood-gates, and thus the fluids are changed.

3333. *The usual contents of ponds, &c.* are tench, perch, bream, roach, carp, and its varieties; dace also, with gudgeons and eels. In very extensive waters, pike and jack are found, but in small sheets or ponds they are seldom allowed, as from their voracity they soon destroy every thing around them, except tench, and hunger, we scarcely doubt, would force them to devour these also; otherwise they mostly escape attack.

3334. *In pond angling* little ground bait is necessary, and few use any at all. However, if the water be extensive, we can see no reason why it should not have the same effect here, both as to drawing the fish together, and detaining them when so collected, as in rivers. We have found it so; and in using ground bait in Dagenham Breach, three of us collected such a quantity of bream around us, that we took in one afternoon's fishing a stable-pailful of them. In such places, however, a boat is almost indispensable. We must also observe, that the baits in such waters are generally taken best when near the bottom; and unless the water be very deep, it is but seldom that they bite so freely at mid-water. This is not invariable; it depends much on the wind, the weather, the time of year, and the nature of the fish.

3335. *The fly will be also taken in ponds.* There were three mill-ponds within half a mile of the spot where we resided in Hertfordshire, in which trout would rise freely to the fly, and where, although the natural minnow was never seen, they would take the devil-bait, or false minnow, readily. These ponds however, it must be observed, had a small run of water through them, but not sufficient to give much firmness or colour to the trout. It is also singular that no other fish of size or consequence were known to inhabit either of these ponds. Chub take the natural fly with avidity in such ponds as breed them, particularly if it be first thrown on a dock leaf, or by whipping, when a warm wind ruffles the face of the water. The worm however, as a general bait, is without doubt the most killing for fishing in still waters, and for every fish that is found in them. Worms are bred there in great quantities, and instinct causes them to be taken with much freedom.

CHAP. IX.

INDIVIDUAL FISH ANGLINGS.

3336. *We shall premise our account of the methods of angling for each fish* by a popular sketch of its natural history, with its systematic characters as described by naturalists. We had intended entering more fully both into the natural history and the systematic arrangement of fishes than our confined limits will now allow. We hope, however, to be able to throw some light on the general and particular history of these interesting animals, particularly of such as are objects of the angler's pursuit: these may be divided into those which remain always with us, being constitutionally fitted to live only in fresh water, and those which alternately occupy the salt and the fresh waters, and are from thence called fish of passage.

Sect. I. *The Stickleback* (*Gasterosteus trachurus* Cuvier).

337. *The stickleback, banstickle, or sharpling,* is, we believe, our smallest fish, but is very generally diffused, being found both in rivers and stagnant waters of every part of the kingdom. It is occasionally met with in such as are brackish also. In length it now and then reaches to two inches and a half, more commonly it is found rather less than two. It has large eyes, and a proportionally larger head; the body is full, and the scales of the sides are almost cataphracted or mailed. The back is furnished with three spines, which belong to the three species included in the *G. aculeatus* of Linnæus.

3338. *The lesser stickleback* (*G. pungitius*) is even smaller than the *G. aculeatus*, and remarkable for its more numerous back spines, which are from eight to eleven. It is also more scarce, and fortunately not so prolific as the three spined, whose numbers are such as sometimes to become a serious nuisance. There is a third also, of lengthened dimensions, but not very common. Small as this fish is, it is very injurious to waters by the amazing quantity of young fry it devours. In the *Philosophical Transactions* we are informed by Mr. Henry Baker, that "It is scarce to be conceived what damage these little fish do, and how greatly detrimental they are to the increase of all the fish in general among which they live; for it is with the utmost industry, sagacity, and greediness, that they seek out and destroy all the young fry that come in their way, which are pursued with the utmost eagerness, and swallowed down without distinction, provided they are not too large:" and in proof of this Mr. Baker continues, "I must assert, that a banstickle which I kept for some time did on the 4th of May devour, in five hours' time, seventy-four young dace, which were about a quarter of an inch long, and of the thickness of a horse-hair: two days after it swallowed sixty-two, and would, I am persuaded, have eaten as many every day, could I have procured them for it." The lesser is not only distinguished from the other by its size, which is considerably smaller, but also by the number of its dorsal spines, which are from eight to eleven, instead of three, as in the former. The fecundity of the common stickleback must be very great, since, as Mr. Pennant informs us, it is occasionally obliged to colonise, and leave its native fens, in search of new habitations. The numbers are so immense in some instances, that they are used to manure the land, and trials have been made to obtain oil from them. An idea may be formed of their enormous numbers by this known fact, that a man employed by a farmer to take them for manuring his land, has earned for a considerable time four shillings a day by selling them at a halfpenny per bushel: a similar process was witnessed in the river Cam, where the sticklebacks were caught (with nets like large landing-nets fixed on short handles) by myriads, and applied to the same purpose of agriculture. There is one singularity in the spawn of the stickleback well worthy of notice, that the ova are bigger than those of the codfish. This little fish is the tyrant of the aquarium.

3339. *Walton's notice of the "sticklebag,"* as he calls it, is in keeping with his usual interesting descriptions: — "It is a little fish without scales, but hath his body fenced with several prickles. I know not where he dwells in winter, nor what he is good for in summer, but only to make sport for boys and women-anglers, and to feed other fish of prey, as trouts in particular, who will bite at him as at a pink or minnow, and better, if your hook be rightly baited with him; for he may be so baited as his tail, turning like the sail of a windmill, will make him turn more quick than any pink or minnow can." Brookes's account of the stickleback is somewhat in unison with Walton's. He says, "In the Wandle, where there are few or no white fish, gudgeons, or minnows, it will serve for a bait for a trout if you cut the prickles off, which I have experienced at Cashalton and Mitcham more than once."

3340. *Sticklebacks may be angled for with a hook*, No. 13. or 14., baited with half a bloodworm, or a small piece of a red one; and when caught, a use may be made of them not uninteresting to the lovers of Nature. They may be put into a vase, and kept easily for a considerable time. We saw some that had remained two years in a glass bowl, to which their brilliant colours gave beauty, as their fierceness in disputing for the tiny worm gave them animation. Where these fish exist in any great numbers, they may be given as food to poultry, to which they prove very nutritious, and it is said render them peculiarly prolific by their stimulating qualities.

Sect. II. *The Minnow* (*Cyprinus phoxinus* Linn.).

3341. *Blackish green carp*, with blue and yellow variegations, reddish silvery abdomen, and forked tail. (*Linn. Syst.* i. 528.)

3342. *The minnow, or pink* (*fig.* 516.) abounds in most of our rivers, as well as in most clear gravelly streams and rivulets throughout Europe. In shape and size they have one common character, but they vary much in colour, being sometimes rather blue than green, and the belly is often of a brilliant red, but is most valued by the angler when it is of a pearly white, and less so when yellow. Its scales are very minute, and the lateral line is straight and often gilded. It is gregarious and delicate, and is frequently infested with the *Tænia solida*; we have found *Ascarides* within it also. The minnow appears first in March, continues until Michaelmas, and then betakes itself to the mud, weed roots, or wood in rivers, to secure itself from floods and fishes of prey. Minnows are usually full of spawn all the summer (for they breed often), and quickly arrive at their growth and perfection. Although so diminutive in size, the minnow may be compared for the excellency of its taste to many of the best-famed fish: they are in some places made into *minnow tansies*; after being gutted and well washed in salt and water, their heads and tails cut off, they are to be put with yolks of eggs, well beat with cowslip and primrose flowers, and a little tansy shred very small, and fried in good butter: the sauce to them is butter, vinegar or verjuice, and sugar. The minnow tansies here noted are derived from Walton, and are not we believe much in use at present; but dressed in the same manner as whitebait, the minnow proves excellent, and also when fried in batter. In whatever way they are cooked, they are however found rather luscious and cloying to the palate.

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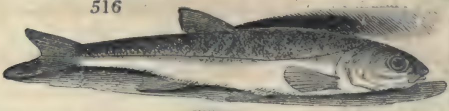

MINNOW.

Subsect. 1. *To angle for Minnows.*

3343. *To the young sportsman*, who has not possessed himself of the patience requisite to form the angler, the minnow yields plenty of amusement. They will in hot weather bite eagerly all day, and are frequently drawn out of the water from their adhering to the end of the worm, without being touched by the hook. The best way to catch them is to have three or four very small hooks, baited with the smallest red worm, or a bit of one, and a crow-quill float: fish deeper than mid-water, or near the ground in shallow places, in eddies, and at the sides of small streams.

Sect. III. *The Bull-head* (*Cottus gobio* Linn.)

3344. *Smooth yellowish olive bull-head*, variegated with black, beneath whitish; the head furnished with a spine on each side. (*Linn. Syst.* i. 452.)

3345. *The bull-head, or miller's thumb*, from the magnitude of its head, is a disagreeable object. Its mouth is very large, and thickly set with minute spiny teeth over the palate and jaws, by which it can prey on insects and young fish with facility. It conceals itself under the hollows of large stones, from whence it darts out on its prey: a habit which cannot but be familiar to the angler, who, when he has dropped a worm on a minute hook by the side of a large stone at the bottom of a brook, must have witnessed the rush made from under it at the bait by the bull-head.

3346. *To fish for the miller's thumb* we will call the venerable Walton into council, who thus directs:—"He does usually dwell and hide himself in holes, or amongst stones in clear water, and in very hot days will lie a long time very still, and sun himself, and will be easy to be seen upon any flat stone, or any gravel, at which time he will suffer an angler to put a hook baited with a small worm very near unto his very mouth, and he never refuses to bite, nor indeed to be caught, with the worst of anglers. Matthiolus commends him much more for his taste and nourishment than for his shape or beauty." We can affirm, from our own experience, that however unsightly may be the appearance of this fish, it is when cooked of a most excellent flavour. We once treated a London friend who savoured rather of the epicure with a dish, and his admiration was extreme; but his regrets were considerable, because they could not be bought in Billingsgate.

Sect. IV. *The Loach* (*Cobitis barbatula* Linn.)

3347. *Yellow grey loach*, with dusky variegations, small compressed head, and six beards. (*Linn. Syst.* i. 499.)

3348. "*The loche*" (*fig.* 517.), Mr. Daniel says, "is found in swift brooks among the gravel, or where there is a soil of mud and gravel together, with weeds, and in several of our rivers by the sides of sharp streams: it seldom rises to the top of the water, keeping at the bottom on the gravel, upon which it feeds, and is on that account in some places called the *groundling:* it is frequent in the stream near Amesbury in Wiltshire, where, out of frolic, the sportsmen swallow it down alive in a glass of white wine. It is little pursued by anglers, and is not a good bait when used: we shall not therefore treat further on it here, than that it is a slimy fish without scales; its figure is long; its mouth small, toothless, but bearded like the gudgeon and the barbel, having on the upper mandible six small beards, one at each corner of the mouth, and four at the end of the nose; the body is smooth and slippery, and almost of the same thickness; the colour of the head, back, and sides is in some white, in others of a dirty yellow, very elegantly marked with large spots, consisting of numberless minute specks; the pectoral, dorsal, and caudal fins are also spotted; the belly and ventral fins of a pure white; the tail, where it joins to the tail fin, remarkably broad without any taperness; the tail fin is broad and rather rounded. One of the largest ever heard of by Mr. Pennant was four inches and three-quarters in length, but they seldom exceed three inches. The flesh of the loche is singularly nutritious, and from that circumstance, and its being equally grateful to the palate, it is recommended to the sick. The females during summer are generally full of spawn. These fish are to be taken with a very small red worm, the bait touching the ground. The loche is used as a bait for other fish, and for eels perhaps it is the best." It is an excellent night-line bait.

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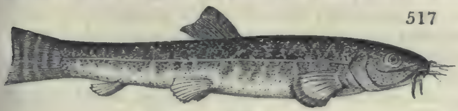

LOCHE.

3349. *The groundling* (*C. tænia*) is another species of the loach, said by Berkenhout in his British *Fauna* to be found in lakes and ponds, and in the Trent also. Turton describes it as to be met with in the clear streams of Wiltshire. It is of the same size as the preceding.

Sect. V. *The Gudgeon* (*Cyprinus gobio* Linn.)

3350. *Silvery olive carp*, with the upper lip bearded, and the dorsal fin and tail spotted with black. (*Linn. Syst.* i. 526.) The gudgeon (*fig.* 518.) is a small but a highly-prized fish. It is pretty universally distributed throughout Europe, and is very common in our rivers, and in most of our still waters, and more particularly of such as have any run through them; but it is in greatest perfection, and in greatest numbers, in rivers of moderate current running over a gravelly soil. Those of the Thames and the Lea are sufficiently known to the London angler, and the astonishing numbers extracted yearly from these streams are sufficient proofs of their fecundity. Some anglers are of opinion that their numbers are accounted for by their spawning twice a year. Mr. Salter considers this as an error, and observes, "I believe they only spawn once, and that happens at different periods in different waters. As, for instance, gudgeon arrive in the Lea, and go a few miles up it, from the Thames, in the spring, and spawn in May; but the native gudgeons of the Lea do not spawn till after Midsummer, which leads to the mistake above alluded to." On this subject Dr. Shaw remarks, that the gudgeon generally spawns in the spring, and is not observed to deposit all its ova at once, but at distant periods, so that the spawning time lasts near a month. Our own observations neither refute nor confirm this, but they serve to convince us that the young fry make their appearance at different periods in different rivers; and that while the gudgeons of one water shall be found shotten, those of another will be in full roe. Captain Williamson observes, "I am much inclined to believe, that the gudgeon spawns both in the middle of spring and about Michaelmas, especially at the latter time, when the young fry may be seen in shoals that darken the shallow sandy, or fine gravelly, bottoms, in which they greatly delight." Some waters, we are of opinion, are more favourable to the growth of gudgeons than others. We do not remember, in our wanderings, to have seen them so large in any river as in the Colne. Mr. Pennant remarks the same, and notices one caught near Uxbridge that weighed half a pound. He also praises those of the Kennet and the Mersey. Mr. Daniel states that he had some in a pond of his own so large, that their average weight was five, or at most six, to the pound. In some of the extensive waters of the distant counties they are also very numerous, and are taken by fishermen in nets, hullies, keils, &c. as much for the purpose of baiting for other fish, as for their own eating, or for sale. In Germany the gudgeon is said likewise to abound; and there, we are told, a smaller variety is also common, called wapper. The gudgeon exhibits a striking instance of the capacity which fishes possess of accommodating themselves to different climates. A wide geographical distribution of marine fish is little to be wondered at, because the temperature of the sea is nearly equal in different latitudes, while the water of rivers must correspond with the temperature of the atmosphere and soil through which it flows. It is a fact that gudgeons are found in Syria, as we learn from Dr. Russel (*History of Aleppo*, p. 35.); and that they are natives of Greece also, we may judge from the mention made of them by Aristotle (lib. viii. cap. 19.), confirms the extent of this capacity in them. The barbel are common to the Nile, which is also another instance. The gudgeon is easily kept, in the aquarium.

3351. *The figure of the gudgeon*, as seen in our cut, is rather lengthened, with a thick or sub-cylindrical body; but this figure is very seldom well expressed in the portraits of it, which illustrate our books on angling. We may probably account for this by the circumstance, that such portraits are usually taken from the fish when it is in full roe, at which time it assumes a rotundity unnatural to its general state, and which is well exemplified in the cut. In its true figure, on the contrary, it is slightly concave, or at least straight along the abdominal surface, and arched on the dorsal. From this we must exempt the figure which heads the article GUDGEON in Mr. Salter's work, where the true character of the fish is very well preserved, although that was apparently taken from one moderately or early in roe. The common habitation of the gudgeon is at the bottom of the waters in which it is found, for which reason it has been called in Germany the groundling, a name, however, more generally appropriated to the loche, a particular variety of it. We have, notwithstanding their pelagic predisposition, occasionally seen them swim, and even take a bait, at mid-water. On one particular occasion when this occurred, they were high in the water opposite a sluice gate; and probably it was to seek an exit that they thus quitted their native bottoms. The currents of moderate streams and of moderate depths are their common habitations. In winter they seek the deeper parts of rivers, &c. and lie close to the sandy or muddy bottoms, apparently to avoid the cold.

SUBSECT. 1. *To angle for Gudgeons.*

3352. *Gudgeon angling* is a favourite amusement with some persons (*fig.* 518.). Many anglers spend much of their time in angling for these fish in the Lea, and still more at what is popularly called gudgeon raking in the Thames. For gudgeon fishing in the Lea, many subscribe to stated localities, and *punt gudgeon fishing* studs the Thames during the summer months with innumerable aquatic parties. Of the fascinations of this branch of angling, Mr. Daniel furnishes us with an amusing instance: — "A clergyman," he says, "minister of Thames Ditton, who was engaged to be married to a daughter of the then bishop of London, overstayed the canonical hour, and the lady, justly offended at his neglect, withdrew her assent;" and we think he thus made a gudgeon of himself, as is too frequently done by many.

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GUDGEON ANGLING.

3353. *Gudgeon fishing in the Lea* is usually commenced towards the latter end of March, and is practised from the banks of the river; and in such practice the professed gudgeon angler would surprise a novice by the fineness of his tackle. His rod is of cane, his line either of fine gut, or more probably of single hair, with a light quill float, usually a tip-capped one. The hook is also as fine as the rest of the tackle, very seldom larger than No. 8., more frequently No. 9., and some prefer for very fine fishings, No. 10. even. The line must be finely shotted to agree with the rest. With some anglers a double line is used; but we think that whatever increase there may be in the numbers taken (and we have our doubts whether they are really increased by this practice), it is truly at the expense of the sport. However, *chacun a son goût.* Some use two, three, or four rods at a time, and are seen dancing from one to the other, as though the ground were too hot to let them rest; or as if they wished to monopolise all the fish.

3354. *The most tempting bait for a gudgeon* is a worm, next to that a gentle or cad bait, and after that pastes. In some countries raw flesh is used for bait. It is prudent to be furnished with more than one sort of worms when engaged in this sport, and the brighter and more lively they are the better; observing, that in placing them on the hook there be very little left to hang from it, for these fish are great nibblers. Our reason for recommending a variety of bait is, that at some times gudgeons seem to prefer one sort of worm, and at others a different kind. Bloodworms are commonly acceptable; two of them should be put on the hook very carefully. Mr. Salter says they take bloodworms best in the spring, and the red worms in the advanced summer season. This may be the case, but in our own experience we have found that they will seldom refuse any kind of worm altogether; but that to the variety with which they are most tempted at one time, they are nearly indifferent at another. To fish systematically, allow no more of the float to appear above the surface of a gently-flowing water than possible, and strike quickly at a bite. In more rapid waters the float itself must be larger, and its tip must be more elevated.

3355. *That the bait must trail on the ground* is a general rule. To effect this, plumb the depth very accurately, so that the worm, &c., when on the hook, may trip along the bottom, suspended, but touching every little rising that presents itself: in fact, the bait in its action should represent a worm accidentally dropped into the water, which having sunk to the bottom, is afterwards carried by the force of the current gently along, and thus meets the eyes and mouths of these groundling fish. The situation in which gudgeons are most likely to be met with is that of a moderate scower, with a fine gravelly bottom, and of a moderate depth, at least, in summer heats. They frequent also what are called sharps, where a gravel patch elevates itself from deeper parts, and which by its inequality detains the edible matters floating along.

3356. *Raking*, or otherwise disturbing the ground, is an essential act in gudgeon fishing. In the great depths of lakes, and some rivers, a pole is used for this purpose, in others a long-handled rake is employed; and whenever any slackening in the biting of the gudgeons takes place, the ground is again disturbed. The rationale of the effect of raking is, that as these fish feed on the insects which harbour among the stones and gravel at the bottom of the stream, as caddies, various minute worms, water snails, &c. &c., by disturbing them with the rake they are turned out of their hiding-places, and instantly snapped up by the gudgeons. On plying the rake, therefore, the surrounding fish hasten to the spot, for the purpose of sharing the spoil, and, as they relax, their eagerness may be re-animated by a new raking, to meet a new supply. A moderate groundbaiting is also good in gudgeon fishing, wherever the extent of water will allow them to rove; and during the angling for them throw in sand and gravel, mixed with morsels of worms, gentles, bread, or sweepings, from the chopping of greaves, &c. If raking be omitted, and no other ground bait be used, still frequently throw in some gravel and sand alone, to excite the fish to rally around in the general stir of matter. Gudgeons often leave a spot and repair to another, apparently without reason, except in search of new food; it is therefore prudent, when the rake has been plied and ground bait cast, and when the gudgeons no longer bite, to try a new swim. Frequent change of place is advisable.

3357. *Fishing for gudgeons* in the Thames is usually practised by means of a punt, which is fixed across the streamy part of the river just above a tolerably sharp scower, running over a fine gravelly bottom, free from weeds, at depths varying from five to six or seven feet. As the eddy is greater generally, and the water deeper, in these scowers than in those of the Lea, so the tackle used is commonly somewhat stronger, and a fine gut line is more frequently met with there than one of single hair. Fine tackle, however, in a good hand, is to be always preferred; and we have seen many hundred dozens of gudgeons taken in the sharpest currents of the river Thames with a single hair only for the two bottom links. Punt-fishing for gudgeon in this river is a delightful amusement, particularly to the indolent angler, who is not inclined to take much trouble. The scenery, the quietude and safety from interruption, the cleanliness of the practice, where the bait is put on the hook by the attendant fisherman, and where even the prize it gains is removed by the same hand, all tend to make it epicurean in the extreme. But the thorough bred fisher is soon tired with it after this method, for the very reason that there is actually too much luxury in it to constitute true sporting, which must of necessity present some labour to keep up the attention, and some difficulty to enhance the value of the prey. In the Thames it is a fact, that even fifty dozen of gudgeons have been taken in a day; but in the Lea it is seldom that half that number are caught. Yet the Lea angler has the best scope for his sport, for he can commence it in March, whereas in all that part of the Thames within the liberties of the city of London it must not be attempted until the 1st of June, at which time the gudgeons have spawned, and continue for some time afterwards inferior in point of their gastronomic worth. Gudgeon fishing seems to have varied little from the ancient practice, and the angler who has aught of the antiquarian about him, will be amused probably at the close parallel between the present method and the gudgeon fishing of early times, as it is described by John Davers or John Dennys, Esq., for it is a disputed point to which of these worthies the *Secrets of Angling*, in which it is contained, owes its birth. Walton ascribes it to Davers, and gives the name at full length in the 5th edition of *The Complete Angler*. The entry at Stationers' Hall, February 28. 1612, has only J. D. attached to it, which has rendered the name of the true author uncertain.

"Loe, in a little boat where one doth stand,
That to a willow bough the while is tied,
And with a pole doth stir and raise the sand,
Whereas the gentle streame doth softly slide,
And then with slender line and rod in hand,
The eager bite not long he doth abide.
Well loaded is his line, his hooke but small,
A good big cork to bear the stream withal.
His bait the least *red worme* that may be found,
And at the bottome it doth alwayes lie;
Whereat the greedy *gudgion* bites so sound,
That hooke and all he swalloweth by and by:
See how he strikes, and puls them up as round
As if new store the place did still supply;
And when the bit doth die, or bad doth prove,
Then to another place he doth remove."

3358. *The instances of gudgeon angling* we have described are sufficient types of the modes employed in all other situations where these fish are to be met with. We have fished for them in many rivers in Great Britain, and in the lakes of it also; but in all we have found the worm the most tempting bait. In both the Severn and the Wye they are very fine, but the nature of these waters requires rather coarser tackle, and the more so as the scowers in them are more apt to be disturbed by other fish, particularly by perch, chub, and trout, which it is necessary to be prepared for; and as the gudgeon has a large mouth of its own, when it is really on the feed, it will not scruple to take a large bait, and a tolerably good-sized hook also. Of the edible qualities of the gudgeon but one opinion exists, and has existed for more than a thousand years. It has been called the fresh-water smelt; and we have seen a display of gudgeons around a cod which have been passed off as smelts, and eaten as such, among the lovers of good living, without suspicion. These fish are in the best state for the table in the spring, or from March and April to May, for at this season they subsist principally on small worms, and the spawn of other fish, which they find among the small gravel they root up in the shallows; but as the weeds grow up, gudgeons leave the shallows after spawning, and feed a good deal on the weeds, which makes their flesh less firm, and in summer it is either of a bitter taste or else tasteless: they also then keep very badly, especially in extremely hot weather. Nevertheless, before their spawning in the spring they are unquestionably the best small fish, excepting the smelt, that the fresh waters produce. Epicures direct that they should be cooked in the frying-pan immediately, or a few hours after they are caught, and without being scaled or opened; for at this season gudgeons feed so clean that there is nothing in the stomachs to offend; therefore they require only wiping with a damp cloth, as is usually done with sprats; for by opening and washing you spoil them. We however, on our own account, beg leave to add, that we have eaten gudgeons with much relish when, after being gutted and split open, and wiped without washing, they have been dipped into a thin but rich batter, and fried. If the frying process be in fine olive-oil instead of lard, although the browning may not be quite equal, the flavour will be found improved.

Sect. VI. *The Bleak* (*Cyprinus alburnus* Linn.)

3359. *The silvery carp.* Olivaceous back, twenty rays in the anal fin, and the tail forked. (*Linn. Syst. Nat* p. 539.) The bleak, bley, or whiting (*fig.* 519.) is so well described by Mr. Daniel, both historically and practically, that we shall quote his account of it. "It is," he says, "ever in motion, and is by some termed the fresh water sprat; and although the Italian salt and skill are wanting to give the true Gorgona flavour, yet by some artists the bleak, as well as the sea sprat, is substituted for the anchovy. The smallness prevents the angler from making this fish a particular object of his attempts, yet the taste is agreeable, and the flesh nourishing. The bleak is seldom more than six inches long; the head is small, and the skull transparent; the eyes are large, with a blood coloured spot on the lower side, the irides of a pale yellow; the under jaw the longest; the gills silvery; the body is slender, greatly compressed sideways, not unlike that of the sprat; the back is green; the sides and belly silvery; the fins pellucid; the lateral line rather crooked; the scales are large, and fall off very easily; the tail is much forked." Bleak are found in almost every river in the kingdom. In the Thames, Lea, New River, the Severn, Trent, and the Wye, they exist in immense numbers, but are seldom stationary, sometimes occupying one part of a river, and at others tenanting another: the deeps, the shallows, and the surface, alternately are their resort. This ubiquity has given them the name of *water-swallow*, which they further deserve by their nimbleness in pursuit of their prey, and particularly in the catching of flies. Their spawning time is early in the spring: the exact period varies somewhat in different rivers, ranging from the end of March to the end of April.

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BLEAK.

Subsect. 1. *Angling for Bleak.*

3360. *Angling for bleak is practised both by float fishing and whipping.* In float fishing the tackle should be very fine, such as is directed for taking gudgeons in the Lea. Those who fish for large numbers use three or four hooks on a paternoster line (*fig.* 484. p. 976.), which prevents the baits from interfering with one another. The baits, as gentles, bloodworms, caddies, paste, &c., should be sunk about mid-water in general cases: in warm weather they take higher, and in cold weather lower than this. Occasionally throw in some ground bait to draw them together, such as chewed bread, dried crumbs, &c., followed by a handful of gravel, sand, &c.

3361. *Whipping for bleak* is excellent practice for a young angler: according to Ausonius, the taking of these fishes was anciently the amusement of children, *Alburnos prædam puerilibus hamis.* It may be pursued at the sides of swift streams and the middle of very gentle currents, such as the New River, which abounds with them. Use a very fine hair line with a black gnat at the end (No. 1.), or otherwise mount one with a very minute ginger-palmer as a stretcher, and two droppers, one of which should be a black gnat, the other a blue (No. 50.). The natural house-fly is also an excellent bait for this nimble fish. It is amusing to see them in a cloudy warm day, or a bright summer's evening, leap out of the water after the baits that are offered them. (See *Fly-fishing and Whipping*, p. 1180.)

3362. *Bleak are not valued highly as a table fish;* they are not only small, but are apt occasionally to taste bitter from hepatic affections: their proneness to vermicular disease likewise unfits them for culinary purposes, if strong stomachs are not recipients. Notwithstanding which, in the spring and autumn, some persons are partial to them fried. We have seen them when thus dressed (having been first dipped in batter, and sprinkled over with a profusion of dried parsley, and that where good living was not a matter of indifference.

Sect. VII. *The Dace or Dare* (*Leuciscus vulgaris* Cuvier).

3363. *Yellow silvery carp.* Back olivaceous dorsal fin, the others reddish, and tail forked. (*Linn. Syst.* i. 528.) Dace (*fig.* 520) are gregarious, and herd together in large droves. This fish is also known under the different names of dare, dart, shallow, and showler, in different counties, and is a great breeder, very lively, and during the summer is fond of frolicking near the surface. Its head is small; the irides of a pale yellow; the body long and slender; its scales are smaller than those of the roach, and it is, upon the whole, a handsome fish; the back is varied with dusky markings, and a cast of yellowish green; the sides and belly silvery, the ventral, anal, and caudal fins are sometimes of a pale red hue; the tail is very much forked. The dace is seldom above ten inches long, although in a list of fish sold in the London markets, with the greatest weight of each, communicated to Mr. Pennant, there is an account of one that weighed a pound and a half, and, according to Linnæus, it grows to a foot and a half in length in some countries.

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DACE.

3364. *Dace are found in most rivers of England,* and in many standing waters also, which have any feeding current running through them. In those which are wholly stagnant they seldom live, and never thrive. They principally, however, inhabit rivers, and delight in their rapid currents, scowers, and eddies. The point of junction between two streams is a favourite resort of theirs, and at mill-tails they may be always found. In some weathers, particularly when it is very cold and windy, they are only to be met with in deep holes, more especially where there is a clayey bottom, with fine gravel over it. Though they resemble the roach much in their habits, yet altogether their haunts are more confined to streams than stills, while the roach is more favourable to stills than streams. Yet they are very frequently found together, the roach in the autumn being drawn by the rotting weeds into the streams and scowers, and dace in very warm sunny weather hiding themselves in deeps which are shaded by aquatic plants, or overhung by boughs. Under the spray or foam of a mill-race they think themselves secure, and may there be always looked for.

3365. *Dace spawn,* according to the nature of the water, from the beginning of March to the middle of April; at which times they may be seen very active among the gravel, preparing their spawn-bed, and may be closely watched without disturbing them, so intent are they on their work. At this season the angler must have observed that their appetites are very capricious: on one day a worm offered will be taken immediately, but the next day probably it will, as well as every other bait, be refused. In a fortnight or three weeks, however, they will again be found in perfect condition.

Subsect. 1. *Angling for Dace.*

3366. *Dace bottom fishing* is not very different from that for roach, and the one is frequently taken when trying for the other, particularly in the autumn, when both retire for a while into the deep currents of rivers. Thus it is that roach and dace fishing is at that time a common sport, as it were, but does not continue long so, for dace, during the dead winter months, retreat to still deeps, and are not so easily tempted to bite then as roach. Dace are also often taken, with barbel, in the autumn months, which shows that they then are beginning to feed low, and are very seldom tempted by the fly at the surface afterwards. The tackle for dace bottom angling should be similar to that for roach, and the baits also should be the same. To roach fishing, therefore, we refer our reader for the necessary information: but it may be observed, that where dace are purposely fished for, without reference to the taking of roach, a larger hook and larger bait may be used; and if the water be strong, for instance, as a mill-race, &c. &c., employ a gut line and a cork float. During the spring season, worms of most kinds (but the red in particular), caddies, larvæ of beetles, or grubs and bobs of all sorts, as well as small caterpillars, are all proper baits; for they all form at this time the natural food of the dace. In this way they will take small water-snails also. In the hot summer months, gentles take the lead: in autumn, greaves and pastes, particularly salmon's roe, are killing. Like roach, they are more frequently taken at the bottom than at mid-water: a tripping-bait is, therefore, the best for them in general cases, but during the summer months it is not always necessary to fish so deep. On the contrary, caddies, bobs, and worms, are often taken by them more readily in currents at nine or ten inches from the ground, or even a little below mid-water in great depths. In shallows of two or three feet deep only, particularly in such as lie in the angle of two sharp streams, or where a swift brook enters a river, or between the race-courses of mill-wheels, where there is a sort of still back water, set the bait to within four inches of the ground. In these spots dace are usually found waiting for the worms and insects that may be brought down, and which, as the eddy whirls them into the still, by its circular impetus, present themselves to the fish in the most tempting form. To imitate this, use a light line with a very fine cork or large quill float, drop it within the edge of the current, so as to gain from it the circular motion for the bait you offer, which may be worm, gentle, or caddis, &c. By this method, dace after dace may be taken as fast nearly as you drop in the line; and we have ourselves in such situations basketed two or three dozen at a time. In most other cases, however, they are not so stationary as roach, and it is necessary to shift the fishing ground often to meet with them. Dace bite sharp, and must be struck quickly; they also plunge violently at first, and should the tackle be very fine, they must be guardedly taken out, or they may endanger it.

3367. *On groundbaiting* in dace angling there is a difference of opinion, some thinking it altogether useless and even hurtful, while others consider it as greatly conducive to sport. We are of opinion, that the propriety of the use or disuse of it is dependent on circumstances. Wherever the nature of the water gives to the angling the appearances and methods employed in roach fishing, use ground baits. If, for instance, the angler be fishing in the sharp scowers of the Thames, by all means use ground bait, as that of No. 1., particularly if hook baiting with paste. When deeps are tried, if worms or gentles are used as hook baits, groundbait with No. 4., but do it rather more sparingly here than in regular roach fishing, for the reason, that dace sooner gorge themselves than roach. Captain Williamson says, "In dace fishing throw in now and then some balls made of browned oatmeal and treacle, as before described, or some ground malt. Do not use any thing for ground bait that they will make a hasty meal of; for they are very greedy, and quickly satiated, not caring to leave what they are eating. In some very sharp, quick, shallow streams, where a tripping bait has a considerable scope, and the ground is unequal, then it is prudent not only to avoid groundbaiting, but also to slip up the float to the top of the line, or otherwise to take it wholly off, and fish altogether without one.

3368. *Night lines for dace*, Mr. Daniel introduces to notice, by informing us that he has caught dace, upwards of a pound weight, upon single night lines baited with minnows for eels. We have known chub take the minnow on night lines, and we have likewise known chub of that size occasionally mistaken for dace; and were it not for the piscatory knowledge of Mr. Daniel, we should suspect that such was the case here. However, all fish are more or less piscivorous.

3369. *Fly-fishing for dace* is, with many persons, a very agreeable amusement. We have met with gentlemen who seldom pursued any other variety of angling, and we know many professed trout anglers, and ourselves among the number, who have whipped for dace for hours with great delight; trout, however, being out of reach. We particularly recollect to have enjoyed it about three miles south of Shrewsbury, where a broad expanse of the Severn produced one of the finest dace scowers we ever met with; and where, from a clean gravel bank shelving to the water, there was such sport as rivetted us two days to the spot, having previously glutted ourselves with perch fishing in the waters of Lord Berwick. In the Thames, also, there may be found several good dace whipping stations, as Richmond, Petersham, Thames Ditton, but particularly at Laleham, which we believe is one of the best situations for it within the general beat of the London angler. In the Colne, after it has passed Denham, and begins to expand itself by the openness of the country, some good dace whipping scowers may also be found. Mr. Daniel makes mention of spots between Richmond and Kew, but they are not equal to those up the river, particularly that at Laleham. In the Trent they occur with the grayling.

3370. *On the subject of Thames fly-fishing for dace*, Mr. Daniel says, they may be taken from the middle of April until the middle of October by artificial fly-fishing with a long line, the fly generally either black, brown, or red, made very small, on a hook No. 8 or 9. The three flies may be on the line together, about a yard asunder, letting the black one be the lower fly, and that alone have a gentle at the end of it, and the other two to be the drop-flies: by this mode many dozens may be taken in the course of a morning or afternoon when they are on the fords, and the weather is favourable, particularly in rivers where the tide flows a moderate height, as for instance in the Thames, between Kew and Richmond Bridges, for every tide is a kind of fresh water to the fish, and as it clears off they will take astonishingly. Their chief biting times are, in hot weather, early or late; in cold, the middle; and in mild cloudy weather, the whole of the day; but after a hot bright sun, they will take the above flies in the clearest water, from a little before sunset until dark. Above Richmond, when the weeds begin to rot, a grasshopper with the first joint of his legs pinched off, and the hook put in at the tail, and used as an artificial fly, does great execution in a warm day upon the shallows. This fishing can only be done in a boat, which is to drive down with the current (having a heavy stone by way of anchor fastened to a rope, five or six yards long, at the head of the punt or wherry: when come to a likely spot, drop the stone, and standing in the stern, throw right down the stream, and then to the right and left: after trying about a quarter of an hour in a place, weigh anchor, and proceed in the same manner at the next probable haunt: use a common fly-line about ten yards long, and a strong single hair next the hook. It may be said that there is less certainty of catching dace in this way than with a float and ground bait; but to those who are situated near the banks of the Thames, between Windsor and Isleworth, so as to take advantage of a still, warm, gloomy day, it will afford much more amusement than the ordinary method.

3371. *Natural fly-fishing for dace* is a very killing method also, but not so initiatory to the young angler as the former: it will, however, prove still more convenient to the bottom fisher than the last, and occasionally makes an agreeable variation in the practice of both. The flesh-fly is a great favourite with dace, and they will take it at all times during the summer, but more particularly in the morning and evening. Whip with a hair line, the hook, No. 10 or 11., which should be inserted into the back of the fly, carrying it so as to cover the barb and fill up the bend: be careful to drop it lightly on the water. Two, three, or four drop links, each furnished with a hook and a fly, may be used at once if thought proper. The natural ant-flies are great favourites likewise with dace, and may be used in the same manner; or they may, as already directed, be sunk below the surface with effect, when these gentry happen to be too dainty to rise for them. The subject of natural and artificial fly-fishing for dace will be again touched on under fly-fishing, natural and artificial. Dace as an edible are not much in favour; nevertheless, we have lived long enough to despise nothing that is sweet and wholesome, however unpopular. At a small inn, or rather ale-house, in a remote situation, with two friends, where retirement and a stream to ourselves were the principal attractive features, a visit to the larder, which was situated in the wash-house, exhibited an assemblage of empty hooks (save one embraced by a lump of fat and rusty bacon), and gave but little promise of future joys in the eating way. As an old soldier and traveller is not often at a loss, we recommended the family oven to be heated, and a huge pie to be made of the roach and dace of our early morning's sport. It was to be thoroughly seasoned, and thoroughly baked, and garnished with boiled potatoes mashed in milk for sauce. Out we sallied, our friends not very anxious to return, the gastronomic prospect of dining with Duke Humphrey being most uninviting, for neither of our friends could fancy the pie. Hunger, however, compelled them to return at the appointed time; the pie smoaked on the board, the murphies were good, cream instead of milk moistened the mass. The savoury exhalation brightened their countenances; and in the end they avowed that, if such was the fare at the Duke's entertainments, they would sojourn with him willingly, ay, even until death!

SUBSECT. 2. *The Graining* (*Leuciscus Lancastriensis* Yarrell.)

3372. *Silvery carp*, with almost even, bluish back, reddish eyes, and lower fins. (*Shaw.*) The graining appears a variety of the dace, which, until the time of Pennant, had escaped the observation of naturalists; a neglect occasioned probably by its local confinement to a few rivers only. That accomplished writer, however, drew it from its unmerited obscurity and gave it publicity, and it remained for the distinguished naturalist, Dr. Shaw, to elevate it to a suitable niche among the British *Fauna*. Mr. Pennant's first notice of it occurs, we believe, in his *Journey to Scotland*. "In the Mersey near Warrington, and in the river Alt, which runs by Sephton, Lancashire, into the Mersey near Formby, a fish called the *graining* is taken, which in some respects resembles the dace, yet it is a distinct and perhaps new species. The usual length is seven inches and a half, and it is rather more slender than the dace; the body is almost straight, that of the other incurvated; the colour of the scales in this is silvery with a bluish cast, those of the dace have a yellowish or greenish tinge: the eyes, the ventral and the anal fins in the graining are of a pale colour."

3373. *The graining is fished for like the dace*, both below and above the water. Worms and gentles are the principal bottom baits, the former being most killing in spring and summer (the fishers of the country recommend the brandling and gilt-tail chiefly), and the latter in the autumn; they will also take all the local insects around them like the dace.

3374. *Graining are likewise taken by the fly*, to which they rise freely in the same manner as the dace; and as their weight extends to half a pound, they are by no means despicable in an angling point of view. Bainbridge recommends purposely that hackle-flies for this fish be dressed on small hooks of the following description: — one from the feather of the starling's wing, and another the bright hackle of a golden plover, both of which he speaks of as very killing: they will likewise take the red spinner extremely well (No. 43.), and both the large and the small red ants (No. 52. and 55.) The sandy feather of a landrail for wings, and a bright gentle for a body is also said to be a favourite bait for this fish. The graining is stated to be very superior in taste to the dace, and even to be excellent: we never tasted them, and have seen but few.

Sect. VIII. *The Roach* (*Cyprinus rutilus* Linn.)

3375. *Yellowish silvery carp* with brownish back, lateral line curving downwards, and red lower fins. This is a handsome fish (*fig.* 521.) either in the water, or fresh out of it. It inhabits many of our deep still rivers, affecting, like the others of this genus, quiet waters. It is gregarious, keeping in large shoals: it has a small head, a leathery mouth, which is round and also small, with the teeth in the throat; large eyes, the circle of which resembles gold colour, and the iris red. The roach is deep but thin, and the back elevated; the scales are large, and easily fall off; the fins are in general red, particularly whilst in perfection, as they may also be known to be by the smoothness of the scales, which when out of season feel like the rough side of an oyster-shell; the side line bends much on the middle towards the belly, and the tail is a little forked. It is popularly considered so silly a fish that it is named the *water sheep*, in contradistinction to the carp, which for its subtlety is termed the *water fox*. The proverb of *sound as a roach*, appears to be not peculiar to this country: the French have the same idea, who compare people of strong health to their *gardon* (our roach); yet this fish is not more distinguished for its vivacity than many others.

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ROACH.

3376. *The distribution of the roach* is almost universal, and they breed profusely as well in ponds, meres, and marshes, as in rivers and lakes. In the extensive marsh lands of Philip Bennet, Esq., near Tollesbury in Essex, whose residence and manorial rights we rented some years ago, there are several stagnant pools of great extent, all of which, in common with such vicinities, are very slightly brackish. Some seventy or eighty years since these were overflowed by an eruption of the sea, and the quantity of roach destroyed was such, that the dead were taken away, it is said, in two waggons, as well for manure as to prevent the injurious effects of their decay. Dr. Bloch informs us, that on draining the marshes about the Oder, so great a quantity was taken, that the fish were used about all the neighbouring villages for the purpose of fattening the swine.

3377. *The roach is generally described as an incautious silly fish;* but this opinion was probably at first hastily founded on its readiness to take any bait when confined in very close situations, as small ponds, &c. Such a character once attributed to it has, through the unfortunate habit of writers in copying the statements of others without examination, been rendered prominent; and thus in many other cases endless error is propagated. Our own experience makes us decidedly deny this to be the true character of the roach, and many instances within our own knowledge have confirmed that decision in our minds. One, which is immediately connected with the above waters, will afford ample proof of it. The largest of these marsh pools of the Tollesbury Marshes was very long but narrow, so that a very large net would reach completely across it. Its extent may be judged of by its having a boat-house and boat attached to it. From the former facts, with regard to its prolific nature, as well as from observations made on the seeming quantity of fish at present within it, which appeared to equal those destroyed by the flood, we conceived a design to draw it; and the Rev. George Driffield making this intention known, begat an offer from another divine of great sporting celebrity in Essex (Mr. Barker Daniel) to lend both his valuable assistance, and a net of extraordinary dimensions and very great value, being formed entirely of silk. The expectation of a "miraculous draught of fishes," had drawn together a vast body of spectators and assistants; and the worthy divine himself attended to direct the operations of his net. He was a very otter in the water, and for some hours he was either swimming or diving within it, or employed on the banks around it; and seldom had there been more interest or activity displayed than was now exhibited by all parties to prevent the escape of the roach, either above, below, or at the sides of the pool: and so varied were the means made use of, and so completely did this extensive and fine net cover every inch of the water, that it was thought impossible that a single fish hardly should escape. After more than three hours had been thus taken up, the end of the water was reached, and preparations were made to hawl out. Expectation was now at its height, it was, *parturiunt montes;* the net was landed, and it was, *exit ridiculus mus;* for some eight or ten roach, we forget the exact number, were all that appeared; and the next day the water provokingly exhibited its multitudes as before. As this marsh was very strictly preserved, and in fact we believe a line did not get wetted there once a year, the fish could not have become artful by persecution. Theirs must have been instinctive cunning employed in self-preservation: and it was the general opinion of those competent to judge, that finding themselves thus closely beset, one part had forced themselves within the interstices in the banks made by the willows and alder stumps which were very numerous, and that the others had, like carp, simultaneously plunged themselves into the mud below, which was some feet deep.

SUBSECT. 1. *Angling for Roach.*

3378. *Roach fishing* affords a striking proof, that with very few exceptions our angling treatises are all much too local to be generally useful. They are almost all written for a particular locality only, and however well they may describe the individual fish, with their habits and methods of capture in any one immediate district, yet altered as these become frequently by the external agencies around, which equally operate on the fisher and the fished, it would become absolutely necessary to collect from very extended sources to obtain any thing like a *general practical knowledge* of the art, or of the fish connected with it. It is thus that Bainbridge expends half a page only on both the natural history of the roach and the mode of angling for it, and a third even of another is devoted to assure us, that in themselves they are good for little, *and the sport derived from them good for nothing.* Salter, on the contrary, has presented us with seven closely written pages, expressly devoted to pure roach fishing; and we should think the numerous minor remarks and notes on the same subject, scattered through his work, would make three or four more. Moreover, we believe that no London angler, and not many country ones either, would think there was a word too much.

Mr. Daniel likewise favours us with a dozen pages on the roach, and the different methods of taking it, which attention to the subject on the part of reputed authors is sufficient to show, that although in Mr. Bainbridge's neighbourhood this fishing is lightly esteemed, in other localities it is considered a *first-rate sport.* We should, however, in justice to Bainbridge's excellent work, not forget that it is expressly written to exemplify the practice of fly-fishing, and roach are not attractive subjects of that art, though we think dace have some right to be so considered. Mr. Bainbridge only treats of the roach, as occasionally taking the fly.

3379. *The best season for roach fishing* is from autumn until the following spring. In May they usually spawn; occasionally it is both earlier and later: after they have spawned they continue out of season for several weeks, hardly recovering until the latter end of July, which is not to be wondered at when we consider the debilitating effect of such a quantity of ova, the grains of which in a single fish have been reckoned, and were found to amount to fifty-four thousand, which must consequently require a very copious supply of milt from the male to fecundate.

3380. *Roach angling* offers much interest to the piscatory amateurs, who are shut out from the higher pursuits of fly-fishing. The roach is an elegant fish when taken, and we have shown that it requires some skill to deceive it, while its game qualities are such that it contests the matter with the angler to the last, so as to yield no small triumph when landed. We have seen a roach of a pound in a strong current in the Thames raise the blood in the face of an angler of fair fame. They also, when in condition, bite freely; but we consider that the principal hold they have, or ought to have, on the angler, is their great plenty, the numerous methods that may be employed to take them, to which may be added the time of year that sport may be obtained with them, which is, when few other fish yield any. From the bottom of the water, every inch of the way up to the surface, they may be fished for in various manners; and when they are sunning themselves at the top, they will take a fly with the best. Nay, they are occasionally caught by a hook baited with a minnow, and if report be correct, have even been trolled for. No fish whatever exerts the capabilities of the angler so extensively as this; even the grayling (whose versatility in yielding sport is great also) must nevertheless give place to the roach, a precedence which we think will always rank it as a distinguished member in the piscatory list; and this opinion, from one devotedly fond of fly-fishing, may be considered as something in favour of its tribe and qualities.

3381. *Roach* sometimes attain considerable size. Pennant, on the authority of a respectable fishmonger, mentions one of five pounds. Walton notices another that he saw of two pounds. He informs us that in his time the largest roach in the kingdom were in the Thames; and that they had frequently been taken near Kingston, of two pounds and a half in weight. We have ourselves taken one of nearly two pounds in the Avon, at Downton, in Wilts.

3382. *The London professed roach fishers* use a very light but long rod, with a tolerably stiff top. Many prefer one of cane or bamboo for its lightness, which is of some moment, where the tool is eighteen or nineteen feet long, and some will not use one shorter. A considerable length of rod is absolutely necessary to command a sufficient swim without exposing the angler to the sight of the fish. It must be also remembered, that although this, in common with every rod, should be elastic, it must by no means be too limber or flexible, or it will not strike the fish smartly. The action of the wrist would be lost, or communicated too slowly, when it had to be diffused through the elasticities of too pliant a rod. With regard to the line, the most expert artists, and such as pride themselves on their perfection in this particular branch of angling, will seldom use any but one of single hair: others use the finest gut procurable, especially for the lower portion of the line. Some, again, employ a line made of two hairs twisted for the upper part, and allow two or three feet of the lower portion to be formed of one hair only, by which, should a fish break away, the hook only is lost, and not the float.

3383. *This practice we recommend;* for although we never had so much dandyism in our own roach fishing as to make use of floats worth five or ten shillings each, yet a truly good swan's quill, or reed float, is not easily replaced (p. 981.). This method of making the line is, we believe, pretty generally adopted among the professed roach fishers of both the Lea and the Thames, particularly the Lea, and by a few in the neighbourhoods of other large rivers of the kingdom; but by far the greater number fine gut is employed, from the uncertainty of retaining with hair the fish which may be hooked. It is however certain, that he who fishes finest for roach and dace will be most successful. In our instructions for the making of bottom lines this subject meets further notice (p. 970.). Neither is the danger of breakage in the use of hair equal to what many suppose it to be: a single hair in a fine hand will kill a heavy fish, of which one proof among many may be noted:—"In October, a chub, weighing six pounds three ounces, was taken in a subscription water of the river Lea with a light hair line, and a hook (size No. 10.) baited with paste. The singularity of the fish, in its wanting the two belly fins, and its being killed with such fine tackle, induced the party, and some other members of the Amicable Society of Anglers, belonging to the Horse and Groom at Lea Bridge, to have the said chub preserved and fixed up there for the inspection of the curious naturalist and angler." We could furnish many other instances of heavy fish being safely landed with a single hair line only. We need hardly recommend that each individual hair on such line be first tried before it be whipped on with the others.

3384. *The hook in roach angling* should be as fine as the line; when of single hair, it may be No. 9 or 10. Mr. Salter recommends No. 11., and in the depth of winter, when the bitings amount to little more than a nibble, this will not be too small. If a gut line be employed, the hook may be No. 8 or 9.; and we would advise that, to take off the glare of the gut, and make it as little conspicuous as possible, it be stained very lightly of a pale water blue. It was likewise our own practice to shorten the hooks we used for roach fishing, by removing nearly one-third of the shank; and if anglers were once to adopt these curtailed hooks in their fine fishings, they would never afterwards make use of any other: they are particularly applicable in the present case, from the diminutive size of the mouth of the roach. The shotting of the line should engage as much attention as the rest, that the lead may not scare these timid gentry. The method of shotting has been before dilated on. It is only necessary further to remark, that unless there be much wind, or a strong ripple from current, &c. there should be somewhat less than a quarter of an inch of the float to appear above the water. The length of line from the float to the rod may vary according to circumstances, as from eighteen inches to two feet; but the shorter it is, the more command will the angler have over the extreme fine winter bites even of the largest fish. As already directed in dace fishing, let the float, the line, and the point of the rod be always perpendicular to each other; and carry the line lightly but perfectly extended, that there may be no time lost in drawing it tight before the stroke, which lost time is a momentary signal to the fish to quit; for in this case his notice to *quit* is given ere the angler's notice to *detain* him arrives. Practise striking from the wrist when you are fishing for roach, or you can never become a perfect roach fisher: the arm and elbow should be nearly motionless at the time of the stroke. During our own noviciate, we were roach fishing within ken of our master. The first bite which occurred, we struck lustily with our arm. "That's right," said our friend, "whales are scarce here; but I am sure you have got one." We certainly had taken something, but it was the rebuke and the experience; for we got deservedly laughed at, and had lost our hook and part of the line. We had received a practical lesson, and we were afterwards prepared to give one: but as to ourselves, we never needed another.

3385. *The baits used in roach fishing* among the professed London roach fishers, are principally gentles and pastes. In rivers, lakes, and ponds, remote from the metropolis, although gentles are used, yet worms are chiefly depended on. It is only in rivers and moving waters, however, that the roach is estimated as an object of much sport; and consequently it is for them only that the angling for it is studied and practised with a degree of refinement and science unknown to the other. Salter observes on this, that "the taking of thirty pounds' weight or more of roach, from six or eight ounces to a pound or upwards each fish, out of a stream from six to seven feet deep, with a very light rod, single hair line, and No. 10 or 11. hook, in a day's angling (which is frequently done by the London anglers), affords a proof both of dexterity in the art and attachment to the sport. Indeed," he adds, "I am acquainted with many anglers who seldom wet a line but for roach, preferring it to every other kind of fishing."

3386. *As worm baits*, the marsh, the brandling, the blood, and the red, are all taken with eagerness by roach when they are on the feed; but the worms should be well scoured to insure success, as already fully detailed (p. 1002.). Worms may be considered as the early spring bait. In its more advanced periods, worms alternate with caddies, with larvæ and pupæ, or bobs and grubs of all sorts. Salmon's roe is a favourite bait at this season with some anglers, who find it taken freely by roach, particularly in the still deeps of rivers. Gentles are employed for the advanced summer and autumn months, while pastes of various kinds, particularly the stale bread paste for still waters, and the new bread paste for streams and currents. For the modes of baiting the hook, &c. with these several articles, we refer to the baits themselves (p. 1034.), where full instructions will be found.

3387. *When angling in a tide river for roach*, it is essentially necessary to try the bait at various depths, for roach then never remain stationary, particularly from the time the water is flowing until high water. To this period they commonly bite well, but as commonly they cease as soon as the tide turns, except there be a fresh in the river, when they will oftentimes take in the ebb also. In navigable rivers, as the Thames, which have the waters impounded to assist the navigation, choose those days on which there is what is called a flash (*i. e.* a flush of water) let out of the pounds and locks. In all these cases the fish lie in wait for what the disturbed states of the stream bring down. Should the current flow very strong, remember to try for them towards the sides of the stream.

3388. *The season for roach fishing* in the Thames above the metropolis begins about the latter end of August, and continues longer than any, for professed anglers choose to brave the winter. In the summer the roach live among the weeds, which they do not quit for the deeps until the weeds become putrid, which depends on the dryness or wetness of the weather, much rain hastening their decay. This change of situation the fishermen all along the river carefully notice, and except a few of them, who are attendants on anglers, they one and all set to work to sweep them away with their drag nets. It requires, therefore, that the angler be also on the watch at this critical period, for, after boat loads of roach have been carried to Billingsgate, his sport will be ruined. Happily this seldom occurs now.

SECT. IX. *The Rud* (*Cyprinus erythropthalmus* Linn.).

3389. *Slightly gilded olivaceous carp*, with brownish back, reddish eyes and fins. (*Shaw's Linn. Syst.*) *Cyprinus erythropthalmus, C. pinna ani radiis quindecim, pinnis rubris.* (*Ibid.* i. 530.)

3390. *Dr. Fleming's characters and arrangement of this disputed fish* are as follow:—*B. orfus*, rud: mouth without beard, body deep. Synonymes: *Rutilus latior*, rud or tinscale (*Will. Ich.* 252.); *C. orfus* (*Linn. Syst.* i. 530.); rud (*Penn. Brit. Zool.* iii. 363.); *C. orfus* (*Bloch. Ich.* tab. xcvi.). This fish has occasioned so much disputation among naturalists, that we shall not enter into a long description of it; nor are anglers wholly agreed upon it, except that it is not a very important object of sport. In length the rud is from twelve to sixteen inches; body deep and thick; head small; irides yellow; scales large; back olive; sides and belly of a gold colour; ventral, anal, and caudal fins red: spawns in April. This fish, according to Willoughby, is found in the lakes and rivers of Yorkshire, Lincolnshire, and Oxfordshire. Pennant and Bloch inconsiderately refer this species, so well described by Willoughby, to the *erythropthalmus* of Linnæus, which is also the erythropthalmus of our venerable ichthyologist. The serrated spinous rays of the dorsal fin induced Fleming to place it along with the barbel, from which, however, it seems to differ generically in shape, and the absence of a beard. It may be termed, after Willoughby, *Rubellio fluviatilis.* Dr. Foster supposes the rud to be between the carp and crusian. (*Brit. Zool.* iii. p. 310.)

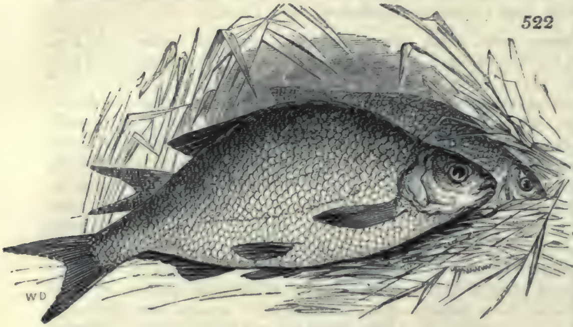
3391. *The rud*, although scarce, has been found in the Thames, the Lea, and in Dagenham Breach; but it does not abound in the two former: it is, however, said to have been common in the latter. It is found in the ponds in Wanstead Park. Mr. Daniel makes mention of one accidentally taken with a minnow at Kimpton-Hoo, near Welwyn, Herts; and Captain Williamson, likewise, was informed of one which was caught in the Nen, near Wansford. Mr. Pennant considered the "shallow" of the Cam (which, he says, grows to the length of thirteen inches, and spawns in April,) and the rud of other rivers as the same fish. It may, however, be remarked against this, that the "shallow," or "showler," is a provincial name in the north-eastern counties for the dace, which is hardly likely to be mistaken for the rud.

SUBSECT. 1. *To angle for Rud or Redeye.*

3392. *To angle for rud* requires only to use tackle one degree stronger than for roach. The baits, and the methods of applying them, are the same as those made use of for roach. This similarity was noticed long ago by Moses Brown. On this angling that old but intelligent compiler, Dr. Brookes, observes, "They bite freely, struggle hard for their lives, and yield the angler good diversion. They feed near the top of the water, and the principal baits for them are red worms and flies." Captain Williamson says, "The rud being a great struggler, must be angled for with strong tackle, such as hook No. 5., on good single gut, without shot, and allowing your bait, for which a fine bloodworm or a cad bait is preferable, to play about with a very gentle motion, about a foot deep, among weeds that are not very thick, now and then lowering your bait to mid-water or more. Angle in this manner in the deep bends of gently-meandering streams; early and late, when the weather is close and sultry; but when there is a moderate, ruffling breeze, you may catch them at all hours, especially in the spring and fall; and sometimes in the winter, when the weather has been mild for some time, and there falls a little sleety rain. The rud will sometimes rise with great avidity at a neat brown fly, or at a red spinner; but they are extremely cunning, and are more easily taken by means of a natural fly, especially the grey stone-fly and the yellow cowdung-fly, both of which they seem to be partial to. You may occasionally use other baits, such as gentles, baked wasps, and the salmon's roe; but, in my opinion, the worm and high-coloured cad bait are by far the best." It is singular that Captain Williamson should add his belief, that the rud is never found in ponds: he even attributes the death of the one recorded to have been taken in the Nen to the circumstance of its being put into a pond. It was more probably occasioned by its being in full roe at the time; but the want of information on the subject of the *habitat* of the rud, is a little extraordinary in so intelligent an author, for we believe it is notorious that they live perfectly well in stagnant waters. Mr. Salter even says that they thrive best in ponds, but that there they seldom exceed a pound in weight. They are, as far as our own opinion goes, always more brilliant in colour, firmer in flavour, and altogether they thrive better in such *still* waters as have sand or gravel for a bottom; but isolated instances, without corroboration, form bad precedents, and the recording them misleads. Animals may, by introductory processes, be brought to exist in localities very different from those to which they were native, and on food to which they were before unused; such are the powers with which Nature has invested them for their preservation.

Sect. X. *The Bream* (*Cyprinus brama* Broch.).

3393. *Broad olivaceous carp* (*Abramis brama* Cuvier, *fig.* 522.), has a flesh coloured abdomen, smallish dorsal fin, and twenty-seven rays in anal fin. It is a large rhomboidal shaped fish, with a high arched back, and sides disproportionately compressed. The head is small, and the snout rather pointed, ending in a remarkably small mouth, void of teeth: the eyes are large and full. This fish is strongly characterised by its lateral line, which is wavy and tortuous, being incurvated from the gills downwards into a kind of bow, the lower arm of which extends much nearer the belly than in any other member of the cyprinus genus. From this it rises somewhat, but is still continued low compared with its usual course, and is again once more bent in its passage, as expressed in the figure. The scales are large, elevated, and sometimes covered with minute tubercles; the dorsal fin is rather small, and its second ray is longer than the others. The anal fin will be seen in the figure to extend from the vent almost to the tail, which is deeply crescented or forked. In some specimens, at the base of the ventral fins on each side, a mammillary process is seen; in others, very faint traces of it only can be observed. In colour the bream is of a bluish black above, with the side and belly white; but when it has become large, and is in very high condition, it gains a golden tinge. This well-known kind in the Trent is called the *carp bream*, in contradistinction to another variety common also there, known as the *white bream*, which latter never exceeds a pound in weight, neither does it become tinged with yellow. (*Linn. Trans.* xiv. p. 587.)



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BREAM.

3394. *The internal conformation of the bream* presents a very long liver, which lies between the stomach and intestine, having its gall-bladder almost imbedded within its parenchymatous substance. The spleen is angular; one flexure only exists in the intestinal canal, and the air-bladder or swim presents two lobes. Their existence seems to depend on circumstances not familiar to us. Some waters, apparently well adapted to their growth, are entirely destitute of them; while in others, not to common observation very different, they swarm. They are not often met with in the Thames or Lea, but in the Mole they are numerous. Brookes says he has seen at least fifty brace together at Esher Bridge. In the Wey also they are plentiful, as well as in the Byfleet, in the wet docks of Blackwall, and in many other fleets, meres, and slow deep rivers throughout England; as well, likewise, in some of the lochs of Scotland. Mr. Pennant makes mention of them particularly as occurring in Lochmaben. Bream attain in favourable waters to a considerable weight: they have been seen of ten pounds even. Gesner informs us of one he saw which was a yard long, and two feet broad. Their usual size, however, is from one to two, and occasionally three pounds' weight. In Dagenham Breach they are extremely numerous; and whenever they thrive, they are observed to prove so prolific, as to destroy most of the other residents by leaving them nothing to feed on. For this reason they are cultivated to advantage in large pieces of water where pike are kept, for which they serve as a never failing supply of food. Bream thrive well in waters that have oozy bottoms and still deeps; and they are not hurt by such as are slightly brackish. They are gregarious, swimming in shoals: in hot weather they are found very near the surface; at other times they resort to the deepest and broadest parts of a river, but are seldom to be met with in the confined narrow places of any water. Bream spawn in June, retiring for that purpose to the weeds, and continuing out of season some weeks, during which they will seldom take a bait well.

Subsect. 1. *Angling for Bream.*

3395. *Angling for bream* is a lively amusement for the bottom fisher, for if he keep well out of sight and be dexterous, he may take a very large number of them, and this in some situations within a very short time: except during their spawning season, they will seldom refuse a bait in the mornings and evenings of bright warm days. When it is windy, warm, and gloomy, they will take a bait freely throughout the day; and a drizzling warm rain in still waters, as in Dagenham Breach, is favourable to their biting. Bream in the spring months take a worm in preference to any other bait: they are also at this time in full season. In angling for them, we always baited with a red worm by choice. The tackle made use of in bream angling should be exactly similar to that directed for the rud, that is, it should be strong but fine, with a running line attached: a gut line is the most proper, with a quill float for still waters, but a cork one for currents, in which situation they are, however, less likely to be met with: the hook may be No. 7., 8., or 9., according to the size of the fish in the water. Ground bait attracts them much; and it adds much to the sport to throw some in the evening previous: its nature should of course accord with the hook bait.

3396. *For bream in broad waters with reedy shores,* it is not altogether uncommon to employ two or three rods at a time, which are each of them supported among the weeds by means of a fork stuck in the ground, or by the reeds themselves, the angler nestling himself within them likewise in such a manner as to command a view of the three rods, but to remain unseen by the fish; of course a bite at any one of the hooks calls him out. We saw one of these anglers thus employed in fish-murder in Dagenham Breach, and his zeal had nearly made him fish-food also, for he slid in; and those who know the reedy shores of the Breach must be aware, that it is as bad a situation for a hasty exit, offering as few resources for retrieving a fall as one might (if wickedly inclined) wish another to meet with. We were happy to assist the wight out, but were not very sorry to see him get a good ducking. He afterwards observed, that "he thought he should in future content himself with fishing with one rod at a time." It is a vulgarism, but very applicable here, that "fair play is a jewel." With one rod, a true angler will have both sport and fish; with two he may take many fish, but without what we should call sport; and with three he deserves to lose his fish, sport, and all, except he be fishing for bread, and then we may wish him good luck. This many-rod fishing for bream, and equally for carp also, derives its origin from Walton, who is most circumstantial in his detail of the apparatus and process necessary for it, and from him it has descended in various "shapes, until we find it even more enlarged on by Mr. Daniel, who recommends that to each of three rods should be a silk and hair line, armed with a lead of a form resembling an *upright brass weight,* the upper end of which should be attached to the rod line, and the lower to the hook line, at ten inches from a No. 4. hook. Groundbait over night, and on the following morning, by three or four o'clock, proceed with great caution to the place so as not to be seen by the fish, some of which are frequently at the top of the water, while the rest are feeding beneath. Having baited the hook that the worm can move on it at bottom, cast it, and by drawing it gently to you, let the lead rest about the middle of the ground bait: a second rod should be a yard or two above, and a third, one or two below it: retire from the water so far as just to perceive the top of the floats: when there is a bite, the top of the float will sink suddenly, remain quiet until the line goes clear away, then creep to the water side and give as much line as possible: if it be a good carp or bream, it will go to the farther side of the river, strike gently, and hold the rod at a proper bend that it may tire him, for if both pull together, either line, hook, or hold will break, and the fish will be lost. The bream is strong, and runs hard when first struck, but after two or three turns he will fall on his side, which enables you easily to land him: the carp is far stronger and more nettlesome than the bream. It is advisable to use a reel upon the rods for carp, barbel, or bream; the length of line kills the fish with ease, and increases the angler's amusement." With all that deference which we think due to the venerable Walton, we should have been better pleased with some instructions from the reverend compiler's own note-book than these by-gone practices of the old school. The following is better: — "Another mode of catching bream is, after plumbing the depth, put one or more shot a foot below the float to balance it, which is a way to take the shyest fish; the bait, a large red worm, which must be laid in and let sink very gradually to the ground bait: when the fish bites, strike gently that very instant." The next is on a par with the first: — "Take a running line with a bullet and hole through it, and a small shot to hinder the bullet falling on the hook: let this run on the bottom with the current into holes, and, equally as for the bream, it will be found to answer for all other fish that bite at the bottom."

3397. *Bream will likewise take caddis-bobs and grubs,* and all the other usual larvæ. In the large rivers of the midland counties, as well as in the great pieces of water called broads, meres, fleets, &c. the salmon-roe is also an excellent summer bait, and will be seldom refused by them: they will likewise take natural flies, as the house-fly, flesh-fly, stone-fly, during the day, and in the evening they seldom refuse the various moths. In dipping with these baits, the utmost possible caution must be observed by the angler to keep himself concealed, for the moment bream discover any one near they sink to the bottom immediately; though, as they very soon appear again, the mischief may usually be repaired. In these cases it has been our practice, first to suspend the rod, so that the top might be lowered at pleasure: we have then, when it has been possible, placed ourselves so as to be sheltered by rushes, reeds, or foliage; if these were not at hand, we have screened ourselves by sitting or reclining, and when settled in our position we have dropped our rod point and commenced our angling out of the view of the fish. The bream is not always a quick biter, and even when it is, its small mouth sometimes produces a kind of suction, particularly if the bait be a full sized one: it is therefore necessary to strike with some caution, and the proper degree of it will be best taught by a few successful and a few unsuccessful bites. We know an angler who frequented the water lately alluded to, who in the midst of bream, carp, and perch, had so quick an eye and so sensitive a hand, that he would call out the bite of the fish at the moment of striking, as a carp! a perch! a bream! and three times out of four he proved right. On one particular occasion, when he was showing off in this way, we met with a ludicrous circumstance: the halloes of "carp, bream, or perch" were suddenly interrupted by a vociferation of *the devil!* and certainly his line was hauled under the water by something that pulled at a d—l of a rate: the tackle was good, and at length we landed a large eel, which had evidently taken the bait of a night line, and its struggles having loosened the bank peg, it was now swimming about in a miserable state with the bait hook within it, in which way it had come athwart our friend's tackle, and produced this *d—l of a bite.*

Sect. XI. *The Chub* (*Cyprinus cephalus* Linn.).

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CHUB.

3398. *Silvery bluish carp,* with olivaceous back, thick head, and rounded snout. As regards the character of the chub, it is somewhat singular that both Drs. Shaw and Donovan should have fallen into the error of considering it as the *Cyprinus jeses* of Linnæus, into which they appear to have been led by Bloch, who, when describing his *Le Villain* or *C. jeses,* adds, *Pennant se trompe, quand il croit que le céphale de Linné est son chub; car la figure de la nageoire, de la queue, et le nombre des rayons dans les nageoires de l'anus, prouvent que ce sont deux poissons différens.*" (*Ich.* tab. vi.) The *C. jeses* Linnæus describes as having fourteen rays in the anal fin, whereas the chub has eleven only. The chub, or cheven (*fig.* 523.), is common in the English rivers, and in other waters which have a stream passing immediately through them. In the Thames and Lea they are numerous, and furnish the London angler with great amusement. It is a powerful fish, and will stem rapids, and swim with great force against currents. It is however timid in the extreme, retreating to the bottom of the water at a shadow even, but re-appearing soon after. It is, like the other members of this genus, without teeth in the mouth, and has, like them, a compensating bony appendage to the palate: the lateral line runs parallel to the abdominal flexure. Internally it presents a long stomach: the intestinal canal has one considerable flexure only; the liver is lobular; and the air-bladder or swim is two-lobed likewise. Chub feed on aquatic insects, and also on all the *Coleoptera* and their larvæ, as well as on insect larvæ generally. Winged insects of every description they pursue with greediness, and sometimes also the lesser fish are objects of their attack. This fish takes its name from the size of its head, not only in our own language but in others. We call it chub, according to Skinner, from the old English *cop,* a head; the French, *testard;* and the Italians, *capitone.* In different parts of England it is called chevin, nob, or botling. It much resembles the carp, but is of a longer form: the body is oblong, rather round, and of a pretty equal thickness in the greater part of the slope; the scales are large; the irides silvery; the cheeks of the same colour; the head and back of a deep dusky green; the sides silvery, but in the summer yellow; the belly white; the pectoral fins of a pale yellow; the ventral and anal fins red; the tail forked, of a brownish hue, but tinged with blue at the end; and the chub is altogether a handsome fish. Chub arrive at considerable size. We ourselves took one in the Lea with a black silver twist palmer, weighing upwards of five pounds, which is however rather an unusual size for one in this much fished river. In the Thames one of three pounds even is a fine fish; but in favourable situations, and where they are allowed to reach their full growth, such fish as the above are common. Captain Williamson states, that on one evening he saw four caught under a weir, of which the smallest weighed eight pounds, the largest more than nine. Bloch informs us, that eight pounds is a common size for them in Germany: Salvianus affirms likewise that they arrive to eight and nine pounds' weight in many waters of the Continent. The chub spawns in April, and regains its condition in a few weeks: during its emaciation, however, it will take a bait moderately well.

3399. *The situations in which chub are most likely to be found* are deep rivers having a clayey or sandy bottom, and one that is also bounded by clay or marl banks. Sometimes they are to be met with in rocky rivers, but such are always found to have some deeps with soft bottoms of their own, or are found to communicate with waters which have. In fact, chub thrive only in such rivers as present a diversity of rocky and strong gravelly currents, widening occasionally into large and deep pools where sand and ooze accumulate. It is here they flourish, and such situations they choose as their winter hiding places. In chub rivers such pools are never without them at any season, which has given rise to the angler's adage, "Once a chub hole, always a chub hole." In summer, river chub shelter themselves from the heat, more particularly in such deeps and pools as are overhung by foliage or trees. In stagnant and open waters they hide themselves under aquatic plants. At the bottoms of weirs, flood-gates, locks, and mill-aprons, they are also commonly to be found.

SUBSECT. 1. *Angling for Chub.*

3400. *To angle for chub.* This practice differs but little from that of dace fishing, with the exception of the strength of the tackle. The same, or perhaps a little more, caution is requisite: the same care that the line, float, and hook, be as fine as is consistent with safety should be taken: and the same baits, with little difference, answer for both anglings. Chub are valuable appendages to the bottom fisher's sporting list; for they, like roach, may be angled for all the year round. They will take a variety of baits also, and in a variety of ways. At the bottom they are tempted with worms and with insects of all sorts: these form their spring repasts. In summer they will rise to almost every kind of fly and beetle which is thrown to them on the surface. In autumn they take gentles and pastes; and in winter they may be ensnared by means of bullocks' brains, pith, greaves, &c. For the particulars of these several articles as lures, we would refer the reader to the chapter on baits. Neither are they always neglectful of the live fish bait: we have ourselves taken several with a minnow, and likewise by night lines baited with the lamprey, which latter method will often secure some of the largest amongst them, for it is only the larger chub that are thus predatory. Chub should be struck the moment the angler perceives a bite; and as it is presumed that no one would angle for them without running tackle, it is necessary to allow a full liberty of line immediately afterwards. The first struggles of a chub are generally desperate, and require some caution if the fish be large; but fear not, it is soon discouraged, and a few minutes' management, as already directed, will land the prize safe, though hooked with the finest tackle. But as the chub, when struck, very frequently makes straight for some weed-bed, or shoots under roots of trees, old piles, or in fact wherever it can shelter itself, it distresses the angler by entangling the line, and requires to be well looked to.

3401. *Chub are sometimes angled for by sinking and drawing*, which must be done with a strong line, and a stout rod also; and the more particularly, as the practice of sinking and drawing is peculiarly applicable to such dangerous situations as we have just described. No float is used, but as much lead is put on the line as will just sink it with a No. 6, 7, or 8. hook, according to the expected size of the fish thereabouts. Bait the hook with whatever animal matter is thought proper, as worms, caddies, gentles, or greaves; let it now *sink* to the bottom, and then gently *draw* it up again, not perpendicularly, but rather side-long, now rather quick, now slow, varying its action with judgment, and avoiding to come foul of stumps, piles, &c. &c. At the same time, the angler must not omit to guide the descent of the bait into all their holes and fastnesses, although all these impediments should be in the way, for here the fish often herd together: to steer clear of obstructions, sink the bait perpendicularly down, and draw it up in the direction it was let down in, by which precaution it may ensnare the fish, but will not entangle the hook.

3402. *Roving or trolling* with a live minnow we have occasionally practised also for the capture of chub with success, particularly in the Lea and Wye. In the Thames also this is practised; and we know that this bait has taken them often when the fly has been refused.

3403. *Fly-fishing* for chub will again occupy our attention separately, when we describe that species of angling: we shall in this place only touch on it generally. In May, June, July, and sometimes in August, these fish will readily take the artificial fly during the whole of a close warm day: the humble bee, palmer, both the red and the black varieties, are killing baits; but we prefer during the day to use the red, dressed with gold twist; and towards the evening the black, with silver twist, we usually found to be best suited to the taste of our prey. The large black caterpillar-fly, No. 34.; the golden palmer, No. 12.; the golden peacock palmer, No. 14.; and the large blow-fly, No. 48., are all excellent chub fly-baits in the summer months. About the close of the evening, the moths, Nos. 39, 40, and 41., will be taken, not only until late, but in bright weather all night long, the largest chub coming to be served first.

3404. *Towards the decline of summer*, chub leave off feeding on flies and other insects, which they take on the surface of the water, and retire to deep holes and deep pools, where the bottom angler will follow them with his gentles, and bee or wasp grubs. They will also take salmon's roe. As the season advances, it is prudent to try cheese, and some of the other pastes described. In winter, the crack London chub anglers principally depend on ox pith and bullock's brains, particularly the latter, the method of using which is detailed in the section on baits. As regards pastes we have to remark, that they may be used both before and after the spawning season in quick streams. One in our paste list is particularly recommended, from its resisting the current, and allowing itself to be shown as a full-sized bait for a full sized mouth. Later in the year we are more favourable to some others. We therefore refer the chub angler to our account of pastes, as being worthy of his attention.

3405. *The chub*, from the variety of sport it yields, and from the long continuance of that sport, uninterruptedly, through almost all the months of the year, is entitled to much consideration from the angler. If it be not prized for its edible qualities, it is a handsome fish, and very symmetrical while young. As chub advance in years, they become bulky in proportion to their length, the head grows coarse, and shows strong markings, and altogether they then resemble the carp in figure, and even the colour participates of that of a pale carp. In this respect they, however, differ in different waters: we have taken very large chub both in the Severn and the Wye, but in neither of those rivers did the colour of the chub approach so much to that of the carp as in the Lea.

3406. *Chub and dace* are often confounded together. We have frequently witnessed disputes between anglers on the identity of these fish, from the circumstance that, in general outline and colour, there is a considerable resemblance between the young chub and the matured dace. Attentive observation, however, readily discovers the difference between them: the lunated or forked tail of the dace is easily distinguished from the more even one of the chub; and the purple tippings of both the tail and dorsal fin of the chub are altogether wanting in those of the dace, whose head likewise is always more pointed and elegant than that of the chub.

3407. *The culinary treatment of the chub* must be very good to make the fish a favourite with the epicure. We can however, both from experience and from various authorities, even vouch that it may be made eatable. We have the word of Dame Juliana Barnes, or some other writer of her day, that the chub is a stately fysshe, and his head a dainty morsel. These early worthies seem to have had some practical knowledge of the good things of this life, and have left a few memoranda to guide the judgment of us their descendants; such as, that the tail of a pike, the head of a carp, the back of a tench, and the middle part of a bream, are the chosen morsels of all professors of true gusto. Father Walton can even make "dainty meat" of what the French think so bad that they stigmatise it *un villain*. We have somewhere heard of a quaint direction in one of our cookery books (qy. Mrs. Glass) where it is sapiently premised, "First catch a hare;" then follow the directions how to cook it. This has raised many a smile, nay, some have laughed outright at the good authoress; but we humbly opine that it was without reason. In her extensive readings, to inform herself from every culinary professor, she had undoubtedly ransacked Walton, where she must have been astonished to find that, contrary to the common order of things, this worthy first sat down to dress his chub, and then got up to catch him: in which order his instructions stand in *The Complete Angler*. This appeared to the good lady such a palpable anachronism, that to avoid it, she gave the above very wholesome and prudent advice.

3408. *For dressing the chub* our ancient thus directs: "First scale him, and then wash him clean, and then take out his guts; and to that end make the hole as little and near to his gills as you may conveniently, and especially make clean his throat from the grass and weeds that are usually in it, for if that be not very clean, it will make him to taste very sour: having so done, put some sweet herbs into his belly, and then tie him with two or three splinters to a spit, and roast him, basted often with vinegar, or rather verjuice and butter, with good store of salt mixed with it." Walton afterwards directs that the chub should be newly dressed (*i.e.* cooked soon after killing), at the same time adding a remark, which it would be well that every person concerned in cooking fresh fish should bear in mind, for note, that "lying long in water, and washing the blood out of any fish after they be gutted, abates much of their sweetness." Captain Williamson takes part with the chub, and tells us that, "Just before spawning time, they are worth catching for their roes; which made into a pie, well seasoned, and with a dash of vinegar, are delicious." Mr. Salter considers them much in the light we hold them, "as not very choice food, particularly in summer; but that they are firmer and better tasted during the winter months." They eat better, he says (and we agree with him), while full roed than after they have spawned. The chub spawn fried with the fish at this season will be found very palatable, and always perfectly harmless. Mr. Daniel says, "the roe is exceedingly good, and that this fish (the chub) stewed as a carp will deceive a connoisseur."

SECT. XII. *The Barbel* (*Cyprinus barbus* Linn.)

3409. *Bluish white carp*, with four beards, olive-coloured back, and the first ray of the dorsal fin serrated on both sides. (*Shaw's Linn. Syst.*)

3410. *Barbus vulgaris.* Mouth with four beards, form produced. Spec. char.: length from two to three feet; body usually olive on the back and silvery on the belly; D. 11.; P. 13.; V. 11.; A. 9.; C. 22.; the second or spinous ray of the dorsal fin strongly serrated on both sides. (*Fleming.*)

3411. *The barbel* (*fig.* 524.). Gesner's opinion that the name of this fish was derived from the beard-like prolongations pendent from the mouth, is undoubtedly correct. To us it came as a derivation from the Latin *barbatulus*; and a specific translation of the same import has been rendered throughout the countries of Europe, according to the genius of the language spoken in the immediate locality. Thus it is *barbello* in Italy, and we believe in Spain also: in France it is called *barbeau*, where its diminutive is likewise *barbillon*, or a little barbel; all of which are expressive of its *cirri* or beards. The term barbel is carried into heraldry also, and is there applied to head processes likewise, but of a different animal: thus we find that the comb and wattles of the cock, in heraldic emblazonments, are said to be barbel when of a different colour from the rest of his body. Our ancestors had a tendency to the study of Natural History, and thus they made observations on the peculiarities of the animals around them, no less quaint than appropriate. Many of these having been handed down to us, have served to increase our respect for their acumen.

3412. *These characteristics of the barbel* consist in four membranaceous cirri, beards, or wattles, two of which hang from the angles of the mouth, and two rather shorter attached to the upper jaw near the snout. The barbel is a handsome fish, in figure not unlike a jack, and is to be found not only in most of our rivers, but in most others also of the middle and southern parts of Europe. It is remarkable among river fish from the prominence of its upper lip; and, indeed, the bony substance of its upper jaw altogether extends beyond the lower considerably, probably for the express purpose of aiding its habits of stirring the ground beneath it in search of worms and insects. Shaw describes "the colour of the whole fish as a slightly silvery grey, with a darker cast on the upper parts, and the scales middle sized, rounded, and well defined; the dorsal fin is rather small than large, situated on the middle of the back, and of a bluish brown colour, with the second ray extremely strong, sharp, and serrated on both sides; the pectoral and ventral fins are pale brown and tipped with yellow; the tail is dull, purple, and forked; the snout or upper lip reddish; the lateral line straight."

3413. *To these characteristics we may add,* that the colour of the belly is white, with an elegant slight greenish tint glossed over it. The lateral line, Shaw justly says, is straight, or nearly so; but he omits to notice a striking character of it, which marks the *barbus* as a distinct genus, and assists to show that the rud is not a member of it: we allude to the lateral line being punctated with minute black dots. There is also to be observed (in full grown barbels particularly) an incurvation of the last upper ray of the caudal fin or tail. With this the ensnared fish is able to make a very forcible attack on the line which holds him by a tail-stroke, in which this spinous hook first catches and then cuts it, and such a blow he will very frequently give if the line be allowed to slacken. The serrated dorsal spine, which bounds the second ray of that fin, forms also another offensive weapon both against nets and lines, and sometimes the hands of the angler suffer unless he be careful.

3414. *The situations in which barbel are found* are in the deep parts of rapid rivers; it is but occasionally that they seek the more shallow scowers: they are always in company, and one being taken the chance of taking more is increased: they lurk under the shelter of overhanging banks, and by their vast power in stemming the stream, they are ever ready to catch any displaced insect or small fish; for although they will not take a live bait, there is every reason to suppose that they are truly carnivorous, dead carcasses of all kinds being greedily devoured by them. In the weed-beds of deep waters they lurk also, and appear to revel in hollows surrounded on all sides by rising ground. Under bridges in the strongest currents they may be seen, and counted one by one, apparently lying as fixtures, which has given rise to the custom of letting down hooks fixed on a lead, which dropping among them occasionally fastens one in a *foul* manner, as it is termed. They are unsuspicious in the extreme, and will often suffer themselves while grovelling in the gravel to be caught up in this way. Piles, weirs, and locks, are likewise favourite resorts of theirs. Barbel are much in motion during the night, at which time they principally seek their food, for which their small penetrating eye gives facilities; and if, as already observed, our observations are correct, the internal organisation of their visual organ particularly fits it for crepuscular vision: that they are gifted with nocturnal vision in an eminent degree is certain, from the readiness with which they distinguish and take a bait during night fishing.

SUBSECT. 1. *Barbel Fishing.*

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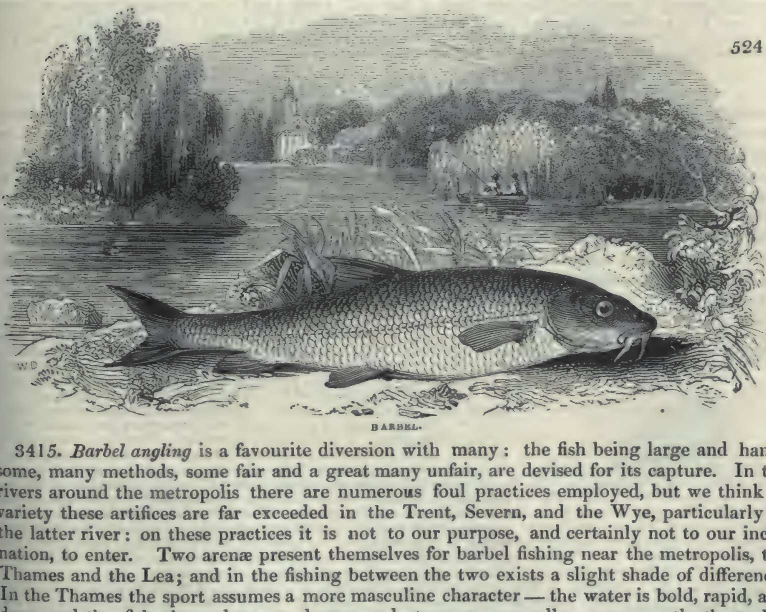

BARBEL.

3415. *Barbel angling* is a favourite diversion with many: the fish being large and handsome, many methods, some fair and a great many unfair, are devised for its capture. In the rivers around the metropolis there are numerous foul practices employed, but we think in variety these artifices are far exceeded in the Trent, Severn, and the Wye, particularly in the latter river: on these practices it is not to our purpose, and certainly not to our inclination, to enter. Two arenæ present themselves for barbel fishing near the metropolis, the Thames and the Lea; and in the fishing between the two exists a slight shade of difference. In the Thames the sport assumes a more masculine character — the water is bold, rapid, and deep, and the fish themselves are larger and stronger generally, consequently the tackle used must be likewise stronger, as the resistances employed against it are commonly greater. In the Lea, although some large fish are occasionally taken, those caught there are more frequently four, five, or six pounds' weight than larger, and we think them by no means such obstreporous gentry as those of the Thames.

3416. *In the Lea, barbel stations or deeps* are found in various spots, from Hackney Marshes to Waltham Abbey; and it is not often that these fish are taken beyond these localities. This angling in the Lea is performed with a light but firm rod, one of cane or bamboo is most common, with a stiff whalebone top, the reel and line *ad libitum:* the latter is however, with the crack sportsmen, usually of platted silk, China twist, or the new variety: the platted kind is however, less likely to kink or tangle than any other. A reed or swan's quill float is attached to a fine but well selected gut line, in which the Lea fishers are much more particular than those who frequent the Thames. In fact, in the former it is science and art against strength and strongholds; whereas in the latter, powerful implements are brought to cope with powerful fish and powerful currents. But it may be observed, that both rivers are frequented by excellent barbel fishers.

3417. *The hooks employed in barbel fishing* by the best anglers are not of the common kind; but, on the contrary, are manufactured for the purpose of much stouter wire than those in use for other fish. It is well known that in bright weather barbel are very shy in their biting; and that, notwithstanding the readiness with which they take any thing offered at some times, at others they are crafty and suspicious in the extreme. In these cases to ensnare them, the bait hook must be concealed perfectly within the bait, which cannot be done unless it be of itself very small: now for the hook to be small, and yet perfectly safe, the fish being large, strong, and obstreporous, it follows that it must be made of increased strength to make up its diminution in size. In streams where the depths are profound, and very large fish are occasionally met with, such hooks are quite essential to sport; and in fact they are used by the best barbel fishers in most of the large rivers in the kingdom, but are more imperiously called for in the deeps and rapids of the Thames than even in the Lea. A larger hook altogether is commonly used in the former; but where increased strength is of much consequence, and increased size is but little desirable, no other should be used. In the Thames barbel are more disinclined to bite, we think, during fine bright weather than they are in the Lea, and other not *direct* tide rivers: in the former, during dry weather, they appear to have completely laid by their appetites, until the rains have thickened the water, and the stream has brought down such a supply of fresh food as has been impounded above by locks, &c.

3418. *Barbel suck in their baits;* for the mouth of this fish being small, a large bait can only be taken in by a kind of suction; and thus, when a barbel is well on the feed, it will lie and gradually draw in the largest lob-worm, or a huge lump of greaves, until it has gorged it with a full sized hook into the bargain. But when these fish are not well on the feed, they are little likely to employ themselves long in such attempts as are requisite to overcome the resistance of a large bait and large hook; but a small bait on a small hook, that can be snapped up without difficulty, they may be tempted by, particularly when such baiting is very good in itself, and very well shown to them. In dry and bright weather it is therefore essential to use only the *large wired barbel hooks*, and these of a size not exceeding No. 7 or 8. for the Lea, and all other rivers with still deeps, where the fish are not expected to be very large. Some barbel anglers use even No. 9 or 10. hooks, particularly in the Lea. Wherever the water is deep but rapid, a hook of one or two sizes larger may be employed; and for a lob-worm bait, as large as No. 4. or No. 5., which sizes, unless the barbel are very heavy, will be amply sufficient when they are of this kind. In the Thames it is very common to find a lob-worm on a No. 3. or even a No. 2. hook, but where the strong sort is used, we should always recommend for the largest lob a hook not bigger than No. 5. or No 4. at the most, and even these sizes only after rain, when the water may be a little thickened. The barbel fisher who uses the smallest hooks (provided they be strong) will invariably take the most fish.

3419. *Red worms, gentles, and greaves* may be considered, however, as the stock baits for barbel in those finer fishings which are practised in bright weather and very clear waters; and they will generally succeed better than lob-worms at these times. For the method of baiting with these, we would refer the angler to the section on baits, remarking here only that it is proper to put two red worms on to the hook after the manner already directed: if gentles are used, put three or four on at a time; and when baiting with greaves, cover the hook with a uniform lump. In some of the larger tumbling bays of the river Lea, and at the tails of some of the mills driven by its waters, the lob-worm is more particularly used with effect as a tripping bait; at others two large marsh ones are applied instead of the lob.

Subsect. 2. *Leger-line Fishing for Barbel.*

3420. *The leger-line mode of baiting* being very commonly practised in barbel fishing, probably more so than all other methods put together, we give it a place here; and as we shall have again to mention the leger-line as applicable to other angling so we have given it a conspicuous subsectional niche. The term leger (from *legger*, Belg.) is appropriated to any thing which continues stationary, as a leger-book (sometimes written ledger) is a book of accounts which always remains attached to the counting-house. Walton says, "a leger bait is one that is fixed, or made to rest in a certain place, the fisher himself being absent;" but in the present acceptation of leger bait it is not necessary that the fisher be absent; on the contrary, except in eel and trimmer pike fishing, he is commonly present with his line.

3421. *The leger-line apparatus* for barbel requires a strong rod, a reel, and thirty or forty yards of strong well platted silk line: in salmon leger-line fishing, double this quantity is not too much. The hook line which is to form the leger may be about a yard long; if intended for eels, it should be of gimp throughout; if for salmon it may be of twisted gut, three links twisted above, and two below, and the same for barbel, or of fine silver gimp: to the finer end attach a strong hook of No. 4, 5, or 6. This completed, and the upper end looped, fix on a large split shot about nine or ten inches from the hook, and draw the looped end through a perforated leger-lead or coffin-lead. A bullet bored is better. The leger-trace is now finished, and only requires to be fastened to the reel line by a slip-knot. This leger-line apparatus, it is evident, can readily be made by the angler himself when necessity requires it, by an inspection of the cut (*fig.* 525.). In other cases, all the articles essential may be met with at the shops for angling-tackle. The coffin-lead itself may be cast, or any other flat-shaped piece of lead might be substituted; but that it be bored is indispensable; for were the lead immovably fixed to any one portion of the line, as soon as the fish attempted to move the bait and found a resistance, it would abandon it altogether.

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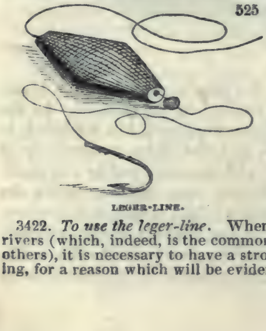


LEGER-LINE.

3422. *To use the leger-line.* When the angler barbel-fishes from a bank, as in the Lea and in many other rivers (which, indeed, is the common method pursued in most of them, except the Thames, Trent, and a few others), it is necessary to have a strong rod; but it should be longer than the barbel rod used in punt fishing, for a reason which will be evident. In punt fishing, the boat is placed exactly across the *barbel ground,* so that it shall lie directly before the angler, and only a few yards in advance of the point of his rod, which is purposely therefore short and stiff, that it may be handy and under more command. In bank fishing, on the contrary, it is requisite frequently to vary the station, or to go round a pool, or to take a considerable sweep with the lead, which, oscillating under the point of the rod like a pendulum, is then delivered dexterously and lightly just over the surface of the water, short of the fish haunt, when by loosening the hand which embraced the line, the lead will shoot forwards, and gain its proper destination without disturbing the water materially, which is an important consideration. When the lead has reached the bottom, hold the rod so as to keep it as much as possible suspended over the bait, unless it be far out in the stream, in which case elevate the rod to a proper angle with the line. The effect of the leger-line will now become apparent; the lead will fix the bait to the ground, but it will at the same time allow it such motion by the current of the water as will show it advantageously to the fish, while the line, passing readily through the bored lead, will offer no obstruction to the fish when taking the bait. Let the line remain quiet and relaxed, but yet without at all bagging, and when the top of the rod gives notice of a fish being at the bait, after allowing him to fairly take it, strike smartly, and the fish is your own; for the tough membranaceous covering of the mouth is such, that the hold will never tear away. If the fish be large, its struggles will be violent, and if it be not managed carefully it may at once break both rod and line by a stroke of its tail, or it may run itself under a bank, or among piles, or bury itself in a weed-bed: but when there is room for playing a barbel without entanglement, it adds much to the sport to let it expend its strength by running out a quantity of line, still keeping a moderately tight hand on it, to parry the tail strokes or other efforts. In this way, the contest may be carried on interestingly without risk for half an hour or more; but when there are dangers such as those above described, the fish must be strictly confined by a tight line and a rod, elevated to enable the whole to bear the strain equally, as already fully explained.

3423. *Barbel are sometimes angled for with salmon's roe*, and also with cheese paste; we have likewise taken them with pith and brains. In the use of these baits, of course, a violent current is to be avoided; but in a good swim in deeps, with a regular bottom, they occasionally prove killing. Plumb the bottom critically, and sink the hook to within an inch of the ground only, or the bait matter will be rubbed off it.

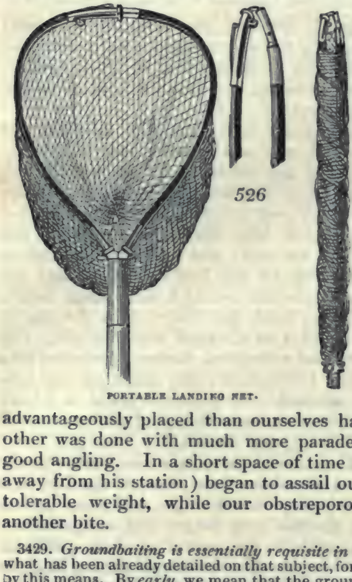
3424. "*The barbel*," says Walton, "is also curious for his baits, that they be clean and sweet; that is to say, to have your worms well scoured, and not kept in sour and musty moss, for he is a curious feeder; but at a well scoured lob-worm he will bite as boldly as at any bait, and especially if the night or two before you fish for him you bait the place with big worms cut into pieces, and note that none did ever overbait the place, nor fish too early or too late for a barbel. And the barbel will bite also at gentles, which not being too much scoured, but green, are a choice bait for him; and so is cheese, which is not to be too hard, but kept a day or two before you fish for the barbel, and be much the likelier to catch store: and if the cheese were laid in clarified honey a short time before, as, namely, an hour or two, you were still the likelier to catch fish. Some have directed to cut the cheese into thin pieces, and toast it, and then tie it on the hook with fine silk; and some advise to fish for the barbel with sheep's tallow and soft cheese beaten or worked into a paste, and that it is choicely good in August, and I believe it: but doubtless the lob-worm well scoured, and the gentle not too much scoured, and cheese ordered as I have directed, are baits enough, and I think will serve in any month, though I shall commend any angler that tries conclusions, and is industrious to improve the art."

3425. *Barbel punt angling in the Thames.* In all powerful streams, as we have already hinted, this fishing assumes somewhat of a different character from that of the Lea and other rivers of a more mild nature, from the country they run through, and from having less fall to their waters. In the former, the fish are not only larger and comparatively stronger also, but the situations they occupy are usually in the centre of their profound depths and the strongest currents to be met with. In the Thames barbel fishing is again somewhat varied by the necessity for strong tackle, and a boat to reach the fish haunts, which practice is not confined to the Thames, but is resorted to in some other barbel rivers of the kingdom, where the best deeps are in the centre of them. Barbel are, however, occasionally taken in the Thames from the banks of the river, as in the meads of Moulsey, Chertsey Fields; and higher up the river it is much more common, even from the sides of the locks and weirs in its course. The true London angler would nevertheless hardly fancy it was barbel fishing unless he practised it from a flat bottomed boat, called a punt, of which we shall say more when we describe the Thames as an angling river.

3426. *The rod usually employed for barbel* on these occasions is short and strong (*fig.* 477. p. 964), with a winch and free running line of platted silk: a leger bait is very common at these times, of either lob-worms, marsh-worms, greaves, gentles, &c.

3427. *Float angling in the Thames for barbel* is also a favourite practice with some excellent fishers, who by this means have a considerable advantage over that afforded by the leger-line, or stationary bait method; for with the floated bait it is very common to take roach and dace as well as barbel, which greatly varies the practice, and increases the sport; but it is a method principally applied to the more quiet swims. The rod employed is sometimes that already mentioned as used with the leger-line, but one rather longer and more pliant is not only pleasanter to use, but it strikes finer and truer likewise, and as float angling for barbel is altogether one of more skill and nicety than the other, so the tackle should correspond to it. A fine cork float is employed, and a firm gut line; and to strengthen it, if desired, some of the upper lengths may be made of twisted hair. We have used a grass line with advantage, always taking care to soak it thoroughly before our angling commenced. For the reasons already stated, plumb the depth accurately, and fix the bait so that it may in all cases touch the ground. Salmon's roe will frequently take barbel by float angling, and the barbel paste will also occasionally entice them in still deeps: but we consider that red, or marsh worms, gentles, and greaves, are the best baits for barbel float fishing, and it is with these that float barble angling is generally practised in most of the rivers of the midland counties.

3428. *In Vienna barbel lines are made of fine copper wire*, first burnt, and afterwards slack twisted, and are never longer than their rods: they use a heavy lead, but not pierced, or a hole through it, as ours generally are; theirs is one solid lead, tied to a string or piece of wire about four inches long, and about six or eight inches from their first hook, as they always use two When they have hooked a fish, they pull, or throw him out by main force: the general rule with them is never to play a fish." To avoid allowing a slack line in the operation of barbel angling with a float is one of the grand general rules. Let the point of the rod hang as directly over the point of the float as circumstances will permit: the line, if held moderately tight, will give immediate notice of a fish being at the bait by its tremulous motion. Next follows the sudden disappearance of the float, or a dip of the tip of the rod, if there be no float, which will show that the fish has mouthed the bait, and will be the signal for striking. After it has been struck, and sufficiently played, as already directed, have in readiness a *full-sized* landing net, which should be previously attended to, as it is seldom that the usual landing net of the angler will hold in safety a barbel of ten or twelve pounds; for the net should receive the fish fairly within it, or it may otherwise struggle itself out, and many a barbel has so escaped. This affords us an opportunity of noticing a very convenient landing net of Irish invention made to fold for the pocket, (*fig.* 526.), which may be had of all the London fishing-tackle makers. It is constructed of whalebone, the several pieces of which work on brass hinges, strong, light, and yet sufficiently expansive to take in a full-sized barbel or pike, as also to fold so as to be conveniently carried in the pocket. We have not yet had an opportunity of trying it, but it seems extremely well adapted for the purposes stated. During the fishing, make as little disturbance in the water as possible: we have seen the taker of one barbel ring the knell of all his future hopes, by the unnecessary noise and splashing made by himself, his tackle, and his spent fish, which has driven all the remaining barbel from the spot, although previously there was every appearance of a continuance of sport. This happened once in particular within our sight, and much to our own advantage. Ourselves and a friend had occupied an inferior station from being too late at our post, and we had fished some time without any success. Very soon after the gentleman alluded to as more advantageously placed than ourselves had landed his fish, which we had observed to each other was done with much more parade and bustle than was necessary or consistent with good angling. In a short space of time the barbel (which were without doubt those driven away from his station) began to assail our baits, and before long we had taken five fish of tolerable weight, while our obstreperous neighbour, we believe, was not treated with another bite.



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PORTABLE LANDING NET.

3429. *Groundbaiting is essentially requisite in barbel angling*, and we recommend that attention be paid to what has been already detailed on that subject, for it is hardly possible to congregate them too early or too often by this means. By *early*, we mean that the ground should be baited the evening before the angler commences his operations; and by *often*, that as soon as he arrives at his destination, his first business should be to throw in a supply of it while making ready, and that this should be repeated at proper intervals. Observe also that the masses of ground bait are so weighted as to sink to the exact spot intended, or they will do harm instead of good by attracting the fish to the wrong spot; and by no means content yourself, brother angler, with the mere bran and clay of the puntman, but carry with you a full supply of those noted by us, or whatever you choose for this purpose, provided that your hook bait and your ground bait are of the same sort, not quality.

3430. *The seasons and times for barbel angling* are likewise necessary to be known to the angler. Unlike the other members of the genus, barbel are not to be taken occasionally throughout the whole year. He must be indeed a good fisherman who could produce a barbel of his own catching at Christmas. From March until November they may be angled for with some prospect of success. Capt. Williamson justly remarks, that "the barbel bites best about sunrise and sunset in warm weather; that he will not touch a bait in general when a cold wind blows, except there is a fresh in the water; and that unless your baits are very neatly set on, notwithstanding his swinish look, he will seldom bite at all. You must not expect them to bite freely before the frosts are entirely gone, and the spring well advanced."

3431. *Barbel*, it is true, can hardly be fished for too early or too late; and it is through want of attention to this particular, that so many luckless journeys are taken by the London anglers to the waters of the Thames and the Lea. On one occasion we had ourselves tried the barbel during the whole of the day without any sport, which determined us to attack them at night. With this intent we retired to our inn, took our own refreshment, charged and primed our boatman, and sallied out at half-past ten o'clock, and at half-past twelve we returned with four barbel. We were in the punt again by four o'clock in the morning: the weather was then hazy: a warm sprinkling shower had fallen during our repose, and on our return to breakfast we carried with us five barbel, the produce of one rod. A party in the same inn with ourselves, but not prone to the sin of early rising, had taken two fish the day before, but their disappointment was blunted by the bottled ale, &c. The morning saw them entering their punt at eight, and at ten they also returned with two roach and one small barbel. How they proceeded afterwards we know not, as we returned to London by the Chertsey coach.

3432. *Rain is almost essential to success in barbel angling*. When the weather has continued fine for two or three weeks, the barbel angler, in leaving home to go to any distance at least in search of this sport, should not be sanguine, unless his barometer and other indications promise a fall of rain, and his leisure will allow him the fulfilment of it. But with such prospects let him start, and the longer the rain has been denied, the more greedily will the barbel take all that is washed down by the coming flood. At these times the glut is occasionally excessive, and sixty and seventy pounds' weight have been sometimes taken by a single rod at a fishing.

3433. *As an edible*, barbel, like all other fishes, have varied at different periods in the estimation of mankind; few however have eulogised them. On the contrary, they have been very generally acknowledged to be one of the coarsest of fishes: yet Pliny, in mentioning one reported by Martianus to have been caught in the Red Sea, that weighed fourscore pounds, exclaims, "Oh, what a price would he have borne among our gluttons here with us." In England barbel are deemed the very worst of fresh-water fish, and are seldom eaten but by the lower sorts of Jews in their feasts, or by the poorer classes of other people, who sometimes boil them with a piece of bacon to give them a relish. The roe often proves noxious, affecting those unwarily eating it with a vomiting, purging, and a slight swelling.

3434. *The poisonous qualities of the barbel roe*, though now very generally acknowledged, have been doubted. Dr. Shaw says, "It (the barbel) has the reputation of being, in some degree, noxious: the roe, in particular, is said to operate as a very strong emetic and cathartic, and is sometimes taken, in a small quantity, by the country people, for the purpose of common physic; but is observed, in general, to operate rather too roughly. We are assured by Sir John Hawkins, in his edition of Walton's *Complete Angler*, that the flesh itself is not always safe. "About the month of September," says he, "in the year 1754, a servant of mine who had eaten part of a barbel, though, as I had cautioned him, he abstained from the spawn, was seized with such a violent purging and vomiting, as had like to have cost him his life." Notwithstanding this observation, Dr. Bloch affirms, that "the barbel, when not overgrown, is a sufficiently delicate fish;" and even assures us that he "himself, together with his whole family, had eaten the roe or spawn without any bad effect."

3435. *The Jewish mode of dressing barbel.* This fish is brought regularly to market for the use of the lower orders of Jews, who, during some of their meat fasts, eat it as being one of the cheapest kind, being sold to them at two-pence, three-pence, and four-pence a pound, according to circumstances: they dress it in various ways. We were ourselves favoured by a Jewish family with a receipt for the purpose, said to be much in favour with them. Having gutted and carefully cleaned the fish, split them, and cut each side into pieces. Soak in cold water an hour, then rub each piece with salt. After they have remained an hour in salt, or immediately previous to dressing, wipe clean from the salt, and fry in oil. When done remove. To whatever gravy, oil, &c. may be left in the frying-pan, add onions shred fine, over which pour a sufficient quantity of vinegar: simmer all together, and when done, return the fish to this mixture again to warm, and serve up for use, eating it with the addition of any other fish-sauce thought proper.

Sect. XIII. *The Tench* (*Cyprinus tinca* Linn.).

3436. *Mucous blackish olive carp*, with very small scales, and nearly even tail. *Tinca vulgaris* — the back, dorsal, and ventral fins, dusky; the head, sides, and belly yellowish green. Spec. char.: weight four or five pounds; body thick in proportion to its length; a minute beard at each side of the mouth; gape ascending; D. 11.; P. 17.; V. 9.; A. 10. (*Fleming.*)

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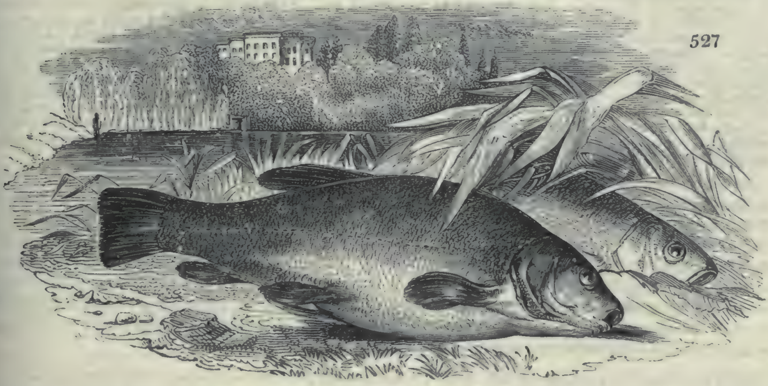

TENCH.

3437. *The tench* (*fig.* 527.) is considered as an exotic, having been brought to us from the lakes of the southern parts of Europe. It is also native to many other parts of the globe, but inhabiting by choice stagnant waters, on a loamy clayey soil, forming a soft muddy bottom. It is found also in rivers, particularly in such as have but a slight current, and flow over a soft soil. The tench varies in figure with age, but as a general type it is thick in proportion to its length, as one to three: when very full and well fed, it has been seen nearly as broad as it is long. The head is of a full size, yet proportionate to the bulky figure: the snout is short, blunt, and bounded by a moderate sized and rounded mouth. It has two cirri or beards, being one at each corner of the mouth, which are not however very conspicuous, unless purposely looked for or laid hold of with the fingers. The mouth is destitute of teeth, they being situated, as is common with the carp genus, in the throat. The eyes are rather small, round, and but little prominent; the iris is red, the nostrils are conspicuous, and a little elevated; the gill-covers are of a brilliant yellow. The fins and tail, which are large, are of a dark purplish hue; the tail in figure is nearly equal, or almost without forking: Linnæus has it *cauda integra*, but which certainly cannot be justly said of it: Shaw's characteristic, *cauda subintegra*, is more applicable. By a singular mistake, also, Linnæus describes the tail as having twenty-five rays instead of eleven, which is the usual number. The general colour of the tench is that of a deep olive, with a golden tint shining through its scales, which are small, thin, and closely adherent to the skin: according to Richter, their number is not less than thirty thousand. Willoughby describes the fins of the female as much longer than those of the male. The tench, like the eel, is remarkable for a viscid slime which transudes through the mucous pores, and covers the surface of the scales over thickly: to this are attributed qualities of a healing kind, of no ordinary degree.

3438. *The size which tench attain* appears, as in other members of this genus, much influenced by locality. On the Continent they have been known of twenty pounds' weight. Gesner mentions one which he saw that was a yard long and two feet broad. Salvian also gives an account of one of twenty pounds' weight. With us it likewise occasionally arrives at a considerable growth, but never to equal anything of this kind: on the contrary, the greater number of our tench are from ten to fourteen or fifteen inches in length, or from one to five or six pounds in weight. Choice situation seems not essential for tench, which, on the contrary, are said to love foul and weedy, more than clear, water. Mr. Daniel has taken tench out of *Munden Hall Fleet*, in Essex, belonging to Mr. Western, which was so thick with weeds that the flews could hardly be sunk through them, and where the mud was intolerably fetid, and had dyed the fish of its own colour, which was that of ink, yet no tench could be better grown or of a sweeter flavour: many were taken that weighed nine and some ten pounds the brace; and the skull and back bone of one preserved at the Hall, which was found dead by the side of the water, when compared in length with any one of those before mentioned, must have nearly doubled its weight. In a pond at Leigh's Priory he states, that he caught a number of tench, weighing about three pounds each, of a colour the most clear and beautiful; but when some of them were dressed and brought to table, they smelt and tasted so rankly of a peculiar weed, that no one could eat them: some that were conveyed alive, and put into other water, soon recovered themselves from this obnoxious taint; an experiment that will always answer in this kind of fish, where it is suspected that there is a necessity for cleansing them; and the above circumstance is recited to show, that no decisive judgment can be formed from the external appearance of the tench of their condition, however prepossessing it may appear.

3439. *The account of the celebrated tench of Thornvill House*, in Yorkshire, is notorious to many; but the existence of such a fish is believed by few, from the unfortunate disposition of its owner to gasconade. Mr. Daniel, however, assures us, that the account was correct, and we therefore give it on his authority, which we consider as entitled to every credit:—"The tench," he says, "that has occasioned the most animadversion, is that which the engraving in his work represented, the unusual size and form of which are alike impossible to be accounted for: its bulk, perhaps, exceeds that of any one ever known to be an inhabitant of the most extensive waters of this country, and the shape, which seems to have accommodated itself to the scanty space allotted for its residence, together stamp it a *lusus Naturæ*. Its history is, that a piece of water at Thornvill Royal, Yorkshire, which had been ordered to be filled up, and wherein wood, rubbish, &c. had been thrown for years, was, in November, 1801, directed to be cleared out. Persons were accordingly employed, and, almost choked up by weeds and mud, so little water remained, that no person expected to see any fish, except a few eels; yet nearly two hundred brace of tench of all sizes, and as many perch, were found. After the pond was thought to be quite free, under some roots there seemed to be an animal, which was conjectured to be an otter: the place was surrounded, and on opening an entrance among the roots, a tench was found of most singular form, having literally assumed the shape of the hole, in which he had for many years been confined. His length, from fork to eye, was two feet nine inches; his circumference, almost to the tail, was two feet three inches; his weight, eleven pounds nine ounces and a quarter; the colour was also singular, his belly being that of a char, or a vermilion. This extraordinary fish, after having been inspected by many gentlemen, was carefully put into a pond; but either from confinement, age, or bulk, it at first merely floated, and at last with difficulty swam gently away. It was stated to be now alive and well."

3440. *Tench spawn* during the late spring and early summer months, according to the season and locality; and deposit their spawn about the roots and stems of aquatic plants. The young fry are quickly evolved, and are equally quick in their growth: they breed early, and are more fecund than carp, distinct ova to the number of near four hundred thousand having been counted in a single roe. The tench, like the carp, is very tenacious of life; and may, like it, be transported in wet moss to a considerable distance, particularly when not in spawn. The sanative qualities of the tench have afforded a theme for authors to ring the changes from one to another; and as the assertion is more easily made than refuted, it has continued uncontradicted, though doubted.

3441. *In the piscatory eclogues of Mr. Diaper*, a balmy quality in the tench is poetically described:—

"The pike, fell tyrant of the liquid plain,
  With ravenous waste devours his fellow train;
Yet howsoe'er he be with famine pin'd,
  The tench he spares, a medicinal kind;
For when by wounds distress'd, or sore disease,
  He courts the salutary fish for ease,
Close to his scales the kind physician glides,
  And sweats a healing balsam from his sides."

A belief in the healing qualities of the tench towards their fellow fishes was encouraged by the Jewish physicians practising at Rome, and were also considered applicable to mankind. They are said to have ordered the half of a tench cut open to be applied to each sole of the foot in cases of fever. (Jovius, *De Piscib. Romanis.*) The fancied forbearance of the pike towards the tench, as well as the motive of it, is however altogether denied by Mr. Daniel, who, on the contrary, attributes the safety of the tench to its capability of burying itself in the mud. But we can by no means admit the force of Mr. Daniel's reasoning in proof that the tench is safe from the pike merely because he can escape into the mud; for if this were his only resource, the carp, roach, bream, rud, &c. would be equally secure, since they are equally able to imbed themselves in the mud on the approach of danger. We are, however, fully inclined to agree with him, that this security is not so complete as authors state it, though it does appear true that the pike will not ordinarily devour tench. The healing qualities of this *aquatic physician* may be better tested, now that the fresh-water *aquarium* is becoming the study and recreation of so many.

3442. *Mr. Salter's opinion on the tench and pike* however, as a man of veracity and much experience, deserves attention, and leans very strongly to the perfect and uncompromised security of the tench, not only from the fell tyrant the pike, but likewise from all other predatory fish, as the eel, who it must be acknowledged would unquestionably follow him into the mud, where even Mr. Daniel's argument could not save him. "Whether the forbearance of the pike," says Mr. S., "arises from respect to the healing qualities of the tench, or is to be attributed to a dislike of the slimy matter on its body, I know not; but I believe the tench is perfectly free from the persecution of jack and pike, for I have never taken one that has been at all mutilated in its fins, tail, or any other part, or with any of those wounds or scars on the body which are so frequently met with by the angler among the small fish he takes: the eel also foregoes his voracity in regard to the tench, both by night and day. I have known several trimmers to be laid at night baited with live fish, roach, dace, bleak, and tench, each about six or seven inches long, and when those trimmers were examined in the morning, both eels and jack have been taken by the hooks baited with any other fish but the tench, which I found as lively as when put in the river the preceding night, without ever having been disturbed: this has been invariably the case during my experience; neither have I met with even one solitary instance to the contrary related by any of my acquaintance, who had numerous opportunities of noticing the singular circumstances of the perfect freedom from any hostile attack which the tench enjoys over every other inhabitant of the liquid element, arising from the continual conflicts among each other."

SUBSECT. 1. *Angling for Tench.*

3443. *Angling for tench*, although not materially different from that practised for carp, yet is sufficiently so to merit distinct notice. The fish itself does not often fall in the way of the London angler, except it be in preserved sheets of water: in the Thames and the Lea, tench are very scarce. There are a few in the Mole, the Brent, and the Colne, and in the Roding they are still more frequently met with. In the ponds and sheets of water in Wanstead Park they used to abound; and many a pound weight of them we have extracted therefrom before breakfast. They are to be found in the Surrey Canal, but are scarce in the Grand Junction: alas! what fish is there that is not scarce there now; thanks to the sweep-nets of the bargemen! The travelled angler may meet with tench very generally diffused over the country at large in meres, fleets, ponds, and particular parts of the larger rivers of the kingdom, as the Trent, Severn, and Wye. This fish, like the carp, spawns in the spring; but as the precise time depends on agencies similar to those which affect the spawning of the carp, so were the tench as much affected by the process as some fish are, it would prove most inconvenient to the angler who pursues them in different localities, and consequently cannot be aware when they have or when they have not spawned. But as tench are not only less affected in condition, but likewise in their disposition to take a bait at these times, so the uncertainty is not of material consequence: but should the angler take one in very full roe, he would, we hope, desist in his attempts to take more.

3444. *The baits for tench* with the metropolitan anglers are worms, gentles, and pastes. In some counties, caddies, pupæ, larvæ of all kinds, as flag-worms, wasp-grubs, and caterpillars, are used for this purpose, as well as both water and garden snails. Capt. Williamson observes, "Tench do not swallow a bait very quickly, sometimes holding it in their mouths for a while; therefore give them good time, and let them either keep the float down, or, as is often the case, let them rise with the bait, so as to lay your float on the water. This is an excellent sign, and warrants your striking, but rather gently, lest the fish be only sucking the bait, for he will seldom return after it is drawn from his mouth."

3445. *Tench bite very freely after rain*, and we have been often successful while mild rain was falling in close warm gloomy weather, and that even in the daytime, which is not otherwise common, their principal feeding time being early and late in the mornings and evenings. Worms, particularly the red, are the best spring baits; these are succeeded with the London anglers by gentles, which many prefer moderately green. In the midland counties, caddies and grubs of all sorts are much used in the spring, and wasp-grubs, snails, small white slugs, and caterpillars, during the summer; but not, however, to the exclusion of worms of all sorts and gentles also. Towards the close of summer, pastes prove good baits, particularly those of our list, at the same time groundbaiting judiciously with the meal ground bait; and note, that when angling with gentles you stick a few into a ball of clay and cast in now and then; if angling with worms, do the same with them. It is now to be observed, that although the mouth of the tench will take a moderate sized bait by sucking at it, yet we have seldom had much success with lob-worms; but as other writers make favourable mention of them, they may be tried. Mr. Daniel, on the authority of Walton, recommends that the worms should be impregnated with tar, which indeed savours of the old school. Tench certainly will not absolutely refuse worms thus flavoured; but we have tried them, both natural and tarred, merely as an experiment, and the former beat the latter, during our trials, by three fish to one. It is the great failing of this gentleman's elegantly got up work, to draw almost wholly on the information of others, and those not always the best authorities, instead of giving us the result of his own extensive experience: we allude now only to the angling part of the work. As a fly angler, it is evident that he had no pretensions; and it was better to affect none: but in bottom fishing he was, we believe, an adept, and should have written with a little more originality. He invariably calls himself a compiler, which is certainly candid, but much was expected of him; and it is to be regretted he should have so studiously acted up to the character. The sporting world would have been better pleased to have known what Mr. Daniel had done, than what he had read.

3446. *The fishing-tackle for tench* should be in the first place, as regards the rod, a strong bottom one; next the float, if for river fishing, ought to be of very fine cork, but if the water be very little disturbed by current, &c. one of swan or porcupine quill is preferable; the line of fine but firm gut hook; No. 6, 7, or 8. In ponds, or other still waters, use a fine quill float, very fine line, and hook, No. 7, 8, or 9. In bold waters, as well as where fish run heavy, let the whole apparatus have rather more strength than here directed, large tench or carp being always obstreperous, and doubly so where the current is strong. The bait used in running waters should drag a little on the ground, and if the fish seem unwilling to bite, let it be raised a little higher: in ponds on the contrary, unless the bottom be very clear, the bait should never actually touch the ground, as it is apt to become buried in the mud, which circumstance can be judged by plumbing. In some situations where tench are numerous, there are many inches, nay feet, of soft oozy mud, which it would be in vain to sink the bait into: the state of the plumb-lead will ascertain this, and when ascertained, let the bait hang at first within two inches of the surface of the mud, and when a little time has elapsed without any symptoms of tench-bites, move it higher up, and if still refused, begin a slow sinking and drawing, which will show the bait to great advantage; and this method often proves very successful when tench are not well on the feed, by exciting their attention, and rousing their energies. In hot weather tench delight in weedy situations at the sides of pools, and particularly among large reeds and aquatic plants: here a long firm rod is useful, and may have attached to it a line (without a float) furnished with a small but strong barbel hook, No. 8 or 9., which should be baited with one red worm well run up the shank, the point remaining to be neatly covered with a bloodworm, with a few fine shot to sink the line. Drop this carefully and without disturbance between the weeds, letting it sink gradually; after a minute draw it up again gently, and whenever an opening occurs do the same, thus roving to every accessible part of the water.

Sect. XIV. *The Carp* (*Cyprinus carpio* Linn.).

3447. *Yellowish olive carp*, with wide dorsal fin, with the third ray serrated behind. Its characters are thus stated: It stands at the head of a numerous family (*fig.* 528.), characterised by a small mouth, which is without teeth, their office being supplied by a bony apparatus within the throat, both above and below, which acting against each other comminute the food; the gill membrane is three-rayed, and there is one dorsal fin only. There are more than thirty known species, of which more than a dozen are objects of the angler's pursuit. The common carp appears to be a native of the lakes, ponds, and some of the large rivers of the southern part of Europe. The year 1514 is mentioned as the period when Leonard Maschal, a gentleman of Sussex, naturalised the tench among us; and although there is little reason to doubt that this gentleman did actually bring carp with him from the south, or import some, yet there is sufficient evidence from the *Boke of St. Alban's*, published by Wynkyn de Worde as early as 1496, that they were then known in England. The learned

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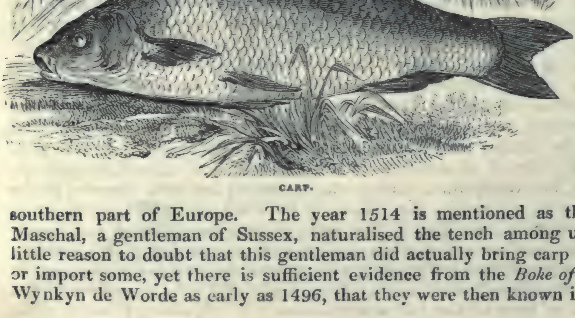

CARP.

authoress, Juliana Barnes, calls it a "daynteous fysshe," although scarce. This being the case, the old distich of carp, hops, &c. &c. loses its metre and its point together. This fish was introduced into Denmark in 1560, and yet only a few years back it was unknown in Russia: we have however reason to believe that it is now become common there also. Sweden has them only in the ponds of people of fashion. They chiefly abound in the rivers and lakes of Polish Prussia, where they are sometimes taken of a vast size: they are there a great article of commerce, and are sent in well-boats to Sweden and Russia. The merchants purchase them out of the waters of the landholders of the country, who draw a good revenue from this article. Dr. Shaw observes, that the carp is said to decrease in size the farther it is removed northward, a fact which we have reason to believe. A similar decrease occurs with regard to many other fishes, which will tend to remove the incredulity sometimes expressed, when accounts are read of fish that here arrive to a few pounds' weight only, but which in more genial climates grow to even some score pounds.

3448. *The usual length of the carp in our own country* is from about twelve to fifteen or sixteen inches; but we have seen them here much longer, weighing upwards of twenty pounds. In warmer climates they grow to twenty, thirty, or forty pounds. Its general colour is a yellowish olive, much deeper or browner on the back, and accompanied with a slightly gilded tinge on the sides; the scales are large, rounded, and very distinct; the head is large, and the mouth furnished on each side with a moderately long cirrus or beard, and above the nostrils is a much smaller and shorter pair; the lateral line is slightly curved, and marked by a row of blackish specks; the fins are violet brown, except the anal, which has a reddish tinge; the dorsal fin is broad, or continued to some distance from the middle of the back towards the tail, which is slightly forked, with rounded lobes. The viscera of the carp present a singular intimacy of connection and blending together: the intestinal canal appears to pass through the substance of the liver, which, and the large gall bladder and spleen, seem to form almost a continuous mass. Can this specialty have anything to do with the intense bitterness and the deep green tinge of the bile itself, an analysis of which has yielded more than a usual proportion of soda, resin, and acrid matter? The carp, and most of the *Cyprinus* genus, have bifurcated air bladders. The third ray of the dorsal fin is strong, and armed with sharp teeth; which kind of defence extends itself through most members of the genus, but is not alike confined to one or more particular fins: in the barbel we have just seen that it extends to the caudal or tail fin.

3449. *The usual food of the carp* consists of worms and water insects. It is a fish so tenacious of life, that it may be kept for a very considerable time in any damp place, though not immersed in water; and it is said to be sometimes fattened with success by being enveloped in wet moss, suspended in a net, and fed at intervals with bread steeped in milk, taking care to refresh the animal now and then by throwing fresh water over the net in which it is suspended. The carp is an extremely prolific fish; and the quantity of roe contained within the female is so great, that it is said to have sometimes exceeded the weight of the emptied fish itself when weighed against it.

The age to which carp attain is very great, and several well authenticated instances are adduced ot its considerably exceeding a century at least. Many of those which were introduced into the ponds at Versailles, &c. in the reign of Louis the Fourteenth, are either still in being, or at least were so a very short time before the French Revolution. Dr. Smith in his *Tour to the Continent* mentions them, and observes that they were grown white through age. Buffon assures us that he had seen, in the fosses at Pontchartrain, carp which were known to be of the age of a hundred and fifty years. Others affirm, that they have been known to arrive at the age of two hundred years.

3450. *In Polish Prussia*, and many other parts of Germany, the sale of carp constitutes a part of the revenue of the nobility and gentry, so that the proper management of this fish is reduced to a kind of system, founded on the experience of several generations. Of the methods there practised, we have an account in the *Philosophical Transactions* for 1771, communicated by Mr. J. Reinhold Forster, who says he has seen carp treated and maintained according to those methods above a yard long, and of twenty-five pounds' weight, but had no opportunity of ascertaining their age. "In the pond however at Charlottenburg," he adds, "a palace belonging to the king of Prussia, I saw more than two or three hundred carp between two and three feet long; and I was told by the keeper they were between fifty and sixty years' standing. They were tame, and came to the shore in order to be fed." Carp unfortunately are infested with *lerneæ* often: both *tænia*, *cucullus*, and other intestinal worms, are apt to infest them. But Walton was over credulous when he asserted that the frog was also an enemy of the carp. In Walton such an opinion, at the time of day he wrote, might be excused; but that Mr. Daniel should also assert this to be a fact, which is known to be only fabulous, is indeed surprising.

3451. *The reproduction of carp* has occasioned some dispute in later times: to our surprise Mr. Daniel says, "they spawn certainly several times in the year." If at each time six hundred and twenty-one thousand are produced, which is the number of ova stated to have been counted in one roe, what then would be the annual produce? Aristotle and Pliny, dealing in fable also after the custom of their times, assert that they breed six times in the year; and the over-credulous Walton, influenced by their testimony, says, "Carp and loaches are observed to breed several months in one year, which pikes and most other fish do not. And this is the rather to be believed, because you shall scarce or never take a male carp without a melt, or a female without a roe or spawn, and for the most part very much." We think it not improbable that carp do not deposit the whole of their spawn at once; and, indeed, from some observations made by ourselves on a pond stored with carp only (where we could every day by a casting net take as many as we pleased, and after subjecting them to examination, we could return them again without injury), we have been led to suppose that these fish do not complete the spawning process at one time: on the contrary, we think it not improbable that they eject portions of ova only at several distinct periods, and that some weeks even intervene between the first and last ejections. The male carp does the same by the milt; and thus, as the quotation proves, Walton had long ago made the remark, which others since his time have also made, that it is seldom during the spring and summer months that we can take a carp of either sex without finding roe within it. At their spawnings they seek shallow, warm, and sheltered places: the female deposits the spawn where the bottom is somewhat gritty, about the roots of grass, osier roots, hanging branches, &c. The milter or male fish, by a natural instinct, follows the spawner, and the milt or soft roe is spread over the spawn, which thus becomes impregnated. Carp at this season almost any one may have frequently seen swimming, as it were, in a circle about the same spot. The young fry are said to be hatched in little more than a week, and increase so rapidly that, according to Pennant, they under favourable circumstances arrive at a weight of four, five, and sometimes six pounds by their second year, which however will depend as much probably on their freedom from disease as on their local advantages.

Subsect. 1. *Angling for Carp.*

3452. *Angling for carp.* We may introduce what we have to say upon this subject in the words of Captain Williamson, who observes, that "He who can command success among large carp (for I look upon the young ones in a very different light), must possess several qualifications extremely valuable to the angler, and bids fair by general practice to be, according to the old saying, 'able to teach his master.'" Under these circumstances, to compete with this wary gentleman, the angler must use very fine tackle only, and very tempting baits: he must also, in the requisite practice, treat him with a double dose of caution and patience. If it be ever compatible with fair sporting to use two or more rods at one time, it is in carp fishing where, except it be upon extraordinary occasions, the artist may require a volume of Sir Walter to fill up the wide hiatus between each capture. If more than one rod be employed, observe that the other or others be so placed as to be secure, and that the running line be completely free, having two or three yards likewise unwound in readiness, or it will be not at all improbable that the first notice the angler receives from one of these gentry, is that of one of his rods being hauled into the middle of the water. Having however the accuracy of Mrs. Glass before our eyes we must first look for the carp before we take him.

3453. *The haunts of the carp of stagnant waters* are, during the spring and autumn months, in the deepest parts, particularly near the flood-gates, by which water is received and let off. In the summer months they frequent the weed-beds, and come nearer to the surface, and particularly are found among aquatic plants, which spring from the bottom and rise to the top. In rivers they are principally met with in the still deeps which have an oozy bottom, with rushes, reeds, &c. as a nide for their spawn. The Thames, the Lea, and the minor rivers around London, afford few carp; and when one is taken, the regrets of anglers are increased at the scarcity of them, from their superior size, flavour, and beauty. In most of the tributary rivers to the Humber, they are also very fine. In the Wye we have taken them very large.

3454. *The angling season for carp* is from February until the end of September: in favourable seasons it is not, however, usual with them to bite freely until March, and then only in rivers. In stagnant waters, as meres, ponds, &c. they seldom take a bait well until April. The rod used should be long and light, but it must also be strong, to resist the powerful play of so heavy a fish: the float must be of quill only, the line of the very best round gut, and as fine as may be. In our own practice we used fine barbel hooks for carp fishing, from No. 7. to 10., which will be sufficiently large even for a small lob-worm, if adroitly put on. By the bye we are not very partial to lob-worms for carp angling, unless they be very small, or the fish very large.

3455. *The baits for carp angling* are worms, larvæ, grain, and pastes. Worms are proper baits for the early part of the season: we seldom ourselves used any other than the red worm except on particular occasions, as in very clear water, and with a probability of the time being near to, or just after, the spawning season, when we baited with two bloodworms on a very small common wired hook of No. 10. size; but carp are, without doubt, taken with all the other varieties of worms also. Mr. Salter recommends a red worm strung on the hook, and a gentle on the point of it. In the early summer months the worm may be varied with caddies, caterpillars, beetles, grasshoppers, wasp-grubs, and turnip-worms. To these, in the order of season, succeed gentles, which some think the fish take best when rather green; but we have never discovered such a preference over those well scoured. Green peas are advocated by Taylor, who claims the merit of introducing them as a bait: but fruits and vegetables have been carp baits long before Walton. Mr. Salter improves on Taylor, and prescribes marrowfat peas, which we think evinces sound judgment in both the giver and the taker. Taylor's plan is to hang one on the hook about a foot from the ground, throwing in a few now and then by way of lure. We have been so often assured by anglers that green peas will take carp, that we are constrained to believe it; perhaps in our anglings with them we forgot the bacon, for these gentry always refused them from our hands; and we likewise thought that we consulted their tastes full as well by a clean morsel of well soaked greaves, which we found to be occasionally a very tempting bait in the morning and evening of a blustering but not cold day. Pastes sometimes succeed well with carp. Mr. Salter recommends a sweet paste (p. 1029.), and we cordially join in the praise of it from our own experience: we should be sorry to be doomed to eat all the carp we have taken with it.

3456. *Use ground bait for carp* in all cases in which you propose to confine yourself to a determinate place; if you rove, it is better only occasionally to throw in a few grains, and sand with pieces of worms and a few gentles mixed. In a stationary spot regularly groundbait it the night before with a substance that accords with your intended hook bait. Put the ground bait in quietly, and plumb the depth at the time, to avoid all disturbance in the morning. And when the angling commences, if possible keep entirely out of sight of the fish: make no noise; let the bait slide silently into the water; and try their fancy for taking it at various depths, beginning with the lowest. If rain falls lightly, the angler would do well to pursue his practice during the whole day. Sometimes, also, success will attend him through the whole of a gloomy day without rain, but in general cases, during the hot months, it is not possible to fish too early or too late for carp. In a starlight or moonlight night of July, they have been taken after the "witching time" even.

3457. *When the angler perceives a bite*, he must strike according to the nature of his bait. If, for instance, in fishing with a lob-worm, he were to strike the moment he felt the float move, he would but pull the worm out of the mouth of the carp, who sucks it in after the manner of a barbel. On the contrary, if paste be employed, it is prudent to strike on the slightest warning, otherwise the wary animal will suck away all the paste; but with a small hook, and a very slight wrist-stroke, the nibbling fish may be probably struck; or if it be not effectually hooked, the fineness of the stroke will not alarm it, and it will return to the charge. Again, when fishing for carp in rivers, it will be found that the habit of meeting the insects which pass down the stream makes the fish more on the alert to prevent their escape: they take the bait quicker in rivers, for this reason, and they should therefore be struck much quicker.

3458. *Carp as a table fish* are highly prized by some, and nearly as much despised by others. If carp were as plentiful as mackarel or herrings, would as many be eaten? and yet who would dare so to offend the goddess of fashion, as to leave carp to feast on herrings and mackarel? Forbid it, shades of Quin and Kitchener! Forbid it, ye Parisian arbiters of taste, who import into your city eight hundred thousand of these fish annually, drawing them on extraordinary occasions of luxury from the superior feeding waters of the Rhine at a hundred and twenty leagues' distance! Carp differ however much in their qualities: those extracted from rivers are generally acknowledged as the best, though Mr. Daniel says, "they are frequently sweet and well flavoured when taken out of the muddiest ponds, where they have plenty of food, and the stock of fish is not too large; and it is a singularity that these fish put into a stew made in the clear channel of a trout stream shall soon become lean, and acquire the taste we call muddy." Mr. Daniel has previously remarked, that the flesh of carp is wholesome, and, if taken from good water, of a nice flavour; but this is absolutely lost in the rich sauces in which this fish swims upon our tables: a carp plainly boiled will not turn out such insipid meat as is generally thought.

3459. *Walton, in regard to the dressing of carp*, as in many other respects, must be acknowledged the prince of piscatory sports, who caters for our amusement and our stomachs in the same chapter. He it is who teaches us to dispel our *ennui* in a delightful recreation, and to recruit our exhausted frames from the self-same sources. We will, however, interrupt him no longer. "But first I will tell you how to make this carp, that is so curious to be caught, so curious a dish of meat, as shall make him worth all your labour and patience; and though it is not without some trouble and charges, yet it will recompense both. Take a carp, alive if possible, scour him, and rub him clean with water and salt, but scale him not; then open him, and put him with his blood and his liver, which you must save when you open him, into a small pot or kettle; then take sweet marjoram, thyme, and parsley, of each half a handful, a sprig of rosemary, and another of savory; bind them into two or three small bundles, and put them to your carp, with four or five whole onions, twenty pickled oysters, and three anchovies. Then pour upon your carp as much claret wine as will only cover him, and season your claret well with salt, cloves, and mace, and the rinds of oranges and lemons; that done, cover your pot, and set it on a quick fire till it be sufficiently boiled; then take out the carp, and lay it with the broth into the dish, and pour upon it a quarter of a pound of the best fresh butter, melted and beaten with half a dozen spoonsful of the broth, the yokes of two or three eggs, and some of the herbs shred; garnish your dish with lemons, and so serve it up, and much good may it do you."

SUBSECT. 2. *The Prussian Carp* (*Cyprinus gibelio* Cuvier).

3460. *Yellowish olive carp*, with sub-violaceous fins, straight lateral line, and nearly even tail. This carp variety in the vulgate is often called the Prussian carp. Dr. Fleming, after his systematic headline, gives the following popular notice of it: — "This seems to be the crucian of the British zoology, as stated on the authority of the late Mr. Dryander in the last edition." Indeed, the figure originally given bears so close a resemblance to the *Cyprinus gibelio* of Bloch (*Ich.* tab. xii.), while it differs from the *C. Carasius*, as to leave no room to doubt that Mr. Pennant was originally misled in his inference. He says that "this fish is found in many ponds in the neighbourhood of London." He considers it as "a naturalised species, but that the period of its introduction is uncertain." Naturalists are not, however, altogether agreed on the origin of this fish, some asserting that it was introduced among us more than a century ago from the North of Europe; others that it was more probably an early inhabitant of our country, an opinion which receives much strength, when we consider that its qualities are not such as to repay any pains necessary to bring it from such a distance, or to bring it afterwards so much into request as it must have been, to become so universal. It is also in favour of its original character, that the old moats surrounding castellated mansions, whose glories have been eclipsed for centuries, and which are now converted into farm-houses or cottagers' dwellings, have very commonly these fish within them. Bloch says, that a hybrid species is often the consequence when the crusian and common carp inhabit the same waters. The noble Prussian carp is of all fishes the best for keeping in the aquarium. The easy, graceful motions, the beauty of its colouring, and its *docility* (so to speak), make it a pet and a favourite, while its tenacity of life in confinement is another great recommendation. See the *Book of the Fresh-water Aquarium*, published by Messrs. Groombridge and Sons.

Sect. XV. *The Perch* (*Perca fluviatilis* Linn.).

3461. *Olivaceous perch*, with transverse semi-decurrent blackish bands; dorsal fin subviolaceous, the rest red. (*Shaw's Linn. Sys. Nat.*) Fleming thus characterises it: — Opercule with one spine; the first dorsal fin longer than the second. Spec. char.: length about a foot; back arched, greenish black; sides with five transverse black bands; belly reddish white; ventral, anal, and caudal fins red; irides golden; 1 D. 14.; 2 D. 14.; P. 12.; V. $1\frac{1}{5}$.; A. $\frac{2}{9}$; tail lunate.

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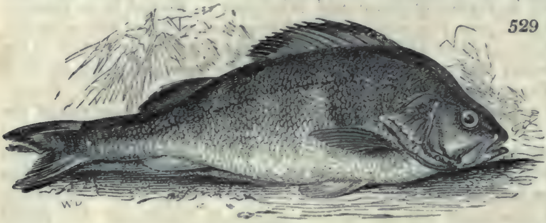

PERCH.

3462. *The perch* (*fig.* 529.) is a very extensively diffused fish, being as common to the rivers and lakes of most parts of Europe as it is to those of England. "The body of this fish," according to Pennant, "is deep, the scales very rough, the back much arched, and the side line approaches near to it; the irides are golden; the teeth small, disposed in the jaws and on the roof of the mouth, which is large; the edges of the covers of the gills are serrated, and on the lower end of the largest is a sharp spine. The colours of the perch are beautiful, the back and part of the sides being of a deep green, marked with broad black bars pointing downwards; the belly is white, tinged with red; the ventral fins of a rich scarlet, the anal fins and tail (which is a little forked) of the same colour, but rather paler." The transverse semi-decurrent bands of the perch are usually either five or six, and it is owing to them that this fish when in the water appears very dark coloured, with lightish stripings; but when removed from the water, it is rather of a greenish cast altogether. The first dorsal fin is furnished with spinous rays, which renders it a formidable opponent to its antagonist, and not pleasant to handle by the angler. Internally the mouth is supplied with numerous teeth; the liver is large and undivided; the intestine has but one fold, while the stomach presents a process, and three pyloric *cæca.* A variety of this fish is found in Llyn Raithlyn in Merionethshire, in which the back is curiously distorted, but in other respects it resembles the common perch, which are likewise numerous in the same lake; consequently the variety is fixed, and is not accidental, or the members of it would breed with the others. Mr. Pennant was informed that the same kind was to be met with in the Thames near Marlow; and in the *Fauna Suecica* of Linnæus we are told that it is found also in the small lakes near Fahlan. According to Sir Humphry Davy, the river perch branches out into several other species; for he regrets, in the interesting pages of *Salmonia,* that we have not naturalised the four kinds of them which are natives to the Danube. A still more singular perch anomaly is brought forward by Mr. Daniel, having been taken by him in the docks at Blackwall; these had each a solid mass of fat placed on the ribs, but not adherent to them: the most remarkable circumstance however was, that the stomach, according to Mr D.'s opinion, was wholly impervious, and had not been distended with food for some time. It is our opinion, however, that the fish made their way into the stomach of somebody; and we are equally convinced that a close examination would have discovered the way into the stomachs of the perch also, which were simply corrugated at the recipient orifice, but not closed. Another singular kind of perch, for which we are indebted to Mr. Daniel, is found in Malham Water, not far from Settle in Yorkshire: these grow to five pounds and upwards in weight, yet are all blind of one or both eyes, and therefore might have been advantageously seized on by the punster, who observed of his friend's monocular dog, that he needs must prove an excellent guard, because he would have *an eye out* on all occasions. The *Perca scandens,* or climbing variety of perch, has been elsewhere noticed. The perch is considered as slow in its growth; but its increase depends much on the nature of its habitation: in ponds, and other small and perfectly stagnant waters, it grows slowly, and seldom arrives at last to any great size or weight: but in rivers, in estuaries, and particularly in such waters as are subject to the rising tide, and as are slightly impregnated with brackish particles, although without current, they grow fast and become very fat. Thus in the docks at Blackwall, and in Dagenham Breach, they are found to flourish as well as they do in the tideways of the Trent, the Severn, and the Wye, where we have seen them very fine. In large stagnant waters they also multiply if there be plenty of insect food, and the young fry of other fish; but in ponds they are seldom found large. Among remarkably large perch, we have before observed on one taken in the Serpentine River in Hyde Park, which weighed nine pounds, and another of eight pounds taken in Dagenham Breach by a Mr. Carter. In the *Anglers' Sure Guide*, mention is made of the portrait of one caught near Oxford, which was twenty-nine inches long, and of a proportionate depth; and supposing such measure to have been correct, the weight must have been very great.

3463. *Perch spawn in the spring*, earlier or later acccording to the temperature of the water, &c. they are found in, March being considered as the medium of the range. The spawner deposits a kind of glutinous reticular band, in which the ova are enveloped. In less than a fortnight the eggs burst, and the young fry are ushered into life. The perch is gregarious in the strictest sense of the word: a number herd together by a sort of compact, which confines them to situation, to size, and to habit as well as manner; all are alike: the same hole contains them, and the same swim maintains them; and if one should be taken, it is the angler's own fault if the whole do not share the same fate. This circumstance is remarkable in a fish of prey, since predatory fish in most instances are solitary; and is even more singular in one so voracious as to swallow its own eye for a bait, as heretofore stated. The perch is very tenacious of life: a number have been carried sixty miles in dry straw, and were alive at the end of the journey. A curious fact is recorded, which would lead to a belief that these fish are migratory, and that they colonise themselves in new situations on some occasions. It is asserted that all the Irish lakes and the Shannon river became stocked with them at the same time; but we know not on what authority the account rests.

Subsect. 1. *Angling for Perch.*

3464. *Angling for perch* is a favourite amusement with many: it is considered first-rate sport, and so stands high among amateurs. The beauty of the fish, its game qualities, its usual readiness to take a bait, and its value when taken, either as a present for others or as a table fish for ourselves, all render it an object of attention to the angling sportsman. The haunts of perch are varied, since they are both a still and a stream water fish, inhabiting as well clear swift rivers, with pebbly gravelly bottoms, as those of sandy and clayey soils: they love water moderately deep, and frequent holes by the sides of, or near to, gentle streams where there is an eddy, the hollows under banks, among weeds and roots of trees, piles of bridges, or in ditches, and the back streams, that have communication with large rivers. In ponds which are fed by a brook or rivulet, perch thrive very fast: their haunts are *there* chiefly deep holes, between weeds or stumps of trees, or on gravelly scowers. Pools or holes, with a bottom of pure mud, are not however usually to their taste. "Perch delight to lie about bridges and mill-pools; in and near locks; about shipping, barges, and floats of timber; in navigable rivers, canals, and in wet docks: also in the still parts of rivers, and in the back water of mill-streams, as well as in deep gentle eddies, in ponds about sluices and the mouths of outlets and flood-gates, commonly affecting the gravel or sandy parts of the pond."

3465. *The season for perch angling* is from February until the middle of October, during which time they will bite in most weathers, except it be very sunny and bright: but such blustering weather as would prove unfavourable to sport in many other fishings, will not prevent perch from taking a bait well: on the contrary, when it blows a gale from the west or south-west, with a gloomy horizon, they will take any bait almost throughout the day. "At such times, when a dozen or more of perch have been observed in a deep hole, sheltered by trees or bushes, by using fine tackle and a well scoured worm, the angler may see them strive which shall first seize it, until the whole shoal have been caught." Some say that, as regards times, the perch bites best in the latter part of the spring, from seven to eleven in the forenoon, and from two to six in the afternoon, except in hot and bright weather, and then from sunrise to six in the morning, and in the eve from six to sunset. In tide rivers however, and the waters immediately connected with them, as docks, sluices, &c. &c. these general rules as to biting times do not strictly apply; for it is there during the flow and ebb, when the natural food is principally on the stir, that the fish are most certainly on the look-out for it, let the time be what it may.

3466. *The baits for perch* are principally worms, insects, and small fish, but more particularly minnows. "Of worms, the best kinds," Taylor says, "are small lob-worms, which have no knot, brandlings, red dunghills, or those found in rotten tan, all well scoured: the hook may be varied from No. 2. to 6." We should rather recommend from No. 4. to 7, or 8.: neither are we very favourable to lob-worms as baits, except where the perch run very large indeed. "The hook," continues our author, "being well whipped to a strong link of gut, with a shot or two a foot from it, put the point of the hook in at the head of the worm, out again a little lower than the middle, pushing it above the shank of the hook upon the gut: take a smaller one, beginning the same way, and bring its head up to the middle of the shank only; then draw the first worm down to the head of the latter, so that the tails may hang one above the other, keeping the point of the hook well covered. This is the most enticing method that can be adopted in worm-fishing: use a small cork float to keep the bait at six or twelve inches from the bottom, or sometimes about mid-water. In angling near the bottom, raise the bait very frequently from thence almost to the surface, letting it gradually fall again." As a perch bait, Salter, in the spring months, prefers two red worms on the hook to one large one of any other kind, with which we fully agree. Capt. Williamson selects the middle sized brandlings for the purpose, and next to these he chooses red worms, or the "well scoured cowdung bob." Caddies, wasp-grubs, and caterpillars, prove good perch baits in some waters; and Mr. Daniel mentions boiled horse-beans as a good lure: but perch are essentially carnivorous, and consequently are not very likely to be often tempted with vegetable matter. It is not a bad method to use two hooks in a water of tolerable depth, with a bullet or plumb; one hook may be sunk to within six inches of the bottom, and the other to about mid-water. In this case two different kinds of worms may be tried, or the upper hook may be baited with caddies or gentles, and the lower with a worm or minnow, or *vice versâ*

3467. *In the fresh water docks and tideways*, perch fishing often yields excellent sport, and never better than when shrimps are used as baits. In these situations they are the natural food of perch; consequently they prove the most tempting bait, and perch will take them dead, as well as living, when fresh. If living, it is well to preserve them in wet sand in a basket, but by no means to huddle them together in a bag, which soon destroys them.

3468. *A paternoster line* is used to advantage in all deep waters for heavy perch, for as these fish are not groundlings, but rove at all depths, so to meet the full operation of their predatory habits, hooks sunk at different depths succeed in meeting with them in these their wanderings. The number of hooks employed should be regulated by circumstances, but principally by the depth of the water. In docks, and other places of a similar kind, put a small loach or gudgeon on the lower hook, a minnow on the next, and a shrimp on the third: if a fourth hook be employed, bait it with a red worm or a second shrimp. The paternoster should be fitted up with a bored leaden pipe, by which the living fish baits will show themselves well. In other waters not subject to flux and reflux, substitute worms, gentles, or other insect baits, for shrimps. We have, in the absence of other baits, used the fresh-water snails to advantage; and the whiter parts of greaves they will also sometimes accept at the angler's hands. In a bad day it is the practice with some, when the perch will not be thus brought on feed, to take off the float, and extend the line as long as the rod will throw the bait out (which should be worms), without injuring it; cast it in all directions, sometimes across, at others up or down the water, drawing the bait towards you, and working with a similar motion as in spinning a minnow: try not long in one spot: when a fish bites slacken the line, and give time before striking: this often succeeds in bad weather, when all other methods fail, but more especially in a rough southerly or westerly wind. Roving, sinking, and drawing for perch is at some times, as in boisterous weather, the most eligible practice with a strong gut line of about three feet in length without float, but shotted with three or four shot about eight or nine inches from the hook, which may be No. 5 or 6., according to circumstances. Attach this roving apparatus to the reel line, and bait the hook in any manner that may be deemed eligible; probably worms will prove the most so as a general bait, placing on the hook either one large or two small ones, as directed under worm baits. Being thus prepared, draw out as much reel line as can be managed to be cast out before the angler; and if the wind be behind (and it is at such times that this kind of fishing is the most successful), the bait may be carried to almost any distance: allow it to sink to the bottom, easing it down in the most natural manner; then draw it upwards, and again sink it, but dexterously give it, at each sinking, a new direction, thus roving hither and thither.

3469. *Living fish* however are the most killing of all the lures used to entrap large perch, and of these none equal the minnow. In the section on live baits, the angler may find the proper methods of applying the minnow, stickleback, and other small fish to this purpose. The stickleback, with its spines cut away, proves a fair bait in meres, fleets, and other large waters, where the minnow is not to be obtained. Loaches, bull-heads, and small fry of all sorts, may be used also under such circumstances: small frogs are likewise so employed, and by some anglers are very highly spoken of. In using the living minnow Taylor directs, "If the angler roves with a minnow, let it be alive (and by putting them as soon as caught into his minnow-kettle, and placing them in the stream, they are easily preserved), and the hook stuck in under the back fin, or through the upper lip; let the minnow swim in mid-water, or rather lower: use a cork float of a size that he cannot sink it under water, with a few shot, about nine inches from the hook, to keep him down, or, when tired, he will rise to the surface. When using the frog, put the hook through the skin of its back, and it will swim easier than if the hook was thrust through the skin of its hind legs: recollect to keep this bait as far from the shore as possible, for it will constantly be making to it: always give line enough at a bite, to let the perch gorge. May and June are the best months, as the perch are then prowling in search of the young fry of dace, roach, and other fish. Where pike are suspected to haunt, the hook should be fixed to gimp, as in this way of fishing they will take the bait as well as the perch." For taking perch, some anglers affix the bait by two hooks, one inserted at the root of the back fin, and the others attached to either the gill lip or nostril. We think this by no means a bad plan; but on the contrary, that it increases the chance of fixing the fish when it only makes a snatching bite, as is common when perch are not well on the feed:

but observe, with two hooks, let them both be small, not larger than No. 6., and if they are No. 7. of barbel wire, we think it will be all the better.

3470. *Minnow trolling and roving for perch*, as directed in pages 1017, 1018., is also practised with a fine gorge-hook, and often proves very effective on a blustering day; but it should be done with strong tackle and gimped-hook if there be pike in the water, for on such a day they would certainly be ranging and on the feed, and without this precaution they might destroy the tackle.

3471. *Minnow spinning*, as directed in pages 1023, 1024., has similar advantages; for when it would be comfortless to stand waiting the success of the live float bait, this will keep the body in motion. Full directions relative to both these methods are given in our section on live baits. The rod need not be varied: it is however necessary it should be stout; and at the same time it is convenient that it should be light; and in both roving and minnow spinning it ought to be long also: but this subject has been so often touched on, and in the outset so fully considered, when we treated particularly on the rod, that more is unnecessary here. It is perhaps equally so to remark, that perch fishing without running tackle for any thing *but sprat-perch in a duck-pond*, would subject the angler to the loss of fish, tackle, and reputation.

3472. *On the gastronomic properties of the perch*, whoever has heard of the broiled perch *flitches*, and *water souchy* of Sir Bamber Gascogyne's cooking, would not hold us blameless were we to be totally silent. This fish has indeed stood the test of time, and has been as little subjected to the mutations of fashion, perhaps, as any one of the finny tribe: it was highly esteemed by the Romans, as we are informed by Aristotle, and its praises were sung by Ausonius:

> "Nec te delicias mensarum, Perca, silebo
> Amnigenos inter pisces dignande marinis!"

Subsect. 2. *The Ruffe* (*Accrina vulgaris* Cuvier).

3473. *The ruffe, or pope* (*Perca cernua*, Linn.) is known as the sub-olivaceous perch. speckled with black, with fifteen spines on the dorsal fin. It is about the size of a gudgeon, and will not detain us long. It is found in shoals in the Thames and other tributary rivers. The head is rather large and a little flattened; the teeth are very small, and placed in rows. "It is," according to Mr. Pennant, "marked on the jaws with a double course of half circles; the upper part of the eye is of a dark brown, the lower part somewhat yellow, and the globe of it black. The principal spawning time of these fish is the beginning of April; but some are said to spawn again in October; and in the *Elements of Natural History* they are said to deposit seventy-five thousand ova. Angling for them is not without its interest from their eager biting, and the method pursued to take them differs very little from that of gudgeon fishing, and they are found where the water is deep, quiet, and runs over a loamy bottom. But this does not agree with our experience altogether: they certainly frequent deep and gentle eddies; nevertheless, the bottom they prefer is sandy or gravelly; and indeed we never found them in perfectly muddy pools, or entire stagnant water. The bait used to take them is principally red worms, with a hook of No. 8, 9, or 10., which should trip along the ground as for gudgeons. Ground bait may be used also in the same manner, and of the same nature; but is not, perhaps, so necessary as with gudgeons: neither is raking practised. Ruffe form a good table treat, broiled in buttered paper.

Sect. XVI. *The Trout* (*Salmo fario* Linn.).

3474. *The Common Trout.* Body with red spots on the lateral line; tail slightly forked; length about a foot; colour, dusky above, with purple and red spots; beneath grey; head blunt; D. 13.; P. 13.; V. 9.; A. 9.; C. 25. (*Fleming.*)

3475. *The trout of our waters* (*fig.* 514. p. 1075.) is known among ichthyologists as the yellow grey salmon with red spots, having the lower jaw rather longer than the upper. There are other species or varieties found in the list of naturalists, but this is the one recognised by anglers emphatically as *the trout.* Occasionally it has been taken of ten and twelve pounds' weight; and sometimes more, but a four or five pounds' trout is considered a very good sized fish, and one more often sought for than taken. In the midland counties, where it thrives, according to its habit of feeding and the nature of its food, it becomes somewhat varied in figure; but principally it admits of considerable variety as to the tinge both of its ground colour, and spots. Its general length is from twelve to fifteen or sixteen inches, and its colour yellowish grey, darker or browner on the back, and marked on the sides by several rather distant, round, bright red spots, each surrounded by a tinge of pale blue grey. Sometimes the ground colour of the body is a purplish grey, the red spots much larger, more or less mixed with black, and the belly of a white or silvery cast. The fins are of a pale purplish brown, the dorsal fin marked with several darker spots: the head is rather large, the scales small, and the lateral line straight. The female fish is of a brighter and more beautiful appearance than the male. (*Shaw.*) To this description it may be added, that the head of the trout ends in a blunt snout and wide mouth, which always gapes after death, which, on inspection, shows it to be throughout thickly studded with teeth, that incline inwards on the jaws. The eye is of a moderate size but expressive, the pupil encircled with red, and the iris of a silvery tint. The sides of the body present, in varied shades, yellow, green, and rose colour: towards the back is seen a bluish ground, studded with brilliant red spots. The fins partake of the richness and variegation of the general colouring, the pectorals being of a brown, the ventrals red, the anal partly purple, and partly of an ochreous grey. The tail is brown also, and presents a kind of furrow, with its rays rounded, but not exactly confined to twenty-five in number, being occasionally more or less by two or three.

3476. *The adipose fin* is a striking characteristic of the genus *Salmo:* its use is unknown to us, and although it is called a second dorsal fin, it ill merits the name, as it is without motion and rayless, being a simple membranous and fatty excrescence of a yellowish colour, with a vermilion edging. Notwithstanding this general description, it is to be remembered that the tintings of trout vary probably more than those of almost any other fish.

3477. *Locality has a great influence on trout.* Sir Humphry Davy met with trout in the river Boyle in Ireland, which were coloured with red and brown tintings; but these, though in good season, were yet wholly without red spots. At the same time he observes, that one of his friends, an excellent angler, had made some experiments on the fat of fish, the result of which went to prove that the red hue of trout, salmon, and char, was to be attributed to a peculiar coloured oil, and that the colour may be extracted by alcohol. If this should hereafter appear to be the case, we shall have in future no difficulty in accounting for the decrease in the red complexion of trout when they are emaciated by spawning, or when they inhabit waters unfavourable to them. The spots of trout are certainly influenced much by the nature of their food; and the scientific baronet thinks that their feeding on minnows has a tendency to produce numerous black spots instead of red; he instances the trout of the Colne in proof of it, where minnows are plentiful, and the fish excellent. We have angled much in that river, but we do not think the observation applies to it universally; partially it does, and the *Thames* trout also, when large, have only black spots. When shell-fish are the principal food, he thinks red spots predominate; and the gillaroo and char are certainly corroborative instances, being remarkable for the number and brightness of their red spots, as well as the redness of their fins.

3478. *Variations in the form as well as of the colour of trout* are produced by the same agencies, and it is probable that a long continued action of these causes has the power of establishing new and permanent characters. Mr. Pennant seems of the same opinion, and expresses himself to the effect, that the numerous varieties observed in trout may all be reduced to one species. "In Lyndivia," he tells us, "a lake in South Wales, there are trouts called *coch y dail*, marked with red and black spots as big as sixpences; others are unspotted, and of a reddish hue, that sometimes weigh near ten pounds, but are ill tasted. In Lough Neagh, in Ireland, are trouts called there *buddaghs*, which not unfrequently weigh thirty pounds; but it was not my fortune to see any during my stay in the neighbourhood of that vast water. Trouts (probably of the same species) are also taken in Ullswater, a lake in Cumberland, and these are of a much superior size to those of Lough Neagh. The latter are supposed to be the same with the trout of the lake of Geneva, a fish that many who have eaten it think but a very indifferent one." A variety of the trout is found in the river Eynion, not far from Machynlleth in Merionethshire, and in one of the Snowdon lakes. The trout of this variety are all of them naturally deformed, having a strange crookedness near the tail, resembling that of the perch before described. We dwell the less on these monstrous productions, as the Honourable Daines Barrington has already given an account of them in an ingenious dissertation on some of the Cambrian fish, published in the *Philosophical Transactions* of the year 1767.

3479. "*The stomachs of the common trout,*" Mr. Pennant tells us, "are thick and muscular, which is not to be wondered at when we consider that they feed on the shell-fish of lakes and rivers, as well as on small fish. They likewise take into their stomachs gravel or small stones, to farther assist in comminuting the testaceous parts of their food. The trout of certain lakes in Ireland, such as those of the province of Galway and some others, are particularly remarkable for the great thickness of their stomachs; which stomachs, from bearing some slight resemblance to the organs of digestion in birds, have been called gizzards. The Irish name the species that have them *gillaroo* trouts; and so remarkable are they, that these stomachs are sometimes served up to table under the former appellation. It does not appear to me that the extraordinary strength of stomach in the Irish fish should give any suspicion that it is a distinct species: the nature of the waters might increase the thickness; or the superior quantity of shell-fish, which would more frequently call for the use of its comminuting powers than those of our trout, might occasion this difference. I had an opportunity of comparing the stomach of a great gillaroo trout with a large one from the Uxbridge river. The last, if I recollect, was smaller and out of season, and its stomach (notwithstanding it was very thick) was much inferior in strength to that of the former; but on the whole there was not the least specific difference between the two subjects."

3480. *The general figure of the gillaroo trout* is described by Sir Humphry Davy as differing somewhat from the common trout, as well as its stomach; some caught in Loch Melvin, near Ballyshannon, were broader and thicker than trout usually are; they had also more red spots, with a yellow belly and fins. These stomachs, our author states, had altogether, as far as his observation went, shell-fish in them; yet he adds, that the gillaroo rise as freely to a fly as the common trout they were mixed with, which latter, we are informed, contained no shell-fish: in our opinion, however, the learned author is not correct in leaning to a supposition, that common trout do not take in shell-fish. At some seasons our own experience convinces us, that shell-fish, as the *Palludinæ*, *Helices*, &c. &c. form a considerable part of their food; and that it is expressly to act on this hard food that the common trout has a very thick muscular stomach also, though certainly it is one with a substance and force less by two-thirds than that of the gillaroo. Sir Humphry Davy, however, seems rather to incline to an opinion, that the gillaroo is specifically distinct from the common trout. "I have caught with a fly," he says, "some not longer than my finger, which have had as perfect a hard stomach as the larger ones, with the coats as thick in proportion, and the same shells within, so that this animal is at least *now* a distinct species, and is a sort of link between the trout and char, which has a stomach of the same kind with the gillaroo, but not quite so thick, and which feeds at the bottom in the same way. I have," he adds, "often looked in the lakes abroad for gillaroo trout and never found one." (*Salmonia.*) It is, however, much more in accordance with physiological principles, as well as known analogies, to consider the stomach of the gillaroo as having been progressively acted on by the situation the fish occupied, which principally affording crustaceous food, has gradually worked a corresponding change in the digesting organ destined to act on such hard substances. The gillaroo is now therefore no longer considered by naturalists to be a distinct species, but is regarded as the common trout only, whose organs have submitted to the powerful agencies of time, place, and food. This subject has however, if we recollect rightly, been already touched on in the *Anatomy and Physiology of Fishes*, p. 937.

3481. *The black trout* is a variety engendered by long confinement to particular spots, as to some of the lochs in the northern parts of Scotland and Ireland; and from our own observations we can bear out Captain Williamson, who thus describes this fish: — "It is remarkably handsome, its back being of a deep tawny hue, its sides partaking somewhat of the same cast, but brightened by a rich yellowish tint, that relieves its appearance considerably. The spots are of a crimson, and of a deep gold colour; and the lateral line, as well as the head, bear some dots of a smaller size, but at least equally rich. The tail and fins are yellowish red, and, when in season, are somewhat speckled. In the water, this fish is actually beautiful; its very short head, broad tail, large fins, and great depth, give it a certain resemblance to the carp. Black trout are in season at the same time, and indeed, in most circumstances, correspond with the common trout: they are, however, more powerful, and greater strugglers, rendering it indispensably necessary to use them very gently."

3482. *The small beck, burn, or mountain trout*, is also a diminutive variety, seldom weighing more than a quarter of a pound. Confined in its growth, and in its multiplication likewise, by the scantiness of its supply of food, it is nevertheless probably descended from the active monarch of the river, and its primogenitors rioted in the fulness of bulk and the pride of beauty, though the descendants are now dwindled to pigmies, and are as dingy as the peat mosses can make them. Our best authorities seem to maintain, that these several scions are derived from one common stock, and that the magnificent *Benacus* of the ancients, the *Salmo fario* of the moderns, which in some of the continental lakes arrives to the weight of sixty or seventy pounds, may be the type of all the species. The subject is, however, beset with difficulties, that even the accuracy and research of the most observant naturalists cannot as yet conquer; for such is the power of the animal frame to adapt itself to contingencies, and to alter itself to meet the circumstances around it, that useless parts are curtailed, and necessary parts added, for the purposes of the body. Such changes we have shown to happen in the general contour, the colour, bulk, and even the placing of the muscular masses; and it would seem, also, that they occur in some degree in the organs moved by these masses: thus Sir Humphry Davy observes, "I have known the number of spines in the pectoral fins different in different varieties of trout; I have seen them twelve, thirteen, and fourteen: but the anal fin always, I believe, contains ten or eleven spines. The smallest brook trout, when well and copiously fed, will increase in stews to four or five pounds in weight, but never attains the size or characters of lake trout." We shall have occasion, when treating of ponds and stews, to further notice how alterations may be effected on the qualities of trout by external agencies, particularly those resulting from the waters they inhabit. Sir Humphry Davy, in one of his lectures at the Royal Institution, on the chemical nature of soils, has observed that the waters which flow over calcareous beds are particularly favourable to the perfecting of the trout frame; and the superiority of these fish in Ireland has been attributed to the circumstance that so many of the Irish rivers flow over limestone beds.

3483. *In its habits*, the trout is predaceous and solitary. It shuns the sight of man; and yet instances of a subjugation of its timidity and wildness have occurred, one of the most interesting of which is related by Mr. Daniel: — "A recent proof of the familiarity of a trout occurred in 1808. The garrison of Dumbarton Castle, in Scotland, was thrown into general lamentation by the sudden loss of its *oldest veteran*, who had served therein, a general favourite of the various regiments who annually change their quarters, while he remained on permanent duty, without any alteration in rank or condition, for the long period of twenty-eight years. He was, however, always deemed an odd fish, being neither more nor less than a trout, which having been caught by an officer in the river Leven, was brought alive and put into the garrison well, that flows to the surface, where in time it became so tame as to receive its food of bread, &c. from the hands of the soldiers, in the water. When first taken it weighed little more than a pound, and (from the quality of the water, as is supposed) it never afterwards increased in size. The loss of this extraordinary favourite was, we are told, much regretted by those who compose the present garrison of Dumbarton Castle, and will probably be so by many others, who in former years have been equally diverted by the pleasing intercourse with their aquatic comrade." The favourite resort of the trout is generally to clear, cold, and quick running streams, with a stony or gravelly bottom. They are also found in lakes, and will even live in more still and confined waters, but in none that have not the mass of their fluids continually in a state of change, by means of brooks running through, or springs arising up within them. The trout lives, says Dr. Shaw, on worms, small fishes, shell-fish, and aquatic insects, and is particularly delighted with the winged tribes of them, more especially with the *Ephemeræ* and *Phryganeæ*, and their larvæ. It generally spawns in September, or in the colder parts of Europe in October, and at those times gets among the brooks or sandy shallows in order to deposit its eggs, which are observed to be far less numerous than those of other river fish. "Yet the trout," as Bloch observes, "is a fish that admits of very considerable increase, owing, no doubt, to the circumstance of most of the voracious kinds of fishes avoiding waters of so cold a nature as those which trout delight to inhabit; and their increase would be still greater were they not themselves of a voracious disposition, frequently preying even on each other.

3484. *The spawning time of the trout,* however, we hardly think to be here correctly stated: we cannot deny that trout occasionally spawn in September; we have ourselves taken them full roed in that month, but it was a very rare occurrence. Towards the end of October many trout will have spawned, but many more will have yet to go through the operation in November; and we have now and then taken one which had not completed the generative process even in December. The author of *Salmonia* says, that from the middle of November till the beginning of January is the trout spawning time, their maturity of roe depending upon the temperature of the season, as well as on the nature and quantity of their food; and he might, we think, have added, as one of these contingencies, the size of the fish also; for we have observed, as a general fact, that the smallest individuals of the species spawn the first. In some rivers trout begin to spawn in October, but November is the chief month: in the end of September they quit the deep water to which they had retired during the latter part of the hot weather, and make great efforts to gain the source of the currents, and having reached the end and sides of a stream, or the gravelly bottoms of shallow running waters, they therein make themselves beds and deposit their ova. They are often found in whirlpools, in holes into which sharps and shallows fall, and near to locks, flood-gates, and weirs, also under bridges, or between two streams running from under their arches, and likewise in the returns of streams where the water seems to boil; in the decline of summer they are to be found near mill-tails.

3485. *In some rivers they appear to come into season sooner than in others:* we have observed this in some parts of Wales. Mr. Lascelles says the same of the Driffield in Yorkshire: equally various are the times of their preparing for the work of propagation, or getting out of condition, for these terms are in fact synonymous. Early in September they will leave some waters and seek the brooks and mild sandy shallows in creeks, &c. where the knowing angler often follows them and entices them with the gentle: but hold, angler! 'Thou shalt not take the dam with her young.' They are now not worth the taking; they are insipid to eat and powerless to contend; you can therefore reap neither profit nor credit in the pursuit. A trout may be known to be in full condition when the head is small and the body oval, the flesh of a deep red, and the general colour that of a deep olive above, and of a bright silver below, with the spots brilliant and distinct. These appearances are most observable in the trout of quick streams, and in such as have a plentiful supply of minnows and other small fish. The May-fly season also produces in them great strength and fulness. The relative proportions between the weight and dimensions of trout vary much when they are in season and when they are out; on which subject, as one that it is convenient to the angler to be enabled to form a correct judgment upon, some rules are given. A trout we took in good condition, from a water very justly celebrated for the excellence of the fish of this kind it yielded, weighed one pound eleven ounces, and measured seventeen inches in length. Another, weighing two pounds, was nineteen inches long; and these proportions are not uncommon. Locality has, however, much influence on the proportions, colour, and even habits of trout. In small rapid streams they often breed prodigiously, but seldom arrive to any considerable size, although their flesh is a bright red, and remarkably well tasted. The head is small, but the body is deep, and the fins are tipped with a golden hue; the scales are small, the sides are yellow, and when in full season are often spotted over with red and black dottings. Such are found in great numbers in many rivers of South Wales, particularly in Lake Llyndivi.

Subsect. 1. *Bottom Fishing and Minnow Spinning for Trout.*

3486. *Angling for trout* is a very favourite amusement with many (*fig.* 530.) Few fish afford the angler such diversion as the trout, or require more skill to take them; and such is the passion to fish for them, that the liberty of angling in some of the streams in the adjacent counties is purchased at the rate of ten pounds per annum by the *amateurs* of the metropolis: we might add, that hundreds of London anglers quit the town, during the spring months and visit the different rivers throughout the kingdom, principally for the gratification of trout fishing in various ways. Fly-fishing is a very attractive mode, on which we shall treat somewhat largely and separately hereafter. It will be our present object to describe the angling practices below the surface of the water. Trout begin to take a bait on or near the ground early in the year, and before March will readily take most bottom baits all day long in favourable weather; but as the summer advances, it is only very early or very late in the day that they will take a bait near the ground, they being at the intermediate hours more disposed to rise to the surface for winged insects. In March and April use the worm in the forenoon, and a fly or minnow, according to the state of the water, the rest of the day, in the swiftest and sharpest currents, provided the day be warm and bright, and in the deeps early and late; but if the water be discoloured or very thick, try the gravelly shallows near the sides and tails of streams with a worm only, to run on the bottom with one large shot a foot at least from it. When there is a small *fresh*, or the water is clearing off, and is of a dark brownish colour, first use the worm, which should be a well scoured brandling, cast in as a fly at the head of the stream and move it gently towards you, still letting it go down with the current so as to keep it a little under water; the line should be rather short with no lead upon it, and the hook fine; then try the minnow, and as the water clears, the artificial flies should be tried. In fishing for trout with the worm use running-tackle, and employ a strong line, but let its strength consist in the excellence of its material rather than its bulk, to which end the hook should be small, the gut fine, the shotting fine also, and let the whippings be well concealed, for in bright water trout are singularly wary and suspicious. In some few instances a float is indispensable, and when such is the case, let that likewise be as light and fine as the water will allow: in many cases, however, a float is unnecessary in trout fishing, and a *tripping bait* without one is commonly to be preferred, which is thus managed:—Make use of a rod from fourteen to sixteen feet long, firm but light; draw out as much reel line as with the gut link will altogether reach somewhat beyond the length of the rod, if it be longer it will be unmanageable, if shorter it will not give all the scope or range it ought; the hook may be No. 5, 6, or 7., according to circumstances. In a late very well got up edition of Bowlker, the following, evidently borrowed from Salter, and embodying some of the best rules for worm-fishing for trout, is introduced:—"Bait with either one lob-worm, two small red worms, or two brandlings, all of which are required to be well scoured and very lively, for a trout will not touch a worm that is half dead, or in any way mangled or dirty: put the lob-worm on the hook in the following manner,—enter the point of the hook about a quarter of an inch below its head, and carry it down to within the same distance of its tail, keeping the point of the hook completely hid in the worm: if two small red worms or brandlings be used, run the point of the hook in at the head of the first and bring it out about three parts down its body, then draw it carefully up over the arming or whipping of the hook while you put on the other; put the point of the hook into the second somewhat below the middle, and

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TROUT FISHING.

carry it near to the head, then draw the first worm down to join it." Marsh-worms, or gilt tails, are frequently used in the same manner.

3487. *When angling with any tripping bait,* be it worm, caddies, or gentles, it is necessary to have as many shot on the line, about nine inches from the hook, as will readily sink the bait; because, if the stream be rapid, the bait is carried away without touching the ground, consequently there is but little chance of a trout taking it. While thus fishing with the running line, keep as far from the water as you can, and let the bait be carried down by the stream into the trout haunts, and when a fish begins to bite, do not strike the first time you feel a slight tug, but rather slacken the line; and when you feel one or more sharp tugs together, then strike smartly: if it is a heavy fish, do not be too eager to land it. It may be added to these directions, that when a lob-worm is used as a *tripping bait,* no shot are necessary on the line, the weight of the worm itself being sufficient, and the absence of the shot advantageous: allow the worm to roll of itself over the ground, which it will do when unencumbered with shot in the most natural manner; and where there are large trout, this bait so managed often proves irresistible. As a general rule, lob-worms are most adapted for deeps, and coloured or thick waters, and red worms and brandlings for brighter waters and depths not so profound. It will be found an excellent plan, when a bank overhangs a supposed trout hole, to cast a worm over the edge of it without approaching near; the line should be unshotted, letting the worm roll naturally off the bank into the water, when if a trout be there, it will be taken almost to a certainty.

3488. *The niceties of worm-fishing* are so hit off in the following lines from a most determined and excellent practitioner of this method, that we cannot forbear presenting them as a wind-up: — "Trout are to be taken in bright water and weather with the worm, when they will not touch either minnow or fly; and there is certainly more art and sportsmanship in fishing with the worm at that time, than some people imagine or acknowledge. When to the advantage of bright weather are added those of clear and shallow streams, much artifice must be employed. Your tackle must be very fine, your hook small (No. 5, 6, or 7.), and your baits well scoured and lively. A winch will enable you to vary the length of your line as occasion dictates; and though in general it must be as long or longer than your rod, yet where there is wood, &c. &c. you may by shortening it get at the holes, and still contrive to keep *out of sight,* for completely so to be must never be forgotten, — kneel, stoop, or stand — out of sight you must be; and then, if you can lightly and neatly drop in a lively brandling near the likely holds or haunts in a strong stream, especially near the top of it, let the sun shine ever so bright, be the wind rough or calm, and the water ever so clear, you will kill fish when they are not to be taken by any other mode."

3489. *Worm-fishing in the wide open waters* of some of the rivers remote from the metropolis, particularly in the mountainous parts of Wales, Yorkshire, Cumberland, Northumberland, &c. &c., where we have pursued it in its highest perfection, is indeed a most interesting practice. There, knee-deep in the broad expanse, with a rod sixteen or seventeen feet long, light but firm, and fitted with a small winch and running line, having appended to it three yards of gut, strong above and fine below, its white glare having been taken off by a tea infusion, and then finished by a No. 7 or 8. hook, which we will suppose baited with a well scoured red worm, — so accoutred, brother angler, you are deserving of sport; and to obtain it we further recommend you to proceed thus,—draw out as much line as you can manage, and casting the bait up the stream, or rather giving it a very slight inclination to the one side or the other, allow your bait to roll along the ground by the force of the stream. Two small shot are sufficient to weight the line if the water be shallow; if deeper and strong, add one or two more, but still fish as fine as you can. Direct the worm into every likely spot, but particularly whenever a curl in the water betrays an eddy, or wherever its direction tends to bring down the food into a hollow below, or around the edge of the larger of the numerous stones and rocks which start up in these wide streams. When a fish is felt, throw up the hand and strike nearly upright, that you may fix it firmly; by which practice we have killed trout in the middle of the hottest day, when other amateurs had laid by their tackle in despair until rain had deepened and coloured the waters. In the morning and evening this plan is infallible; and we would recommend the most devoted fly-fisher or minnow spinner to try it, as he will really find that when trout, particularly large ones, will not rise to a fly, or even strike at the minnow, they will sometimes take a well scoured red worm, thus *naturally rolled* to them.

3490. *These methods of worm-fishing* may be successfully varied, sometimes by sinking and drawing the bait instead of allowing it to trip, in which case shorten the line somewhat, and sink the worm into any likely deep, drawing it slantingly across here and there; occasionally draw it gently up likewise, which will often stimulate the trout to seize it.

3491. *Dipping and roving with the worm* will prove now and then the best line to pursue, by which it may be shown in mill-races, flood-gates, and other such like situations, but more particularly in the runs between weed-beds, where the best trout often lie concealed. In pursuing these various methods it is necessary to add lead to the line sufficiently to sink it: the quantity proper for that purpose must be judged by the nature of the water, observing that if weight enough be not employed, the bait will not reach the bottom, but float about by the force of the stream. The shot made use of, however, should be small, that they may be placed, if the stream be quick, as near as four inches; but if moderate, not nearer than eight or nine inches from the hook. Do not strike at the moment a fish is felt at the bait; for in thus taking it off the ground, it is common for the trout to elevate it two or three times before he gorges it. When a repetition of the pulls occurs, then strike smartly and proceed to play the fish, but be not in a hurry to land it if large, until it is exhausted.

3492. *Caddis, grubs, caterpillars,* and in fact all the various larvæ and pupæ described among insect baits, prove excellent lures for trout during the spring and early summer months; and as these advance to their last change, the perfect insects are as readily taken when used in natural fly-fishing, which part of the subject will need no further notice at present, as we shall dedicate a section to natural fly-fishing hereafter. Gentles are used for trout angling in summer, but they are best shown by means of a quill float, with the finest tackle, and a hook, No. 8, 9, or 10.: sink the bait to within two or three inches of the ground. We have occasionally used a caddis and two gentles with success, or two bloodworms and one gentle; and if we are not mistaken, this association of baits tends to deceive these wary fish more than a single one. Gentles are particularly calculated for trout-fishing in still waters communicating with rivers: we have so met with them in canals fed by rivers to which trout frequently resort, when they have had a temporary glut of minnows. We have found them particularly in the Grand Junction Canal, which is crossed and recrossed by the Gad and Bulbourn rivulets, the union of which forms a very excellent trout stream. A portion of it was rented by us, and we observed the fish made frequent migrations from it to the canal: towards the decline of an unfavourable day we could always meet with them there, and we could also commonly secure them by a worm or gentle, which it is more than probable they would have refused in the stream: we have witnessed the same in many other similar situations. Trout are likewise very often to be found in the brooks which communicate with rivers, up which they pass to look for caddis, water insects, and other delicacies. Any heavy bait is worse than useless in trout angling; but a few small pieces of worms, or a few unscoured gentles, according to the nature of the hook bait, if rolled in sand and cast in occasionally, attract their attention to the bait, and relieve them from any fear of entrapment.

3493. *Salmon roe* is a summer bait for trout, and at particular times is the most killing for trout of any known. The line, the float, and the hook used with it must be as fine as when fishing with gentles, and the roe should be sunk within one inch of the bottom: we further recommend, when it is used, that parboiled barley be thrown in both before and during the fishing, which, done in small quantities, will be found to detain the fish without glutting them. In regard to the true season for trout, we hope we have now satisfied the bottom angler that his trouting practice may be pursued throughout the whole summer: but it must be remembered that during the hot months and bright days, success is only certain early in the morning, and from the early part of the evening until late. In bright nights, some pursue it all night long; to which practice, although we do not advocate it, we shall again recur hereafter.

3494. *Living and dead fish baits* are among the most attractive that can be offered to trout. Live minnow-roving is sometimes practised with a shotted line, but does not, we think, usually prove very effective. A living minnow is also occasionally appended to a float line, and made use of in the gentle currents of trout rivers; but the float practice has little to recommend it beyond its placid character, and its freedom from trouble and labour in baiting. The different methods of using the living minnow, gudgeon, &c. are fully detailed in the section on live baits: loaches, bull-heads, and gudgeons, are now and then likewise employed as live baits for trout: but these are even less eligible than living minnows, except on night lines, in which way they very often take the largest trout, and for this purpose they are even preferable to minnows, as they are usually hardier.

3495. *Dead fish baits* are employed much more effectually in trout fishing than living ones, and their superiority is as great as that of living fish over dead ones, when taken in the common course of feeding by trout. This probably arises from the circumstance, that the living *bait-fish* seldom shows itself but as an exhausted object, which subjects it to the suspicion of being diseased and unhealthy, objects which trout, however voracious, always avoid, probably from an instinctive dread of intestinal worms, which, thus taken, would immediately colonise themselves in the new subject: the dead fish bait, on the contrary, can be exhibited in full action, and with more than its natural energy, the rapidity of its motion completely concealing the snare which accompanies it.

3496. *Minnow spinning or trolling* is not only a very effective method of taking trout, but it is altogether a favourite pursuit, and after fly-fishing is certainly superior in its attractions to any other. Like every other popular amusement, it is practised in different ways, and with different apparatus. In the section on live baits, we have already described some of the methods which are employed by anglers, and we shall here introduce some others more worthy of attention, commencing with that which may be supposed to have gained some celebrity, from its being lauded by Colonel Hawker. To attempt to describe it in any other language than that of the colonel himself, would be to rob the subject of half its force and interest. "Trolling or spinning a minnow," he says, "is a most general mode of trout fishing; or, I might almost say, trout *poaching*. It is, however, very rarely done in a proper manner, though every man, as a matter of course, upholds his own system. I, like all the rest, did the same, till after fancying for years that I could challenge any one, was beat and laughed at by a *trout killing* divine. Now, however, I have not only got master of his plan, against which all others that I had ever seen, read of, or heard of, had no chance whatever; but I have remedied a few trifling defects that it had, and put Chevalier in possession of the improvement. The great advantage of it is, that it takes the trout when they run and *bite short* by means of fly-hooks that play round the other on a *separate branch of line*, so that I have often killed three or four brace of trout without the minnow being in the least injured or even touched by the fish. To describe the tackle *properly*, without giving a plate of it, would be difficult, if not impossible." It is to be had at all London tackle shops.

3497. *In unison with this suggestion on minnow-spinning* we present a figure of the tackle which the colonel recommends, and in consequence of his recommendation, backed by that of the author of *A Handbook of Angling*, it is at present very generally used. It will be seen (*fig.* 531.) that the apparatus consists of two links of gut, a longer and a shorter one. "A minnow hook, No. 1. is whipped to the shortest link, and to the other a triangle of three No. 7. hooks tied back to back, which are to hang about three inches below the larger one: when the minnow is on it, a second triangle, whipped to the same gut, should hang even with the side of the bait. These links altogether form a harness which is to be attached to the line with a small box swivel between them. The perforated snout-lead is, however, first put on. Having selected *a white bellied* minnow, of *rather small size*, and hardening it in bran for an hour or two, first draw back the plummet, and put the large hook into the minnow's mouth and out through the right gill, taking care not to tear the mouth of any part of the bait; then draw the line three or four inches to you, so as to be able to get the hook back again into its mouth. Then take the minnow between the finger and thumb in the left hand, and the large hook in the right hand, and run the hook *all down its back, close to the bone*, to the very end of the fish, and let it come out about the *centre* of the *tail fin*. Then with your right hand pull the minnow out as straight as it will lie, and press it into natural form with the finger and thumb. Afterwards, *nip off* the *upper* half of the *tail fin*, in order to prevent a counteraction to the spinning of the minnow. Having done this, draw down your plummet again, and see that your branch line falls smoothly by the side of your bait line; and if not, rub it with Indian rubber till it does. Your hook is then ready for action; and action indeed, it may be called, if properly done. I should observe, that a new gut seldom spins the minnow so well as one that is half worn out (by reason of the stiffness which encircles the minnow's gill): therefore ten minutes' soaking in water, and sometimes a little hard friction of the gut, just above the large hook, may at first be required, besides the working it with India Rubber. So much for this plan: there *may* be many better; but all I can say is, that I have not yet *seen* one fit to be named with it." We now also well remember long ago to have heard mention of a killing method of minnow spinning with loose hooks, which very frequently entangled the trout when it was making its turn round after having refused the bait. What that exact method was, we do not now remember; for we were at that time attached to a plan of our own, detailed below; and we apprehend that we were not very slow to believe that the loose hooks would scare the otherwise wary trout. Such hold has prejudice on mankind, that until accident has brought them to light, half the advantages within our reach remain unknown to us: we insist (and with the greatest propriety) on the necessity of hiding even the finest knot in the whipping of a trout line by covering it with white wax, and occasionally of colouring the whole line; who therefore amongst us would have believed that the devil-bait, unlike any thing in sky, earth, or water, would have been so readily snapped at by a keen eyed

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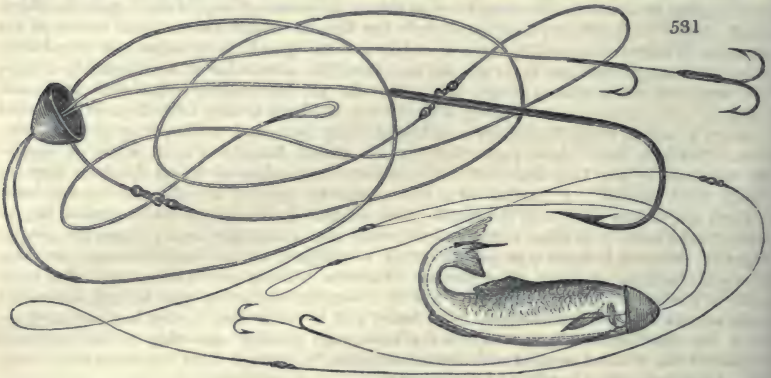

MINNOW TACKLE.

trout, capable of discovering the slightest false shade in the artificial fly, and apt to refuse the best dressed one, if offered half an hour beyond the natural time of the appearance of the original. To resume our subject, what the precise apparatus which had been hinted to us was, we are not aware: but the principle was the same as that brought forward so liberally by Col. H., and for which every angler is indebted to him; and though we have not ourselves adopted it wholly as will be seen, yet we have in part, and have been benefited by the addition. We likewise know several good minnow spinners, who will now use no other than this.

3498. *The methods of minnow spinning,* recommended by Mr. Salter, are those with the double and single hooks described with live baits. In using two hooks he directs that the first should be a long shanked No. 1. tied to nine inches of single or twisted gut, having another piece of gut three inches long, furnished likewise with a No. 9 or 10. hook whipped to it, so that the smaller hook may reach to about the shank of the larger: he now lengthens the long link of gut by another piece, first interposing between their ends a swivel, to which he adds also a third gut link; but this we should recommend to be doubled or twisted, although Mr. Salter makes no mention of that operation. Between the junctions of these last pieces, place another swivel; lastly, put a shot on the gut within half an inch of each swivel, and all will then be complete to receive a minnow or small bleak. It is singular that Mr. S. directs two shot (to weight his line as we suppose), though he says nothing about the size of them, which if necessary ought to be large: yet in the face of these directions, his figure, which in other respects is an excellent one, exhibits no shot, but on the contrary a nose-lead, that certainly answers the purpose of extending the minnow much better than the shot, which have a bad mechanical effect on the line carrying the spinning action of the angler's hand through a segmental line, instead of a straight one. We are of opinion, however, that a small pipe-lead introduced within the mouth, or a leaded hook, are either of them neater and likewise better than the nose-lead. When a large hook only is used in minnow spinning, Mr. S. insinuates it, first, under the chaps of the bait, bringing it out on the outside of the nose, then re-introducing it and passing it through to the tail as usual; or otherwise enter it at the chaps, and pass it out at the nose as before; then again introduce it by the mouth and out at the gills, after which finally pass it through the mouth to the tail, then draw the slack line at the mouth tight, and tie the tail and hook together with white silk.

3499. *Another plan has been adopted.* It certainly is not exactly like any of those usually employed, though there is no novelty whatever in the *principle.* Three ready-made double hooks, or otherwise three pairs of single hooks being tied together back to back, of size No. 8 or 9., are each to be whipped to a piece of fine round gut, one of the three pieces being of the length of four inches, and the two others of three inches each: this done, make a fine loop at the unhooked end of each of three pieces. Insert near the root of the tail of a white bellied minnow, by means of the baiting needle, the loop of the longest piece of gut, and allow its double hook to bury itself within the skin, and the barbs to apply to the spread of the tail: next, introduce. in the same manner, one of the remaining pieces of gut on the contrary side, at such part of the minnow as shall bring the loop of both pieces very near but not exactly together, that is, the loop of the shortest should project scarcely one-eighth of an inch beyond the other: lastly, allow the remaining double hook link to be included with the loops of the other two into one master-loop of the hooked swivel of the traces, or into one made in an additional strong piece of salmon gut, interposed between the traces and them; this last must hang loose by the side of the baited minnow. Before you attach the swivel traces, however, pass these loops through the bore of a nose-lead; or otherwise pursue the following method, which we ourselves preferred and usually practised,—pass it through a small tube-lead, to be then forced into the mouth and throat of the minnow. In *fig.* 531. such a lead will be seen just covering the fish's mouth.

3500. *In baiting*, by having allowed the loop of the longer piece, as already directed, to be a trifle short of the other, the consequence was, that when the whole was drawn tight up by action, this inequality rather gave the minnow a twist, particularly towards the tail, which greatly contributed to its spinning. We have varied this apparatus also in different ways: we have fitted it without loopings, and have instead whipped the gut ends, when the bait has been armed, to the single piece of long gut, over which whipping we passed a thin roll of sheet lead as a weight. Another method we pursued was, to loop the three, so that the loops hardly projected beyond the lips of the bait, which loops we included in a piece of gut and whipped it firmly: over this we carried the nose-lead, and the whole was then very neat and efficient. If any brother angler should be prompted to set up this apparatus in this latter manner, it will be prudent for him to pass the loose double hook through the opening of the gill (*fig.* 531.), which we in fact always did in whatever way we used it; and we would now recommend also that the angler, instead of one loose double hook-trace as employed by us, should apply two, allowing the second to hang two or three inches longer than the other, and to be attached to the master-loop through the contrary gill. We were led to make use of this apparatus by the frequent disappointments encountered when minnow spinning, of finding ourselves foiled by trout, which, after striking the bait, turned short round and let it go again, particularly when not eager to feed. The event of the trial confirmed us in the use of it; for as these fish usually strike the bait crossways, so it frequently happened that, when they would have wished again to abandon it, the central hooks have held them fast: and after our adoption of the loose hooks, when they only showed themselves to the bait without striking or seizing it, they still were often caught foul by those means, when on the turn to make their retreat.

3501. *A plan of baiting*, somewhat similar both to our own and to that which Colonel Hawker describes as practised by some anglers, consists in employing three double hooks, the first (which forms the foot of the line) is surmounted by a second whipped to the same gut about an inch above, and a third is also whipped an inch higher. In baiting, fix one of the barbs of the upper hook through the lips of the bait-fish, the next into the back, and the third a little above the tail; observing, in applying them, to draw the minnow so as to curve it a little.

3502. *Another method of baiting* had been adopted by us before that just described, as one which, although simple in itself, was effective, and met the difficulties of giving gravity to the bait-minnow without encumbering the line with a weight visible to the trout; it also kept the bait straight on the bait-hook without distortion. The apparatus consists in a No. 1. hook, taper leaded at its upper part to lie within the minnow, so that its extremity may be exactly lodged within the mouth, the top of the shank just meeting the lips: thus, when the large hook has been introduced, the triangle of three hooks, No. 8 or 9., and attached to the hook line by a minute loop, may be brought close to the nose, and one of the hooks buried in the back of the head, all which is to be finished by inserting two stitches through the loops, one on each side of the line, with blue or grey silk cut off close. In this method of baiting, as it is of consequence that the hook of the triangle fix itself into the minnow exactly at the junction of the head with the body, by which the hold is rendered much more secure, and less likely to disfigure the fish, so the angler will find it prudent to shorten the shanks of the hooks considerably ere he unite them into the triangle. To obviate the inconvenience of the minnow slipping back on the large hook, and becoming crumpled and deformed, we have seen hooks with a sort of pointed process towards the end of the shank, which should allow of the ingress of the hook readily, but when the mouth was closed, some part of it being caught by this sharp rising process, prevented its retraction by the force of the water.

3503. *The devil-bait*, which, as a trout killer, is worthy of some farther observation here (see p. 1026.), will be known to the angler, although the non-angling reader (we almost tremble for our own reputation or the fate of our pages), on opening our tome, may be startled with so astounding a title. As a rose would smell as sweet by any other name, so the trout are known to take this kind of *Devil Minnow*, spite of its terrific appellation, so readily, that it has become an especial favourite with the luxurious fisher who dislikes trouble, or with him who cannot procure another; and it certainly does wonders, though we are constrained in candour to own, that from the time of its introduction some years elapsed before we could persuade ourselves that it would take fish, or that they could be so easily beguiled as to seize on such an anomalous figure; but having tried one and succeeded with it, we never afterwards moved on an angling expedition without one. What it is taken for, the fish only know; for we are certain the angler himself cannot divine. Mr. Salter talks of devils, or *artificial caterpillars*. The *Sphinx Atropos*, it is true, produces a monstrous caterpillar, sufficiently variegated, and with a name sufficiently portentous; but we cannot think that its resemblance to this or to any other caterpillar entitles it to be so called. The trout, however, without any casuistry, appears to take it on trust, little troubling itself about its typical qualities; and this amongst many other instances serves to show us how contradictory fish are in their habits, at one time foiling us and all our artifices, and at another falling by a snare fitted only to deceive the blind, and yet not such a one as Dr. Moyes, who could tell the colour of a coat by the feel, or the number of persons in a room by snuffing up the number of their atmospheres, or by the identities of presence impinged on some one of those senses which served for that of sight!

3504. *The devil-bait* (as seen at p. 1026.) is made of leather or silk, and is striped of various colours, worked over with gold and silver wire, so as to be as gaudy as possible: the tail is of horn, silver, or block-tin (we have seen it of tortoise-shell also), to which is usually appended a double hook or a triangle of hooks; and on the other side, but nearer the head (if it can be said to have one), is often another triangle or double hook, with a single one added in the place of the ventral and dorsal fins. The whole thus formed presents something of a fish-like character, but without a defined head. These baits are to be procured at the tackle-shops; and from the complexity of their structure, it would be vain to enter on any instructions how to make them.

3505. *To use this bait*, apply swivel-traces, and append it to the reel line with a minnow spinning rod, with which it may be cast to great distances and from great heights, as the tops of bridges, &c. In the deep water of lochs, meers, &c. its brilliancy attracts attention. where less conspicuous objects might fail. In still pools, or in rapids, it appears equally an irresistible lure; and often a single dip or cast of it is sufficient to have it struck at, if a trout at all on the feed be present.

3506. *The minnow* is sometimes also used on a gorge-hook in trout anglings, as particularised among the *live baits* (p. 1017.); and the new bait, called the minnow-fly, which is drawn on the top of the water, is likewise employed for a similar purpose: some account of it appears among *dead baits* (p. 1027.).

3507. *The minnow spinning rod* has been already hinted at as one which requires length and strength combined with lightness, which requisites appear best obtained by having it made of cane, except the last joint: it must be neither too flexible nor too stubborn, either extreme will impair its utility; if too stiff, the hook or the hold will be endangered when striking; if too pliant, it will yield to the resistance of the water too much to allow a ready stroke to be made when a bite occurs, and the fish will escape ere the effect of it reaches him. The first delivery of the minnow on the water should be delicately done, so as to raise no disturbance in it either by noise or splash, which is managed by checking the impulsive swing just before it reaches its destination, at the same time dropping the hand as well as the point of the rod, which will thus check the bait, and lay it lightly on the water. This effected, begin to draw the bait slantingly across the stream, at various depths, with a certain degree of regularity, observing also to imitate the shootings of the living fish in its actions: and as Colonel Hawker, in the true spirit of a piscatory tactitian, observes, "if a fish comes after your minnow never stop it, or in any way alter your pace, or he will most likely be off again directly." More fish are lost by the nervous feeling which shoots through the young angler when he perceives the first rush of a trout, and flinches from or starts at it, than by any other course whatever. If nothing of this kind takes place, the trout sees no cause of alarm, and there need be no fear on the angler's part, but that he will himself strike the fish at the regular pace at which he attempted to overtake it; and that being done it only remains for the fisher to fix the hook or hooks within its mouth by a smart stroke from the wrist, if possible in a direction contrary to the progress of the fish.

3508. *The minnow spinning practice* on the wide expanse over which the best rivers of the distant counties extend, is by no means the same as that which appears in the theory, and in the written instructions of some of our best angling treatises, as the general one, and that which is applicable to all situations and all waters. The fact is, that the usual details of fish and fishings are, with a few exceptions, calculated for the London meridian only, the writers seeming totally to forget every water but the Thames, the Lea, &c.; or if by chance they extend themselves somewhat, banks and hedges accompany them; and while reading their didactic accounts and the piscatory rules, the tyro would suppose he could always pursue his various practices in ease and safety, warm and dry, from a level embankment, or the verge of a smooth pebbled shore. But if it had fallen to our lot to initiate him in the Dove and Derwent, or the Aire, the Wharfe, or Swale, or the Wye, these downy pillows must have vanished. Had he journeyed with us still further north to the Eden, the Tyne, and the Coquet; or had we met with him in Wales, and he had taken his first lessons in the Usk, or the "ever winding" Towey; or entered his novitiate in the Torridge, the Tamar, and Exe of the west, he must have abandoned the shores, and have waded in different depths, as we have done in these and many other of the British waters, or he would have taken no fish. In these distant rivers such irregularity prevails with regard to wind, weather and water, as is seldom more than hinted at in our books: the happy moment must here be at once seized, and the ready and enterprising angler will alone prove fully successful. In a rocky and wide, but shallow expanse of the Usk, we once met with admirable sport which will illustrate this remark. The water was just tinged by a slight flood, the whole effect of one night's rain; fortunately we had furnished ourselves with some minnows, of which, for similar occasions, no prudent fisher should be without a store. With these we plunged mid-deep into a part of the river we were not unacquainted with, and pursued our sport about two hours and a half, when (for we profess to be averse to fish-murder), from the number we took, we were induced to leave off earlier than we should otherwise have done, but we still returned with such a basket as ought to have satisfied even a piscatory glutton. The next day we visited the same spot, and in eighteen hours only the water had lost several feet of its depth, and become as clear as crystal; the trout so greedy yesterday would this day neither take the minnow nor rise to the fly, for the water was unfavourable, and they were already glutted.

3509. *In these wadings*, however, it is absolutely necessary for the angler who visits for the first time the rivers of these countries, to be furnished with an able guide, and still more particularly if the water be coloured, at which time minnow spinning is most productive of sport, and therefore most proper to be followed. Without a local knowledge of his own, or the assistance of such a guide, the angler may in the midst of his pursuit be plunged in a moment into an abyss too deep to rise from; such are the sudden and abrupt depths of these streams, which run through rocky and mountainous districts. When wading for the purpose of minnow trolling, it is necessary to shorten the line somewhat, so as to have a full under-hand command of the bait, and to keep the point of the rod near the surface of the water. We also advise the angler that, to avoid abruptly disturbing the fish in such open situations, he should first steal gently through the water to a spot and then fish around him, moving a step only at a time, observing, for his own security, to take each step with a stout spiked landing-staff grasped as a support: make short springing movements, not violent jerks, with the wrist, the space seldom allowing of a series of determinate throws of the fly at one unvarying rate, or an uninterrupted line of action, as is practised in other waters. The stroke in these cases must be quick, for so the trout takes the bait, for the most part; and when struck he must immediately have his head upraised if possible, or he will shoot off to some deep or shelving hollow. If his size will not suffer him to be wholly restrained, give him liberty, still acting with a restraining hand sufficient to tire him by his opposition, and then he will drown himself, as it is termed, for here no weeds or piles can entangle, though rocky stones may conceal him and cut the tackle. Do every thing, however, to avoid these dangers, except following the fish, and under no circumstance do this unless you know every inch of ground.

3510. *Floods* take place very rapidly in rivers of the kind just alluded to; the mountain torrents appear, in many instances, with inconceivable rapidity. We were informed at Llandilo, that a sudden fall of rain in the course of the river beyond the Brecon Hills has produced a swell above so quickly that it has been heard before it appeared, and then arrived so suddenly as hardly to give the angler time to cross the stream. We by no means vouch for the fact to the extent here noted; but we have ourselves seen that stream, as well as the Eden and the Tyne, both low and fine at night when we left them, but by the following morning turbid, and many feet deeper than before, roaring and foaming in their passage too impetuously for any angling whatever. The tourist can never therefore calculate on a day's fishing in these countries with certainty: but, on the other hand, sport is very seldom long delayed; yet, to embrace it, he must be prepared not only to seize the opportunity the moment it offers, but also to practise that particular method by which alone success can be achieved; and therefore, if unable to vary his practice, he must often draw a blank. He may succeed with minnow when the water is too foul to fish with worm; the fly will kill when the minnow is failing from the clearing of the water; and after it has become too bright and too low for either of these to do execution, then the expert worm fisher (but the very expert one only) may yet draw trout from their retreats, as qualmish children are tempted to take medicine from one hand, by the dainty sugar-plum held in the other. These particulars are the more earnestly pressed on the notice of the angler, because in many of these rivers running over limestone tracks, no coarse fish occur to fill up an hiatus; no pike can be looked for in a cold blustering day, no chub dipped for in a basking hot one; trout alone in some of them, trout and grayling in others; and in a third, perhaps, an occasional salmon appears like a meteor to illumine the gloomy vacuity. These, and these only must be looked for, and cannot therefore be looked for with too many eyes, too many hands, or tried for by too many methods, so they be fair ones.

3511. *Night angling for trout* is often practised, but as it appears to have been better understood by Barker than by ourselves, we will offer his experience of it instead of our own, which is but small. It seems that this artist was directed by his patron to procure a dish of trout against the following morning, and he describes his progress in the execution of his intentions as follows: — "It proved very dark; I threw out a line of three silks and three hairs twisted for the upper, and two hairs and two silks for the lower part, with a good large hook. I baited my hook with two lob-worms, the four ends hanging as meet as I could guess them. I fell to angle; it proved very dark, so that I had good sport, angling with the lob-worms as with flies on the top: you shall hear the fish rise on the top of the water, then you must loose a slack line down to the bottom as nigh as you can guess; then hold your line straight, feeling the fish bite; give time: there is no doubt of having the fish, for there is not one among twenty but doth gorge the bait; the least stroke fastens the hook, and makes the fish sure; letting the fish take a turn or two, you may take him up with your hands. The night began to alter, and grow somewhat lighter; I took off the lob-worms and set to my rod a white palmer-fly made of a large hook. I had good sport for the time until it grew lighter, so I took off the white palmer, and set to a red palmer made of a large hook. I had good sport until it grew very light, then I took off the red palmer and set to a black palmer. I had good sport, made up the dish of fish, so I put up my tackles, and was with my lord at his time appointed for the service. These *three flies*, with the help of the lob-worms, serve to angle all the year for the night, observing the times as I have showed you in this *night's work;* the white fly for darkness, the red fly in *medio*, and the black fly for lightness. This is the true experience for angling in the night, which is the surest angling of all, and killeth the greatest *trouts*. Your lines may be strong, but must not be *longer* than your rod."

3512. *The edible qualities of the trout*, now so much esteemed among us, were apparently but lightly esteemed by the ancients. Ausonius appears to be the only author among them who even mentions the fish: and he notices it only on account of its beauty, being altogether silent on its merits as a food,

"Purpureisque salar stellatus tergora guttis."
"With crimson spots the salar's back is starr'd."

It is, however, not a little singular, that so delicate a species of fish should be neglected at a time when the folly of the table was at its height, and as Mr. Pennant observes, that the epicures should overlook a fish that is found in such numbers in the lakes of their neighbourhood, when they ransacked the universe for dainties. The milts of the *Muræna* were brought from one place, the livers of *Scari* from another, and oysters even from so remote a spot as our Sandwich; but there always was, and always will be, a fashion in the article of good living. The Romans seem to have despised the trout, the piper, and the doree; and we believe Mr. Quin himself would have resigned the rich paps of a pregnant sow, the heels of camels, and the tongues of *flamingoes*, though dressed by Heliogabalus's cooks, for a good jowl of salmon with lobster sauce. It is scarcity which gives an artificial value to the matters we feed on, as well as to many other of our enjoyments; and these caprices are the natural results of riches and luxury, cloaked often under the name of refinement. The difficulty of procuring any variety of fish with us, as with the Germans, begets a fancied preference for it: thus whitebait, so highly prized because not common, may be well imitated by minnows; and in the opinion of many, they may be even beaten by small smelts. In countries where herrings are scarce, they form a dish at the table of *nobility*, and here they sell for a halfpenny each to the *mobility*. Still, as regards them however, the savoury morsel will make its way in spite of cheapness and vulgarity; and we find the herring creep, but unowned, to the tables of the great. Nay, if we are rightly informed, royalty itself has not disdained to regale itself on *sprats;* and this richly tasted diminutive type of the herring has been more justly prized ever since. The capricious epicures of the days of Horace valued their mullet in proportion to its size; not because it was thought to be better than the smaller fish of the same kind, but simply because very large mullet were extremely difficult to procure. The price given for one which Juvenal notices is a striking instance of this folly, as well as of the extravagance of that age in general.

> "The lavish slave
> Six thousand pieces for a mullet gave,
> A sesterce for each pound." *Dryden.*

To mark the deteriorating effect of plenty: — "In July 1804, an immense number of this delicious fish was caught at the mouth of the river Ex, when the draught was so great that they were sold for sixpence per dozen; and, what is remarkable, for several years not a fish of this species had been seen on the coast."

3513. *Early habits and local associations* have also much influence in fixing our tastes: it is not therefore to be wondered at, that when George the First came to the English throne, his long residence in Hanover had given him some peculiarities of this kind. Among other early gastronomic attachments, his majesty was very fond of oysters, and had patronised the consumption of them very freely, by his own example, when in Hanover. The distance from their native beds, however, prevented them from being so fresh as with us (the method of keeping them alive in salt and water being then unknown): but their *haut gout* had become familiar to the Hanoverians, and was even identified with them as a part of their excellence. On his majesty's arrival in England, of course his favourite luxury was not forgotten, and *native oysters* graced his board, selected, as might be expected, from the choicest and latest arrivals. Day after day did the good king swallow this grateful *bivalve;* but day after day did he complain that English oysters were by no means so good as those he used to eat in Hanover. They were changed and rechanged, but to no better purpose: at length some one suggested the truth, and such a dish was placed before him as would have set the company at Wright's in an uproar; when his majesty, on the contrary, recognising the old flavour, both by taste and smell, affirmed that they were the veri*table*, and stale oysters were in future procured for the English monarch.

3514. *The culinary treatment of the trout*, and of the salmon also (for both are conducted on the same principles), is necessarily an important subject, seeing they have become prominent among our greatest delicacies. Important, however, as the trout ranked before, the recipes of Halieus and Colonel Hawker have now given it additional weight, and when such characters as these gird on the cook's toga, Dr. Kitchener may well tremble. Happily for ourselves these great authorities agree so perfectly in the principles of the process throughout, and their sentiments are so strictly in unison with our own on the subject, that we have only the part of an annotator to perform, and shall more easily spin our yarn by a commentary on their text, than by any thing of our own. Had we, like the far-famed critic in the *Quarterly*, to boast of having partaken, *fronde super viridi* of a salmon dressed after the recipe of Halieus, near the ruins of Tillmouth Chapel, or of having *discussed a trout* in the well-appointed sporting *salle à manger* of the gallant colonel, we might have been more fitted to detail the minutiæ of the excellence of each plan. We will, however, attempt the rationale of them, which will be perhaps more to the purpose.

3515. *To give directions for the dressing a trout, secundum artem*, the matter should be taken up from the moment the fish is drawn from the water; and here we may first remark, that to such a degree of refinement has our taste arrived, that some of our disciples after Epicurus affirm, that their gustatory organs are sufficiently acute to distinguish such fish as have softened their flesh, and expended their juices, by a protracted struggling on the hook, from such as have been taken leaping alive from the net: and need we doubt it, when Juvenal informs us, that the nicely discriminating *gusto* of the oyster epicure in his day was such, that he could at once discover by the taste, whether they came from the Circean rocks, the Bay of Lucrenum in Campania, or from Richborough (*Rutupæ*) in Kent, in England. These most sensitive tasters should at least have their fish dressed by Parisian cooks, who, it is said, regularly take medicine to preserve an exquisite sensibility of taste in the composition of their sauces. Be not dismayed however, brother anglers, for with the help of the piscatory worthies we have brought before you, we will yet cook your trout, so that henceforth no one shall put you out of conceit with angled fish, although they had been played as long even as a gentleman is said to have played a salmon in the Shannon, from the morning even until the evening.

3516. *The moment a trout is landed it should be immediately killed*, either by a sharp blow on the head, or otherwise by forcing it backward until the vertebræ or neck bones are heard to crack: on such a minutia it would seem that no more was wanting; but, being old in the practice, we will hint to the tyro that there are advantages and disadvantages attending each of these methods. Unless the blow at the back of the head be sufficient to crush in the brain, the mere jar will leave such a portion of *nervous* life, as will injure the muscular contraction: but as this is the neater mode of destroying the fish, and will preserve it for a present in better appearance, it will find advocates, and it is therefore well to hint that it may be conveniently done by a smart stroke across the sharp edge of the sole of the strong fishing shoes or boots of the angler. When the head is forced back, it ruptures the junction of the gill-flap with the throat, and certainly injures the appearance of the fish, but it destroys the nervous vitality so perfectly and so instantaneously, that the muscles are felt to become rigid in the hand, and no such quivering remains, as often follows the other method. It also bleeds the animal more effectually, which brings us to the next requisite process, which is that of making a few sections, or cuts, across the gills; and this, if the fish be large, should never be omitted, as by abstracting the blood from the body, it may be kept sweet much longer. This done, proceed to crimp the fish by making deep transverse sections through the skin and flesh down to the bone on each side, at about two inches distance from each other. Colonel Hawker seems to dissent from strictly vertical sections, and directs that the "blade of the knife be carried in a sloping direction, so as to make every incision rather circular and parallel, as we suppose he means, with the flexure of the gills, instead of having the blade of the knife perpendicular, by which you would cut too much across the flakes, and the fish would not be near so firm." As, however, the flakes the colonel speaks of are the fascicular masses of the great lateral muscles, which act in concert from the head to the tail, so therefore the cutting directly *across their fibres* must increase the muscular retractility, requisite to produce the crimping effect; and if any real benefit be derived from making the sections segmentally in the line of the flexure of the gills, it must arise from the very division of the fibres composing these masses, directly contrary to the line of their action, by which a still greater corrugation may take place than would occur were it made in the true course of the fleshy lines. Crimping is not usually performed on small trout: but all sizes, without exception, should be destroyed the moment they are taken out of the water, unless preserved in a well-boat, drum-net, or kettle. When we mention all sizes, we wish it to be understood that it should be done wherever it is determined to kill all that are taken, but at the same time we would wish the angler to bear in mind, that it is much more sportsmanlike to return to the water all trout under a pound weight, certainly those under half-a-pound should always be so returned. By at once destroying life in the fish to be used, humanity is studied; and it tends to keep them better, and to make them firmer when dressed. The fish being crimped and bled, nothing remains but to keep it as cool as possible until it is cooked, for which purpose Colonel Hawker directs, if a pump be at hand, to allow a full stream of water to fall on it for ten minutes, or otherwise to lay it in cold spring water. We need hardly caution the angler not to substitute river or pond water which is less cool: but if spring water were not at hand, he might then make use of any other water after a method common in India, of putting around their wine a well wetted cloth, which being hung up in the sun and wind, an immense degree of cold is generated by the quick evaporation which the heat and air excite. When the fish have arrived at home, lay them on cold stones until wanted. "A trout," the colonel judiciously observes, "if possible, should always be dressed the day it is caught; and never put to soak and soften over the fire, in cold water, as is the general custom. Remember, also, that if trout are suffered to remain in water after being sufficiently boiled, they will directly become soft, and lose all the firmness which is given by this mode of dressing them."

3517. *Cold and crimping* are the grand agents in preserving both the firmness and flavour of all fish which come to us at once out of the water. In the anatomy and physiology of fishes (p. 937.), it will be observed that we have described the interstitial matter between the muscular fibres and masses (the quantity of which when fish are in condition is large), as being composed of gelatine, albumen, and animal oil, which in union form a semi-oleaginous substance called the curd, but which unfortunately soon becomes tainted. Cold, by its coagulating properties, it is evident, must tend to retard the decomposition of this curdy matter between the fleshy fibres; and it thereby gains an excellence of taste unknown in a fish long kept, or even kept at all without care. Crimping is greatly efficacious also in preventing early decomposition; and it is to that we are indebted for what we term the *firmness* of fish, in opposition to what is understood by woolliness, a quality we have so often to complain of in unseasonable cod and other fish. It is therefore to these united causes that the firmness, almost amounting to crispness, of our salmon and trout, when judiciously crimped and cooled, must be attributed.

3518. *Proceed we to the process of boiling.* By the above digression, we have given full time for the assistants to have got every thing in readiness; and we hear the colonel inquiring for the trout, desiring that if the dinner be nearly ready it may be cleaned, leaving however the scales on, and having it pumped on for a few minutes more. Then have a kettle of water, with a large handful of salt, and when the water properly boils (*but not before*) put the fish in; and an average sized trout (say one of a pound weight) will be done in about ten minutes, and should then be sent immediately to table. This process is truly *secundum artem*, the salt being an important ingredient; for, as Sir Humphry Davy observes, *salt boiling water*, being of a higher temperature than that of common boiling water, the curd becomes more perfectly hardened by the increase of the heat. The inquisitive reader we would refer to the culinary treatment of salmon, where he will find a recommendation to eat fresh trout with a little vinegar and mustard only.

Sect. XVII. *The Grayling* (*Salmo thymallus* Linn.).

3519. *Gray salmon*, with longitudinal dusky blue lines, and violet coloured dorsal fin, barred with brown; length from ten to eighteen inches; head obtuse, the upper jaw longest; D. 18.; P. 12.; V. 11.; C. 19. (*Fleming.*) It has thus been described: — "It haunts rapid and clear streams, and particularly such as flow through mountainous countries: it is found in those of Derbyshire, Shropshire, Yorkshire, &c.: in Lapland, where it is very common, the inhabitants use its entrails, instead of rennet, to make the cheese which they get from the milk of the reindeer. It is a fish of very elegant form (*fig.* 532.); the body less deep than that of the trout; the head small, with protuberant eyes, whose irides are silvery, speckled with yellow; the mouth is of a middle size, and the upper jaw the largest; the teeth are very minute, seated in the jaws and roof of the mouth, and they feel like a fine file; the head is dusky; the covers of the gills are of a glossy green, yet, when in prime perfection, these parts are blackish (differing in this respect from all other fish, being least beautiful when most in season); the back is of a dusky green, inclining to blue; the sides of a fine silvery gray (from which it derives the name), yet when first taken they seem to glitter with spangles of gold, and are marked with black spots irregularly placed; the side line is nearly straight; the scales are large, and the lower edges dusky, forming straight rows from the head to the tail, which is much forked; the large dorsal fin is spotted, the other fins are plain: it is rather hog-backed, and, from the nose and belly touching the ground together, it is conjectured that this fish feeds mostly at the bottom. In length, the grayling seldom exceeds sixteen inches." Mr. Pennant mentions one taken near Ludlow, above half a yard long, and weighing four pounds six ounces, as a rare instance. One was caught near Shrewsbury that weighed full five pounds. The above rather inelegant description is still a very faithful one. Thymallus is a name bestowed upon the grayling on account of an imaginary scent proceeding from it similar to that of thyme. The name of *umbra*, which this fish also bears, has a far better derivation, for it is so swift a swimmer as to disappear like the passing shadow. Grayling are in great esteem, and their flesh is white and palatable all the year: they are in season from September to March (some say they are best in October, others in December), and they cannot be dressed too soon after they are caught. They lurk close all the winter, and begin to be very active in spring, and to spawn in April, or early in May; during which time, and in summer, near the sides, and at the tails of sharp streams, they take most of the flies trout are fond of: they rise bolder than the trout, and if missed several times, will rise again; yet, although they are so sportive after the fly, they are not courageous when hooked; and the sides of the mouth are so very tender, that unless gently played, when struck, the hold will frequently be broken. In September they retire in shoals to deep places.

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GRAYLING.

3520. *The account of the grayling*, given by the venerable Walton, contains much truth and much fable; but the whole is dressed in so admirable a garb of simplicity, that we cannot refrain from offering it as one of the many didactic specimens of this our excellent writer of by-gone days: — "The umber and grayling are thought by some to differ, as the herring and pilcher do. But though they may do so in other nations, I think those in England differ nothing but in their names. Aldrovandus says, they be of a trout kind: and Gesner says, that in his country, which is Switzerland, the grayling is accounted the choicest of all fish; and in Italy, he is in the month of May so highly valued, that he is sold then at a much higher rate than any other fish. The French also value the umber or grayling so highly, that they say he feeds on gold, and that many have been caught out of their famous river of Loire, out of whose bellys grains of gold have been often taken. And some think that he feeds on water-thyme, and smells of it at his first taking out of water; and they may think so with as good reason as we do, that our smelts smell like violets at their being first caught, which I think is a truth. Aldrovandus says, the salmon, the grayling, and trout, and all fish that live in clear and sharp streams, are made by their mother Nature of such exact shape and pleasant colours, purposely to invite us to a joy and contentedness in feasting with her. Whether this is a truth or not, is not my purpose to dispute;

but 'tis certain, all that write of the umber declare him to be very medicinable. And Gesner says, that the fat of an umber or grayling being set, with a little honey, a day or two in the sun in a little glass, is very excellent against redness, or swarthiness, or any thing that breeds in the eyes. Salvian takes him to be called umber from his swift swimming or gliding out of sight, more like a shadow or a ghost than a fish. Much more might be said both of its smell and taste, but I shall only tell you that St. Ambrose, the glorious Bishop of Milan, who lived when the church kept fasting days, calls him the flower-fish, or flower of fishes." Such are the fanciful opinions held of the grayling. As to critical distinctive marks in the grayling, authors differ; thus, while Captain Williamson reckons sixteen rays to the pectoral, Sir H. Davy, if we mistake not, reckons ten only. Internally, the conformation of the grayling is very much the same as that of the trout; the stomach, which is muscular and strong, appears of a class between that of the common and the gillaroo trout, being admirably adapted to the nature of its food, which consists principally of the lesser *Crustaceæ* and such larvæ inhabiting hard outer cases, as require a powerful organisation to overcome the resistance offered. The remaining viscera bear the characteristics of the trout. When a grayling's dimensions and its weight are compared, and when the same is done by the trout, it will be found on a comparison that they are more nearly equal than would on a hasty inspection be supposed, the superior thickness of the former being compensated in the more regular distribution of bulk from the head to the tail in the trout, whereas the grayling tapers sharply towards the tail, where it is much smaller than the trout.

3521. *The spawning season of the grayling* is said by Sir Humphry Davy to be about the beginning of April, but most other authors affirm it to be May. As far as our experience goes, we consider that towards the latter end of April the greatest average number of graylings will have spawned; but we have taken them in different rivers both earlier and later in full roe. We think that in the Tyne and the Hampshire rivers they spawn earlier than in some other waters: we certainly, on the 12th of May, caught more than one in the upper part of the Trent with a full roe. Though the grayling is less affected by spawning than others of the genus *Salmo*, still it takes longer time to regain its perfect condition, and is seldom to be so considered before November or December. In the Dee we have been told, that they regain it more quickly than in most rivers, and much certainly depends on the nature of the water in this respect. Sir Humphry Davy, to whom the angler is indebted for some amusing observations on the grayling, says, erroneously, that the young which are hatched in May or June become in September or October of the same year nine or ten inches long, and that they weigh from five ounces to half a pound, and next year they arrive at from twelve to fifteen inches in length. But in reality they require double the time to attain that size.

3522. *Grayling are esteemed by some naturalists to be fish of passage*, visiting the sea on the first appearance of frost. Dr. Fleming favours this mistaken opinion, and Captain Williamson also. He says, "From this fish disappearing when the frosts set in, that is, the generality of them, I am disposed to believe that they visit the sea during the coldest months; at least that they go to the mouths of rivers, and recruit by means of the brackish waters. Of this I am the more convinced, because with the exception of the Humber and Trent, which run into the German Ocean, I believe all the rivers containing graylings lie in the west of England, and in Wales: besides, they are never found but where salmon abound." The grayling is found as far north as Lapland, at least it is so stated by Linnæus, but this is questioned by Sir Humphry Davy, who is of opinion that, like Bach's grayling found by Captain Franklin in North America, and distinguished by a much larger back fin, this also is a different species. This philosophic angler informs us, that he has travelled through most of the Alpine valleys in the south and east of Europe, and through some in Norway and Sweden, frequently with his fishing-rod in his hand; but that wherever he went he met with the grayling on no occasion in streams running from glaciers, at least near their source, but only in situations at the foot of mountains, where the temperature approximated to that of the atmosphere, which he thinks indispensable to the existence of this fish: in proof of it, he informs us that on putting some grayling and trout of the Teme into a confined water near its rising from a spring, the grayling all died, but the trout lived. That grayling are much influenced by extremes of temperature is evinced by many facts: if they do not retire further, they certainly on the approach of winter seek the deeper parts of rivers to avoid the cold: and if they actually do seek the salt water of the sea, or the brackish waters of the estuaries, as stated by naturalists, it is without doubt that they may shelter themselves under the increase of heat which is there found. Sir Humphry Davy with truth asserts, that even a slight brackishness in the water into which they are put is sufficient to destroy them. Great heat, however, appears equally inimical to them; and we may consider that the true *Salmo thymallus* is not found but in temperate climates; and even our own summers, when more than usually hot, have been known to destroy them, as was observed to be the case with many in 1825, particularly in the Avon, the Dove, and the Trent.

3523. *Grayling also require other peculiarities of location* besides those of temperature, such as a general character of the water they inhabit, and certain circumstances in the nature of its composition derived from its sources, or from the ground over which it flows. With one or two exceptions, they are only found in rivers which belong to the southern and western parts of our island. It is probably owing to the abstraction of some of these requisites, that the multiplication of these fish in several rivers where they have been attempted to be naturalised has not been attended with success: in some they soon disappeared; in others they remained, but never thrived; while in some waters, although they lived and at first increased, yet they were afterwards observed to shift their quarters to different parts of the same river, in most of which cases it proved, as in that which occurred in the Test, that they migrated from above downwards, probably in search of deep and tranquil waters; for the angler cannot fail to observe that grayling do not, like trout, affect very rapid shallows and the boldest torrents; on the contrary, they seem to thrive best where milder currents alternate with deep and extensive pools: neither do they do well where strong gravel or pure rock characterise the bottoms; for it appears necessary to them that the ground over which they swim should be compounded of sand, gravel, and loam; which mixture is, as we know, very favourable to the production of the insect food on which they principally subsist. These views will readily help us to account for their being so common in some rivers and so rare in others, and may perhaps also teach us why they have not been found in either Scotland or Ireland. They were transplanted some years ago from the Avon to the Test, in Hampshire, being first introduced at Longstock, in the neighbourhood of Stockbridge; where, for a while, they were plentiful, multiplied fast, and arrived at a great size; yet, in spite of these circumstances, the situation did not seem exactly to suit them, for, after a few seasons, they were lost to that part of the river, and gradually descended lower and lower, and are now only to be found below Houghton.

3524. *The rivers in which we have found grayling* are, the Avon, Test, Dove, Derwent, Lug, Wye, Severn, Teme, Trent, Irvon, Hodder, the Dee, the Bath Wharf, Humber, and some of their tributary streams. In Ireland and Scotland they are not, to our knowledge, met with. This partial distribution, seeing that they are abundant in many continental districts, has led to a supposition that the grayling was an exotic, and brought into England (when it was Catholic) to vary the fasts and abstinence-days of those times; and the circumstance that some of its most notorious resorts are where religious establishments of note are known to have been founded, seems to strengthen the opinion. This has been observed on by Poietes in *Salmonia*, who in proof of this instances the Avon near Salisbury, the Ure near Fountain's Abbey, the Wye near Tintern, &c. &c. This opinion is, however, rebutted by Halieus, who brings forward the Stour near Canterbury, where the grayling is not found; and remarks, likewise, that if the grayling be an imported fish, and its importation was intended for religious purposes, it is strange that we do not find it diffused through *all* the rivers of the south-west coast of England, where monastic establishments were numerous. We believe the grayling never migrates to the sea.

Subsect. 1. *Bottom Fishing for Grayling.*

3525. *Angling for grayling* forms a favourite sport with the inhabitants of the vicinities where this fish is found. The London angler, unless he travels, is unfortunately denied its enjoyment, Hampshire being the nearest county where it is to be met with, and the waters it there sports in being in general strictly preserved, the matter is but little mended; leave to fish is however to be obtained by a favourable introduction. The food of the grayling is principally insects, and insect baits are therefore usually employed in its capture. The winged ones are presented upon the water either in a natural or artificial state, and these we shall treat of hereafter. The larvæ or grubs of these are taken under the water; and it is they which form the usual baits of the bottom angler for these fish. Although the grayling is principally insectivorous, yet it has been known to take a live minnow and other small fish, but the occurrence is rare: however, that it is not wholly insectivorous is proved by its voracity in seeking for the spawn of the trout and other fish.

3526. *The season for grayling fishing* is mentioned by most writers as though it were confined to the months of September, October, and November; but these accounts are somewhat erroneous. We have often taken these fish at every period of the year, except between the last fortnight of December and the early part of March. We mean not to deny, speaking generally of trout and grayling as objects of the angler's sport, that the former is to be considered as a spring and summer fish, and the latter as being most to be depended on for autumn and winter amusement: but we mean to say, that, with the exception of about ten weeks, grayling take a bait all the year round; and we would observe, likewise, that this fish is so much less affected in its condition by spawning, than most others, that it is seldom too much out of season not to be worth the angler's attention.

3527. *In the early periods of spring* they may be brought out of their holds by offering them red worms on very fine tackle, with or without a float. We ourselves in most cases prefer fishing without one, if the water be clear; but if it be tinged, by all means use a float. Our practice has been, when without a float, to fish in such deeps as are found in some parts of the Dove, Wye, and Trent, with our bait at one-third from the bottom; but when in moderately deep water, within a foot from the ground. The whole tackle, as the line, shotting, and hook, can hardly be too fine in grayling fishing generally; but when the depth is not great and the water bright, use a hook from No. 7. to 9., according to the usual size of the fish. One well scoured worm is better than two, unless bloodworms are the bait, in which case make use of a No. 8 or 9. hook, with three of the worms neatly put on it at once. The caddis is one of their favourite articles of food; and earlier than July, it is seldom that we have taken one without finding the cadew-worm, case and all, within its stomach. The caddis altogether forms one of the most excellent baits, and, as a matter of experiment, we have tried and hooked several with the worm in its case, instead of naked. Other larvæ and pupæ, as caterpillars, the cabbage grub, earth bobs of all sorts, wasp and bee grubs, &c. &c. may be likewise used successfully: we have occasionally hooked them with the *Paludinæ*, or water snails; and in fact with most aquatic *Crustaceæ*.

3528. *Gentles form a very general bait for grayling*, and are used from the spring until winter, but principally so towards the autumn, when the grayling begins to leave sporting on the surface, and takes a bait better at mid-water than above: we have found gentles a favourite autumn bait in most of the grayling rivers that we have visited: towards the close of the summer, they are in some rivers used with great success, by putting on one at a time at the point of the hook, on which any of the grayling flies, particularly the duns, ants, and house-flies are dressed. Employed in this way, grayling will take the gentle either in the water, or a few inches, and sometimes even a foot or more, beneath the surface. In the use of gentles as a bait, it is good practice to occasionally throw in a few loose ones around you, but unmixed with sand or gravel if the water be still; if it be on the move, then throw them above the stream. Ant-eggs and wasp-grubs are good in their turn.

3529. *Salmon's roe* is a killing bait for grayling, and may be used throughout the summer and towards the autumn with great success in the manner directed under that head (p. 1027.); observing, when the water is deep and uncoloured, to sink the bait deep; when it is a little tinged, it is good practice to remove the float and to rove with the roe in a light and delicate manner, taking care, in both cases, to sink it as unperceived as possible, and to remove it slowly, to save the paste and to avoid losing a fish.

3530. *Sinking and drawing*, as well as *dipping and roving*, will be found excellent methods of taking grayling. Almost all the *Coleoptera*, or beetle tribe, are greedily taken by them when used in the manner directed for chub; but although the grayling also requires some caution in treating it, it is, on the whole, a bolder fish than the chub, particularly in its dartings from a pool after insect bait; yet it is curious, that in worm and gentle fishing, too fine tackle, or too much attention to quietness and obscurity, cannot be observed. The grasshopper is a very favourite bait with it, exhibited either by dipping and roving, or sinking and drawing. By the latter method, the grayling of the Hampshire rivers are very frequently angled for with these insects threaded on a hook, either in the usual manner, or otherwise by means of a hook leaded for the purpose (*fig.* 503. p. 1004.), which mode of baiting is peculiarly appropriate to sinking and drawing, and proves a very killing practice. Before the grasshopper is put on the hook, cover the lead and shank with light green or green and yellow silk mixed, and then thread the grasshopper over the bend. In the Wye, Dove, and Trent, we have ourselves employed this mode, and by it have taken the largest fish, particularly in the deep still pools of the Dove.

3531. *The grayling* bites boldly and sharply, and as its mouth affords little hold, a smart but not violent stroke is most likely to retain it. If the bait be very tempting to it, or it is well on the feed, it is often regardless of a scratched mouth, which is still more observable in fly-fishing: we have pricked them, particularly the smaller ones, more than twice, as their mouths have shown after they have been taken.

3532. *Grayling as a table fish* is considered an epicurean treat: the flesh is white and neither unpalatable nor unwholesome at any time of the year; but it is in its greatest perfection from October to February. The preparatory treatment before cooking differs in nowise from that of the trout. Angling for grayling at bottom is well taught in *The Rod and the Line*, published by the Messrs. Longman in 1849–50.

SUBSECT. 2. *The Gwiniad* (*Salmo lavaretus* Pennant).

3533. *Bluish salmon* with broad scales, and nose-like snout. (*Shaw's Linnæus.*) Length about a foot; mouth resembling that of a herring; jaws equal; gill-cover silvery, powdered with black; belly flat; D. 14.; P. 18. (the first the longest); V. 12. (of a deep blue colour); A. 15. (*Fleming.*) In most of our angling treatises, the gwiniad comes on the stage, but has only to make his bow and retire, for he has but little part to act before the angler. We present the following account of this fish from Mr. Pennant, who informs us that it is found in Ireland in Lough Neagh, where it is called *Pollan*; and in Loch Mabon in Scotland, where it is termed *Vendisse*. The Scotch have a tradition that it was first introduced by their beauteous queen, the unhappy Mary Stuart; and as in her time the Scotch court was much Frenchified, it seems likely that the name was derived from the French *vendoise*, a dace, to which a slight observer might compare it from the whiteness of its scales: the British name, *gwiniad*, or whiting, was bestowed upon it for

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the same reason. It is a native of the lakes in Cumberland; and of Wales, in Pemble Meer, or Llyntegid, near Bala in Merionethshire. In the lakes of the Alpine parts of Europe it is found, as in those of Switzerland (in that of Geneva it is named *ferra*), of Savoy, and Italy, of Norway, Sweden, and Lapland, where Schœffer asserts they are caught of the weight of ten or twelve pounds. "It is," says Pennant, "gregarious, and approaches the shores during spring and summer in such vast shoals, as to prove in many places, to the poor of inland counties, as great a relief as the return of the herring is to those who dwell upon the coast;" and he recites an instance of an *Ullswater* fisherman who took between seven and eight thousand at one draught. It is there called *Schelly*—a name which the inhabitants of Cumberland give also to the chub, from its being a scaly fish. It has long since been observed in Camden, that the gwiniad never wanders into the Dee, nor does the salmon ever venture into the Bala Lake; and, generally speaking, this is the case; but, by accident, the first has been known to stray as far as Landrillo, six miles down the river, and a salmon has now and then been found trespassing in the lake. The late Honorable Daines Barrington remarks upon this fish, that "it is universally supposed (and even by Lloyd, in his additions to *Camden's Britannia*), salmon are never caught in the Lake of Bala, although they are frequently taken in the river Dee, just below where it issues from the lake, whilst the contrary is observed with regard to the gwiniad, which is conceived to be a fish peculiar to the lake; but," says Mr. B., "I happened to see a salmon of about fifteen pounds caught in the lake, at least two hundred yards above the bridge through which the Dee issues; and although I never saw the gwiniad taken in that river, yet I was most authentically informed that several were caught, within three years, as low down as Landrillo, nearly six measured miles from the Lake of Bala: and with respect to the gwiniads being only in this lake, I can myself flatly contradict this notion, as the first parcel of fish which I happened to see in the market of Penrith, in Cumberland, were of this sort, and were brought from Ullswater, about four or five miles from thence." Of the angling for it we have nothing to say, as in our travels we never met with an angler who considered it worth his time to attempt to catch it.

Subsect. 3. *The Red Char, and the Gilt or Case Char.*

3534. *The red char* is the *Salmo salvelinus* of naturalists, as the gilt or case char is their *Salmo Alpinus*. On these fishes, if they be really distinct, we have only to remark, that there is yet much wanting to elucidate these two varieties, but which, as not attracting the practice of the angler, we shall not further attempt, than by giving Mr. Daniel's account. There are but few lakes in our island that produce the char, and even those in no great abundance: it is found in vast numbers in the cold lakes on the summits of the Lapland Alps. The char (*fig.* 534.) affects clear and pure water, and is very rarely known to wander into running streams, except into such whose bottom is similar to the neighbouring lake. It is found in Winander Mere, in Westmoreland; Ullswater, in Cumberland; in Llynn Quellyn near the foot of Snowdon; in certain lakes in Merionethshire; and, before the discovery of the copper mines, in those of Llanberis; but in the last, the fish have been nearly destroyed by the mineral streams. In Scotland it is found in Loch Tay, Loch Inch, and other neighbouring lakes; and in Fewin-Loch, Sutherlandshire. In Ireland the char is abundant in Lough Esk. Mr. Pennant describes the largest and most beautiful to have been sent to him from Winander Mere, consisting of five specimens,—two under the name of *case char* (male and female); a third was termed a *gilt char*, that is, a char which had not spawned the preceding season, and on which account it is reckoned to be in the greatest perfection; the two others were inscribed the *red char*, the *silver* or *gilt char*, which last are in Westmoreland distinguished by the *red*, from the flesh assuming a higher colour when dressed.

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3535. *The case char* is said by those who advocate its individuality to spawn about Michaelmas, and chiefly in the river Brathy, which, uniting with another called the Rowthay, about a quarter of a mile above the lake, they both fall into it together. The Brathy has a black rocky bottom; that of the Rowthay is a bright sand; and into this the char are never observed to enter. Some of them spawn in the lake, but always in such parts of it as are stony, and resemble the channel of the Brathy: they are supposed to be in the highest excellence about May, and continue in perfection all the summer, yet are rarely caught after April. When they are spawning in the river they will take a bait, but at no other time, being commonly taken, as well as the other species, in what they call *breast-nets*, which are about twenty-four fathoms long, and about five where broadest. The gilt char on the contrary, we are told, is in spawn from the beginning of January to the end of March. They are never known to ascend the rivers, but always spawn in those parts of the lake which are springy, where the bottom is smooth and sandy, and the water warmest. How much obscurity hangs around these varieties of salmon may become apparent from the following statement: — "They are taken in the greatest plenty from the last week of September to the end of November; at other times they are hardly to be met with: this species is in much greater estimation for the table than the other, and is very delicate when potted. Numbers thus prepared are sent to London, but are not all genuine; for there is a sort of trout caught in the Petterell (a small rapid river that runs near Carlisle, in the county of Cumberland), which is similar to the char in size, as fine in colour, and when potted not to be distinguished from it. These trout take the May-fly of both sorts, and all the other flies in season; and certainly assume the name, and rival the flavour of the char, amongst the epicures of the metropolis. The char, when fresh, has all the sweetness of the trout, with something of the taste of the red mullet. It must be observed, that this detail of the spawning season of the Westmoreland chars agrees nearly with that of the same fish in Wales; the last appear about a month later, keep moving from side to side of the pool, and then retire into deep water, where they are but rarely taken. Some have doubted whether the Welsh and English fish are of the same kind. Mr. Ray thinks there is no ground for doubt; the Welsh name *torgoch* signifies a red belly, which distinguishes the red char properly enough. In Wales, it is a prime dish at fashionable tables."

Subsect. 4. *The Salmon* (*Salmo salar*).

3536. *Silvery grey spotted salmon*, with the jaws (in the male) incurvated. (*Shaw.*) *S. rostro ultra inferiorem maxillam prominente.* (*Linn. Syst. Nat.* p. 509.) *S. Salar* — upper jaw longest, teeth on the vomer, and fin with about thirteen rays. Spec. char.: D. 14.; P. 14.; V. 10.; A. 13.; C. 21. (*Fleming.*)

3537. *The salmon* may be seen accurately figured in p. 956.; nor is it possible to deny our admiration of his size and general character. To the lover of good eating he is always welcome, and our very best anglers seek his acquaintance with much art, and many winning devices. It is therefore not to be wondered at that he is called the king of river fish; and whether we consider his beauty, his prowess, or his valuable economic qualities, he deserves the title. With the angler he has a very high reputation, and where opportunities occur of pursuing him (which in the south are not frequent) the sport has always been considered of the first character. The general length of the salmon is from two and a half to three feet, but sometimes much more: the male is principally distinguished by the curvature of the jaws, both the upper and lower mandible bending towards each other more or less in different individuals, and at different seasons. The general colour of both sexes is a silvery grey, of a much darker cast on the back: the sides of the male are marked with numerous small, irregular, dusky, and copper coloured spots; while those of the female exhibit only several rather large, distant, roundish, or somewhat lunated spots of a dark colour. Exclusive of these differences, the male is of a somewhat longer or more slender shape than the female: the scales in the salmon are middle sized, and not very strongly adherent.

3538. *The salmon* was known to the Romans, but not to the Greeks. Pliny speaks of it as being in the rivers of Aquitaine: Ausonius enumerates it among those of the Moselle. The salmon is a northern fish, being unknown in the Mediterranean Sea, and other warm climates: it is found in some of the rivers of France, which empty themselves into the ocean: it is found also as far north as Greenland; and is likewise very common in Newfoundland, and the northern parts of North America. Salmon are taken in the rivers of Kamtschatka, and recently have been caught with the fly in some of the rivers of Spain.

3539. *We are indebted for the annual visitations* of this valuable emigrant to the powerful workings of the reproductive system, and it is in order to find a safe and eligible situation for depositing their spawn that salmon travel hundreds of miles up rivers, and brave difficulties and dangers innumerable, "forcing themselves," according to the accounts of Mr. Pennant, "against the most rapid currents, and springing with agility almost incredible over cataracts several feet in height." Salmon are frequently taken in the Rhine as high up as Basle: they gain the sources of the Lapland rivers in spite of their torrents, and pass over the perpendicular falls of Leixlip and Ballyshannon in Ireland, and of Kennerth and Pont-aberglaslyn in Wales. "Of these feats," says Mr. Pennant, "I have been witness, and seen the efforts of many scores during the time of my stay; some successful, and others driven down by the current for a more fortunate exertion: the fish seemed to spring up quite straight, and with a strong tremulous motion, completely refuting the vulgar error of taking their *tails in their mouths* when they make their spring." Our limits force us to principally treat on this noble fish as a local inhabitant, and the great archetype of a numerous and important family, and likewise as a very principal object of the angler's pursuit. His size is sometimes considerable; the largest we have heard of weighed seventy-six pounds. Mr. Pennant mentions one of seventy-four pounds also, and it may be observed that the general figure of the body of this fish is well adapted to conceal a very great weight under an apparently moderate bulk; thus one, which was thirty-eight and a half inches in length, and twenty-one in girth, weighed twenty-two pounds and a quarter. The tail is slightly forked, which serves at once to distinguish it from the sea trout, as well by its greater breadth as by its being less spotted; the head of the salmon is likewise proportionally smaller than that of the sea trout. Its usual colour is purplish black towards the back, softening into grey, and becoming white towards the belly; and when these colours are clear and determinate, the fish may be esteemed in season; but on the contrary, when it is reddish, or approaching to a light brown, it is out of season. It must however be observed, that the colours vary very much in different specimens, and in the fish of different waters; some have very few spots; in others the spots are numerous, and extend even to the gill-covers.

3540. *The male and female salmon* are distinguished from each other by stronger marks than are observed between most fish, as may be seen in the excellent description of Shaw; to which it may be added, that the lateral line in the male is placed rather lower than that of the female. The grand sexual character is, however, obtained from the incurvation of the jaws, principally about spawning time, and afterwards when the fish is out of condition, and called a "kelt." Touching the excrescence in the lower jaw of the salmon very great errors have prevailed, many considering it is used by the fish in excavating the spawning bed Neither its position inside the jaw, nor its consistency, which is not bony, but a soft cartilage, can be of any use in excavating sand and gravel. It may, however, be of use, but this is mere conjecture, in enabling the fish to keep its jaws more firmly closed whilst it works with its snout and head in forming the spawning-bed But then the female salmon, which assists in digging the bed, has not this excrescence. It is also larger after the fish have spawned than before. As the fish drop down to the sea after spawning, it gradually diminishes and entirely disappears after the fish have been a few weeks on their sea feeding grounds. The generality o *Salmonidæ*, whether migratory or not, have not this excrescence; and as they dig their beds after the manne of the salmon, it is quite clear that it is not necessary for the process of excavation. The female salmon which has neither marked elongation of the under jaw, nor the excrescence alluded to, frequently dig the spawning bed without any material assistance, as, for instance, when unable to find a male salmon to im pregnate her ova, she is obliged to have recourse to a very small grilse, or even to one or more diminutive male common trout. Mr. Andrew Young, of Sutherlandshire, the best authority on the history and habits of salmon, pronounces the excrescence in question useless.

3541. *A curious circumstance* in the natural history of the salmon is, that such as are taken in our rivers are seldom observed to have any thing within their stomachs; from whence some have formed an opinion that they seldom or never eat, but that whatever they do take in, is in mere play or wantonness. To combat such an opinion seriously, would be to fight a Quixotic battle, and get laughed at in our triumph. If salmon eat for wantonness, what becomes of the matters taken in? They must be digested or regurgitated, or death would ensue; and we suppose there are few weak enough to think that a complex digestive system was give them merely to play with. At sea they are, however, taken with small fish and sand eels within them, and these are known to be favourite food with them. Their occasional voracity in taking worms, and their partiality for living minnows, gudgeons, and other live fish, is notorious, and forms the ground of the angler's practice under water, as that of fly-fishing above proves not only that they are predaceous in the extreme, but that they also, like the other members of the family, seek a variety of food in winged insects. The circumstance of their being, like herrings, seldom found with any thing within their stomachs but mucus, may arise from a capacity of very quick digestion, and a peculiarity in their mode of taking in food, in small quantities at a time, but repeating it frequently, by which the stomach may be in a constant state of capacity or fitness for immediate and quick digestion. This singularity can hardly arise from the cause assigned to it by Sir Humphry Davy, that salmon, at the time of their migration from the sea upwards, may be unwilling to load themselves with food: but allowing this any force, it would apply only to such as are taken from a pool, in which they have been observed to have stationed themselves for many days, and in which they have been caught by means of a fish-bait, which they must have chased for food. Food, very often the flesh of the sea-trout, is found in a macerated state in the stomachs of salmon caught in the nets in the tidal ways of rivers. Herrings have been taken from their mouths, before they had time to swallow them. The truth is, salmon whilst at sea feed voraciously and digest with miraculous promptitude. Hence their wonderful growth.

3542. *The very different states in which the salmon appears* when it leaves the sea and when it returns to it, have always been a subject of observation. When it enters the mouths of the rivers, it presents a magnificent specimen of health and beauty; nothing now deforms the newly arrived guest, save a few of the *Monoculus Piscinus* (not the *Lernea Salmonea* as stated by Mr. Pennant). Some persons however are short-sighted enough to suppose, that to escape from these the salmon is principally prompted to leave the sea. But much more cogent reasons prevail; for at this time the evolution of the milt and spawn is not very considerable, and it is now that both male and female, particularly the former, are in the highest state of edible perfection, and are then called clean fish by fishermen. As the process of milting and roeing advances, extreme pressure appears to injure the vital functions; the animal oil and all interstitial matter are absorbed, and the fish becomes thence lean in flesh, and what remains is in a great measure colourless and insipid when dressed; sometimes it proves unwholesome also. Salmon in this state are termed red fish, or kipper, and are avoided by all who understand them. The female, as might be expected, suffers most in the process, and therefore ought to be avoided even more carefully than the male. These unfavourable appearances arrive at their height a little previous to spawning: they also continue during the time of it, and remain until the fish again reaches the sea. On their passage downwards to the salt waters, salmon are found not only affected with teniæ internally, but with lerneæ externally; both of which parasites they get rid of by the renovating qualities of the salt waters. It is observed that the male fish retire to the sea earlier than the female, which is known by those that are taken on their passage downwards; also it is notorious that after the spawning season, the fish of either sex are termed kelts, or *foul fish.* It is the habit of salmon to migrate annually to the sea for the purpose of obtaining food necessary for their physical development; having obtained a sufficiency of which they return to their native rivers, in which their spawn matures, and in which it is deposited, impregnated, and incubated.

3543. *Salmon fry* are found all the year round in salmon rivers, because salmon breed more or less from September to March inclusive. They are properly called salmon fry as long as they retain their transverse bars, erroneously called parr-marks, which do not disappear until they are a year old. They then assume a silvery coating, and are called smolts. At this age their first migration to the sea takes place. They return the same year to their native rivers, and are then grilse. On their next or second return from the sea to spawn for the second time they are salmon. The size of grilse or salmon does not depend on age, but on capacity for growth, or the length of time they remain at sea, and on the quantity and quality of food they find there. A grilse may be larger than a salmon, as a Dorking fowl of six months' old may be larger than a bantam of six years. There are rivers in which salmon never attain the weight of ten pounds; others in which grilse are often of that weight, and salmon of the weight of fifty pounds. They are all however the same genus.

Subsect. 5. *Bottom Angling for Salmon.*

3544. *Angling for salmon*, in any shape, is a noble sport; and although the methods are not greatly diversified, they have all a masculine character about them that greatly attracts the enterprising fisherman. But it is remarkable how meagre are the instructions to this effect contained in our old reputed works on angling. Mr. Salter contents himself with telling us that salmon are "fished for at *bottom*, both in the Thames and Medway, with a strong leger-line, and a No. 1. hook tied on gimp, which is whipped over with silk, waxed with shoemaker's wax: the bait is a raw muscle, prawn, or cockle, taken clear from the shell. They will, however, sometimes take a small fish, such as is used when trolling with a live bait for pike, and also large well-scoured lob-worms, of which put two on at a time." To compensate his omissions, we beg to quote something relative to the subject, which appeared in an article in the *Quarterly Review*, attributed, we believe, with justice, to Sir Walter Scott.

3545. "*Salmon fishing* is to all other kinds of angling, as buck shooting to shooting of any meaner description. The salmon is, in this particular, the king of fish. It requires a dexterous hand and an acute eye to raise and strike him; and when this is achieved, the sport is only begun at the point where, even in trout angling, unless in case of an unusually lively and strong fish, it is at once commenced and ended. Indeed, the most sprightly trout that ever was hooked shows mere child's play in comparison to a fresh-run salmon. There is all the difference which exists between coursing the hare and hunting the fox. The pleasure and the suspense are of twenty times the duration — the address and strength required, infinitely greater — the prize, when attained, not only more honourable, but more valuable. The hazards of failure are also an hundred-fold multiplied; the instinct of the salmon leads to the most singular efforts to escape, which must be met and foiled by equal promptitude on the part of the angler." Bainbridge likewise, one of our best practical fly-fishing guides, disappoints us much, in hardly mentioning the manly method of minnow spinning for salmon, when the fly, from the state of the water, is inert; and he is equally unsatisfactory on the killing one of trolling and roving, when both minnow and fly-fishing are impracticable: nay, that great piscatory character, Halieus, who, as his friend and eulogist, Sir Walter Scott informs us, "is not only familiar with the most remote streams and lakes of North Britain but with those of Ireland, where the salmon fisheries flourish to a great extent, — nay, he has followed his sport through most countries in Europe, and killed fish, the description of which makes an Englishman's mouth water, in rivers, the names of which set his teeth on edge,"— even he disdains so much as to hint at these methods. For our own parts, although we cannot boast of experience so multifarious and extensive, yet, as our own has not been very inconsiderable, and as we have frequently practised the methods alluded to in many of the rivers of the kingdom, so we hope to lessen the chasm by citing to our aid some of later date, who have expressly given directions for pursuing these fish *under* the water, after the manner in which they, as well as ourselves, had practised the sport. We need not tell the angler that the salmon is to be chiefly found in large rapid rivers, especially in such as have pebbly, gravelly, and sometimes weedy bottoms. When feeding, this fish generally prefers the rough and upper parts of gentle streams, and the tails of large ones; when gorged, they retire to the deep broad water; when in motion, they swim very fast, usually in the middle of the river, and near the ground: they also move more at night than in the day, halting at convenient places, as though in ambush, under bushes, weeds, banks, rocky projections, or stones. The salmon bites best from six until eleven in the forenoon, and from three in the afternoon until sunset, especially when there is a moderate breeze upon the water. The chief months to angle for them are, March, April, May, and June, though they will take a fly until October, but they are then out of season; and if tried for, let it be with lob-worms and minnows.

3546. *Worm-fishing for salmon* should be practised with a long and firm rod of seventeen or eighteen feet in length, according to circumstances: the economic angler may make his minnow trolling rod serve his purpose: we never used any other, and found that ours, which was eighteen feet long, served both purposes fully. The tops employed were not, however, the same: that for worm-fishing was somewhat finer than the other, the minnow top, although sufficiently elastic, was altogether formed to resist the effect of the action of spinning the bait in rapids. A full sized multiplying reel on the last construction, or otherwise a large single one, should be adapted to the rod, sufficient to contain at least forty yards of the best silk and hair line, twisted very stout, looped to a foot-length of gut, with a hook link of double or of the very strongest single salmon gut, which will, in all general cases, be found sufficient; for it is surely better to gain three ordinary fishes by fine fishing, than one out of the usual course by other means. It was thus that we usually fished: but whenever circumstances, as the nature of the water, or the reputed size of its fish require it, double the gut, or even use fine gimp. A tripping bait for scowers and moderate currents we have often found successful; in which method of using the worm, the line must be shotted more or less, according to the force of the stream, to within four inches of the bait. Arm a hook, No. 3, 4, or 5. with two marsh-worms, one hung over the other; sink them in the current, or in the easy descent to a pool, allowing them to trip over the ground by lightly elevating the head, as the force of the stream moves the line forwards. In this way, by momentary stoppages, the bait meets the eye of the salmon, who usually lies with his head up the stream, in a bold scower or eddy, or within the area of some deep pool, towards the verge of it. The Trent anglers take many salmon with worms in spring.

3547. *Fishing with lob-worms for salmon* is often practised by means of a leger-line; but as the coffin-lead is not often required to be altogether stationary, it is not necessary that it should be near so large as that employed for barbel. Use a No. 1, 2, or 3. hook, run it through the middle of a lob-worm well scoured, and pull it above the shank; then take a second, and put the hook in an inch below the tail, drawing it on the hook about three-fourths of the length, the head of the worm being at its point; then draw down the first to the latter worm. Drop this bait into any likely situation, and the current will give motion to it by means of the loose portion of line below the lead; and when it has remained a few minutes without a bite, gently move it a little up the stream, and again let the plumb rest at the bottom. Drop it also in strong eddies, and at the declivities leading into deep pools, and particularly on the edges of the rocky precipices under the water. These will be found killing methods to play lob-worms, and they are seldom so shown but that they are taken, if salmon are present and on the feed.

3548. *The time when the water is too much discoloured for fly-fishing*, is that in which angling with the worm is peculiarly adapted to the taking of large salmon. If the colouring be considerable and the water much agitated, use lob-worms; but should the water be moderately coloured only, the largest of the other varieties, as brandlings and marsh-worms, sometimes kill best; when there is wind while the water is clearing, almost any worm will be readily taken. In very bright weather and bright water also, small worms well shown on a fine hook, as No. 4 or 5., will often attract when flies of all kinds fail. It is necessary in all these practices to observe, that the salmon requires the utmost caution in the approach to his haunts: to insure success, the angler should if possible be absolutely hidden, the shadow of even the rod and line ought not to fall on the water; but all ought to be still and quiet around, to lull into security this watchful fish. Except in very gloomy blustering weather, to insure sport begin your fishing as early as possible after daylight, and continue it in the evening as late as any light remains. In bright nights it is not unusual to fish all night long with the lob-worm both above and below, that is, on the top and in the depths. If much dew is falling salmon will not bite.

3549. *When a salmon takes the bait*, you will feel the line tighten; sometimes you will feel a sudden pull: in the former instance, give the fish time to gorge, and then strike pretty sharp, but not violently; in the latter case, it is probable the fish has hooked himself, and you should strike more moderately; but, in both instances, keep a tight line. Salmon generally take the worm gently within their lips, as it were, and then swim away to gorge it. While they are moving you must not check them, but give them line until a sudden tightening of it tells you the bait has been gorged. Then strike gently, and play your fish boldly, according to the strength of your tackle. We prefer for worm-fishing three or four lob-worms or large blue heads on the hook at the same time, without any lead.

3550. *The landing of the fish* is usually done by means of a gaff-hook, which has been already described and figured (p. 986.). If one be not at hand, draw the fish on a bank, and by putting the finger into the gills draw it out. The fickle state of the appetite of salmon at sometimes will make it necessary for the angler to try various other baits; all the larvæ are occasionally taken by them; but more frequently the fresh water snails of every variety are found enticing. The muscle, limpets, cockle, shrimps, &c. &c. are often used; and it may be almost said that there is no bait whatever taken by any other fish which salmon will not likewise sometimes be allured by; therefore it is prudent, when the angler is satisfied that there are salmon in the water before him, to vary his bait to suit their tastes. The marine testaceous baits, we have found to answer best in or near tideways, in which situations they will also take the sea-worm, called the lurgan (*Nereis cœrulea*), sometimes better than the earth-worms; and it is observed that salmon are more ready to do so when the tide is rising than when it is falling: it is particularly so with regard to shrimps, which they will occasionally seize, when drawn on the top of the water, with great eagerness. With a rising tide insects are stirred up, and small fish forced forward by the current, which the fish are then on the look-out for and ready to receive.

3551. *Fish baits, used either by trolling or spinning*, are also very tempting to salmon. We have occasionally killed successfully with small roach, dace, and bleak, but particularly the latter. Salmon will likewise readily take gudgeons, either by spinning or on a gorge-hock. When spun, take off a breast fin of one side, and a vent fin of the other. The method of trolling with these various baits in nowise differs from that already detailed with fish baits on the gorge-hook generally. The practice proves a very convenient one from the sides of wide rivers, or wherever the salmon haunts cannot be approached sufficiently near to spin a bait; for the gorge-lead will allow it to be cast to a considerable distance. This proves a good method also in waters of extreme depth, as in lakes, &c.; and there a trolled bait likewise often shows better from a boat than a spinning bait. The spinning bait is however one of the most killing methods among all those employed by the angler in the capture of salmon; and we have to remark, that whatever was the size of the fish, we have not found them so eager to take a very large bait as a moderate sized one. Thus there appear few baits more successful than a full grown minnow when it is well spun; but when the water is much coloured, a bleak, if it can be procured, is to be preferred. The methods employed and the tackle used are here also exactly the same with those already directed for similar fishings for trout, except that every part of the apparatus should be stronger. The rod proper for these occasions has been before noticed; the line should be the same as for the worm practice; the minnow harness ought to be of treble gut, except the last length, which may be double only, but very evenly twisted, and made from the choicest picked links; for bleak spinning the hook used should be an extra sized No. 1. Salmon-fry, graylings, or even small trouts, are also excellent baits for the same purpose; and, in fact, no others can be procured in some of the northern rivers. When we employed these, we used leaded hooks made on purpose, two sizes larger than No. 1., which we spun minnow fashion, and took by their means many a good fish.

3552. *As a general bait however*, wherever minnows are to be procured, we prefer them to all others: the largest salmon will seldom refuse a minnow if well shown; neither is it too large for the smallest, nor for the trout which may possibly be in the way, by which the chances of sport are increased. Under this view of the subject, with small baits and fine tackle, both large and small fish may be captured by them; but as regards the tackle, this must be received with limitation. In some of the Scotch and Irish lakes, where a fish of twenty or five-and-twenty pounds may be hooked, it would be most unwise not to be prepared accordingly: here a common pillar winch only should be employed, with sixty or eighty yards of powerful line, and armed with strong hooks firmly whipped to gimp instead of gut. In very wide rivers, and in lakes or lochs, a boat is a great assistance in salmon fishing, and in many situations it is indispensable. From a boat either anchored, rowed, or gently drifting, by trolling with salmon-fry and small trout, very large fish are taken. Lake fishing, where it can be procured in perfection, affords glorious sport. For our own parts, we have ever considered the proprietorship of a boat on an excellent fishing lake as one of the greatest sporting luxuries, where the mountains crested with rock, and skirted with wood to the water's edge, are reflected on the surface of the great profound. Here even the aged angler may look for his favourite amusement with the same hope as that which gilded his earlier and lustier days; for, as observed by the able critic on *Salmonia*, "by the help of a boat (fishing) may in many situations be followed even by the aged and infirm, if possessed of the requisite skill; and so much does dexterity supply the want of bodily strength, that we have known a gentleman, in a very weak state of health at the time, kill a fish of twenty pounds' weight after playing him for an hour."

3553. *Of salmon as a table fish.* The lower classes of English poor who live inland, and hardly taste this fish even stale once in seven years, and the Scotch peasantry who are, or rather *were*, obliged to eat it five days out of seven, would both equally wonder that so much theory and so much practice have been expended on a dish of fish. The taste of mankind stamps not only a value on particular edibles, but almost an equal one on the culinary preparation of them, and the condiments taken with them. As regards the trout, we have entered fully into what Colonel Hawker calls the *ne plus ultra* method of treatment, from the fish's exit from the water to its appearance on the table of the professor of good eating. We will now borrow not only the matter, but the dress of the subject also from Sir Humphry Davy, who, having brought a salmon on shore, exclaims, "Now gaff him; strike as near the tail as you can. He is safe; we must prepare him for the pot. Give him a stunning blow on the head to deprive him of sensation, and then give him a transverse cut just below the gills, and crimp him by cutting to the bone on each side, so as almost to divide him into slices; and now hold him by the tail, that he may bleed. There is a small spring, I see, close under that bank, which I dare say has the mean temperature of the atmosphere in this climate, and is much under 50°; place him there, and let him remain for ten minutes, and then carry him to the pot, and let the water and salt boil furiously before you put in a slice, and give time to the water to recover its heat before you throw in another, and so with the whole fish; and leave the head out, and throw in the thickest pieces first." (P. 94, 95.)

3554. *By these manipulations*, as already noticed with regard to the trout, the violence and suddenness of the death has tended to corrugate the muscular fibre, and it even becomes crisped as it were into hardness by the further violence of crimping; at the same time the gelatinous interstitial matter, called the curd, which is an essential particular in the flavour, is preserved entire by the cold, and then solidified by a boiling temperature additionally heated by salt. The old saw, that "use is second nature," is verified here; for we well remember, when in Ireland, eating fresh from the water, part of a Boyne salmon the flavour of which we by no means admired. It appeared to us hard and dry; and as it fell into apparent pulverescence under mastication, instead of presenting a consistent mass, it was some time before we could at all relish it: on the contrary (like the first regal George with his stale oysters), we sighed for the less adherent fish, with its curd dissolved into oil and softening the flakes between which it flowed. It is probable also that the slight early decomposition tends to heighten the flavour to palates accustomed to it. We were soon, however, taught to prefer the natural taste of the fresh fish; and as subsequent years presented these objects of our own taking, we became fixed in the preference.

3555. *The sauce used with fresh salmon* by the northern gastronomers, as we are informed by Halieus in *Salmonia*, is nothing more than a spoonful of the salted liquor in which the fish has been boiled, the only additional condiments allowed being a little lemon-juice, or in its absence vinegar and pepper.

Sect. XVIII. *The Varieties of the Salmon.*

3556. *The head of the family having been described*, and it being our anxious wish to offer something like a correct guide to our brother anglers by our descriptions, we would fain introduce the principal remaining personages of it also, with a table of their lineage and different degrees of relationship to each other, and to this their great archetype. In the course of our readings and journeyings, however, we have seen such a motley group of professed family descendants (orthodox and non-orthodox, for the scandalous chronicle attributes incontinence even to the venerable founder of the race), with brothers, half brothers, and cousins without end, that we are absolutely bewildered; and though amidst the infinity of nominal introductions made to us by divers persons and in divers places, we were still more frequently presented with those of Messrs. *sea trout, bull trout, phinoch, torgoch, case-char, grey trout, white trout*, &c. &c. among the full grown members of the family; and of *samlet, sampson, gravling, parr, fingerling*, &c. of the small fry: we begin to suspect that we have been introduced to the same individuals several separate times, but under a new title; and we are also uncharitable enough to surmise, that the very best friends of these many-named aquatics, and even such as live immediately among them, know little more of them than ourselves.

3557. *The bull trout* (*Salmo eriox* Linn.) is also known as the grey trout, whistling, and round tail. That great angling philosopher, Sir Humphry Davy, in the first edition of his *Salmonia* introduces us to a well known half brother of salmo, the sea trout, under the name of *Salmo eriox*, but whom other friends of the family evidently consider to be a distinct personage; and this author's second edition would lead us to suppose that he had adopted that opinion, as there we again meet with him under another questionable title, that of *Salmo Trutta:* neither is that the only instance of discrepancy on the subject in this admired work; a fact which further helps to prove, that our present knowledge with regard to the various fish who bear a generic or specific relationship to the salmon, is yet very limited and uncertain. Our great master Linnæus has been contradicted by subsequent naturalists. Dr. Shaw has also ceased to illumine us even; and Dr. Fleming, on whom, by living amongst the family, we rested our last hopes for full information, is much at variance with other authorities In some instances he seems not to place much dependence even on his own nomenclature in regard to this ill defined family, although on most other subjects the critical *acumen* of this gentleman is unquestioned. In our opinion all migratory trout are varieties caused by "crosses" between the salmon, sea and common trout, and afterwards by the interbreeding of those crosses. The varieties of non-migratory are caused by crosses between lake and river trout. The nomenclature of trout is exceedingly imperfect, and we fear will long remain so. It would take a long and observant life to classify characteristically the infinite varieties of trout.

Subsect. 1. *The Salmon Trout* (*Salmo trutta* Linn.).

3558. *Purplish grey salmon*, with the head, body, and dorsal fin bedropped with black spots. (*Shaw.*) *S. oculis nigris iridibus brunneis, pinnâ pectorali punctatâ.* (*Linn. Syst. Nat.* p. 609.)

3559. *S. Trutta*, sea trout, or salmon trout of Mr. Yarrell, bears the following generic characters: — Gill-flap with nine rays; jaws nearly equal. (*Fleming.*) Mr. Yarrell describes it as distinguished by the gill-cover being intermediate in its form between that of the salmon and bull trout. The line of union of the operculum with the sub-operculum and the inferior margin of the sub-operculum is oblique, forming a considerable angle with the axis of the body of the first. The posterior edge of the pre-operculum is rounded, not sinuous. The teeth are more slender and numerous than they are either in the salmon or the bull trout It is the white trout of Devonshire, Wales, and Ireland; also known in the Esk, Eden, &c. Dr. Fleming says of this fish, that the flesh is red, especially in those which have the palate dark coloured; and that its migrations are nearly similar to those of the salmon. The samlet, or parr, of Pennant (*Brit. Zool.* iii. 303.) is now by some considered as the young of this species, but more correctly by others of the salmon.

3560. *The salmon trout* (*fig.* 535.) is by Mr. Pennant, we believe, called the sea trout after Willughby. Dr. Shaw likewise describes it under this title. It is however remarkable, that the northern fishermen all of them strenuously deny their identity, and contend that the difference between the two is constant and well defined; as however we shall have occasion again to refer to the subject, at present we shall pass on to the consideration of it or them under Mr. Yarrell's name of salmon trout.

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SEA TROUT.

3561. *The salmon trout* therefore, if we depend on the lists of some authors, must be a fabled animal; yet among others it is described with all its characters and attributes. The author of *Salmonia*, as we have just shown, considers that all the varieties of the salmon family, which he has been able to identify in the rivers of Britain and Ireland, to be the common salmon and the sea trout. It is however worthy of note, that he elsewhere mentions salmon trout, but in such a manner as to leave its true character questionable; and it is noticed, not as an inhabitant of our isles, but as one found in the Traun Sea, or more properly Traun Lake, of the Germans. On the contrary, the salmon trout which enters our popular lists is of very old character, as an individual among us: it is also a distinct and highly appreciated object of the angler's sport, as well as an important economic species.

3562. *The bull trout*, Mr. Yarrell however acknowledges as a distinct variety. The characters of the gill-covers of the salmon trout and the bull trout, he observes, present great differences. In the bull trout the line of union of the sub-operculum is oblique, forming a considerable angle with the axis of the body of the fish. The posterior edge of the preoperculum is also rounded, not sinuous, as in the bull trout. The teeth of the bull trout are longer and stronger than those of the salmon, and the tail is square. In its growing state it is a resident of the Tweed, and is not a bull trout until its majority. It is common in South Wales, the rivers of Dorsetshire and Cornwall. Of our own knowledge, it is to be caught in Cumberland, where it has been taken of sixteen and occasionally of seventeen and eighteen pounds It is a bold free-taking fish, but the angler will not find it, as an edible, so good as the salmon; but as a bold and powerful fish it yields excellent sport.

SUBSECT. 2. *The Parr, or Samlet* (*Salmo salmulus* Willughby).

3563. *Mr. Yarrell says of the parr*, which abounds in our salmon rivers, that it has given rise to more discussion than any other species of the genus. Presenting as it does those lateral marks which are seen on the young trout, and also on the young of the other *Salmonidæ*, it appears to have always been protected by legal enactments, as the acknowledged fry of the salmon species, either grilse, bull trout, salmon trout, or river trout. But in the words of Mr. Yarrell, that the parr is not the young of the salmon, or of any other of the larger species of *Salmonidæ*, as still considered by some, is sufficiently obvious from the circumstance, that parrs by hundreds may be taken in the rivers all the summer, long after the fry of the year of the larger migratory species have gone down to the sea. The dusky bars, from which the parr has obtained the name of brandling and fingerling, is no proof whatever of its connection with the larger species; for these are all obliterated by degrees, and at periods depending on the ultimate size attained by the individual species when adult; the soonest probably in the salmon, and certainly the latest in the parr. In proof of the individuality of the parr it may be stated, that there are streams in which parrs abound, although salmon never visit them; and further, that in the Western Isles there are lakes to which salmon resort, yet no parr have been found there. The acumen of Sir William Jardine has been exercised on this subject most satisfactorily; and we would refer the reader to the *New Philosophical Journal* for January, 1835.

3564. *Respecting the parr* great discoveries have been recently made by Mr. Shaw of

Drumlanrig and Mr. Andrew Young [*See* '*Book of the Salmon*,' published by the Messrs. Longman]. Mr. Shaw has completely proved that the fish erroneously called the "parr" is the young of the salmon previously to its assuming the silvery or migratory coat. Mr. Young has proved that the migratory coat is assumed at the age of twelve months. There is great similarity between the trout which Mr. Shaw calls the parr and the young of salmon at the age of eight months. They are about the same size, and are marked with transverse bars of almost similar appearance. But on close examination of the head and fins of the parr and salmon-fry, a judge will discover that the former is a perfectly shaped mature fish; the latter an imperfectly shaped young fish, the offspring of a very large species. The fins of the salmon-fry are much larger than those of the pure parr; so is the head, which is of imperfect formation.

Subsect. 3. *The great Grey, or Lake Trout* (*Salmo ferox* Jardine & Selby).

3565. *This splendid fish* appears to have been first recognised in Loch Awe, and was afterwards noticed by Pennant as a native of Ullswater. It is known also in Lough Neagh in Ireland. It has been supposed to be identical with the great trout of the Lake of Geneva. It is also common in Loch Awe, Laggan, Loch Shin, Loch Loyal, and Assynt. Mr. Yarrell tells us, that the length of the head of this fish is to the head, body, and tail, as one to four and a half; the depth of the body not equal to the length of the head; the teeth large, strong, and numerous, occupying five lines.

3566. *Bull trout.* Gen. char.: upper jaw longest; anteriorly only, but both are longer and stronger than those of the salmon; teeth in the vomer; the commencement of the dorsal fin is half way, anal fin with about ten rays. Spec. char.: B.11.; D.13.; P.14.; V.10.; A.10.; tongue with a row of teeth on each side, and a single row on the lower jaw. (*Fleming.*)

3567. *This species*, the bull trout, is nearly as large as the salmon, and is well figured in Yarrell. It is more lengthened in shape than the salmon; the colour is nearly the same; the flesh is white and insipid. Such is the account which Dr. Fleming gives of this fish. Dr. Shaw describes it thus: — "Shape like that of the salmon, but considerably longer in proportion; length from two to four or five feet; colour silvery grey, with numerous round, deep brown spots; back dusky; fins (except the ventral, which are yellowish) pale purple, thickly spotted with brown, not excepting even the adipose or small fin; tail forked; abdomen plain or unspotted; scales rather small; lateral line nearly straight. Inhabits the Danube, the Bavarian and Austrian lakes, and the rivers of Russia and Siberia: not much esteemed as a food, the flesh wanting firmness." It would appear that it is not considered by Shaw as a British native. We are ourselves however disposed to think, that the scurf or bull trout of anglers is not the *Salmo hucho* of naturalists, which is without doubt a scarce fish in our island; whereas the bull trout of fishermen is very inferior in size, and by no means uncommon. We consider it a mixed breed, between the salmon and some sort of trout.

3568. *Captain Williamson* says, that "the fish set down by authors as bull trout, bleachers, bulgers, scurffs, white trout, whitling, or sowin, are all names for this remarkably fine fish, which comes up from the sea late in the spring, and is to be found until the first frosts, when they return to the salt water. Some spawn in the rivers in September, and others are to be found retiring from them full of roe; but as this only occurs where the northerly winds prevail strongly in October, we may perhaps be right in concluding, that they cannot bear cold weather: their very late access from the sea is some confirmation of this opinion. Some are deeper coloured on the back than others, but in general there is a brilliancy on every part which causes them to appear quite white at a distance. They are of a light bluish brown down the backs, and are beautifully marked with spots of red, a few smaller black ones being intermixed all over the sides, down to the lateral lines, which are richly but delicately coloured. The head of this fish is bluff, not unlike that of the chub; its fins are strong and stiff, and the tail is broad, but not much forked. They are extremely partial to brackish water; and are caught in great numbers at the entrance of rivers by the fishermen, who, when the tide is coming in, carry their nets out obliquely from the shore, and sit in their little *cob-boats* at the outer end, watching for the fish, which when entangled agitate the net considerably: their general shape is longer than that of the common trout. Some authors state that this fish weighs from one to three pounds, but my own experience tells me they generally run from two to ten, or even to twelve pounds. I once saw a whitling of that size: I have bought them frequently weighing from six to ten pounds; and my own hook has procured me more than one very little under eight."

3569. *Sir Humphry describes the Salmo hucho*, huchen, or bull trout, as common to the waters of Austria. "It is," he says, "the most predatory fish of the salmon genus, and is made like an ill fed trout, but longer and thicker. He has large teeth, more spines in the pectoral fin, a thicker skin, a silvery belly, and dark spots only on the back and sides. I have never seen any on the fins. The ratio of his length to his girth is as 8 to 18, or, in well fed fish, as 9 to 20; and a fish eighteen inches long by eight in girth weighed sixteen thousand two hundred and fifteen grains. Another, two feet long, eleven inches in girth, and three inches thick, weighed four pounds two ounces and a quarter. Another, twenty-six inches long, weighed five pounds five ounces. Of the spines in the fins, the anal has nine, the caudal twenty, the ventral nine, the dorsal twelve, the pectoral seventeen. *Having numbered the spines in many I give this as correct.* The fleshy fin belonging to the genus is, I think, larger in this species than in any I have seen." It migrates in the spring, and reaches to thirty or even forty pounds' weight. It is represented as like the sea-trout in whiteness, but as being much narrower in shape. We would recommend the inquisitive reader to the second edition of *Salmonia* for a very interesting account of the *Hucho.*

Subsect. 4. *The Phinock* (*Salmo albus* Fleming).

3570. *Salmo albus.* Silvery grey salmon, with very bright abdomen; dorsal fin spotted with black, and black forked tail. (*Shaw.*)

3571. *S. albus.* Gen. char.: jaws nearly equal; teeth numerous, recurved. Spec. char.: This species seldom reaches a foot in length; the back is nearly straight; the colour above greyish-black; the belly silvery white; the scales small; the caudal-fin is black, and the pectorals yellowish towards their extremities; B. 11.; D. 12.; P. 14.; V. 9.; C. 24.; the flesh has a reddish tinge. (*Fleming.*) This fish leaves the sea about July, and spawns in August or September. It appears to have been first described by Pennant, and was unknown to Linnæus. Dr. Fleming conjectures that it is the *Salmone Cumberland* of Lacepède. Mr. Pennant says that "the phinock comes from the sea into the river Esk in Cumberland, from July to September, and is called from its colour the whiting. On their first appearance from the salt water the *Lernea Salmonea*, or salmon louse, adheres to them: they both milt and spawn, but no fry has as yet been observed. This is the fish called by the Scotch *phinocs.* The whole of the body is of an elegant form; the lateral line is straight, and placed rather lower than in the generality of fishes; the colour between that and the top of the back dusky and silvery intermixed, beneath the line of an exquisite silvery whiteness; the first dorsal fin is spotted with black, and much forked; they seldom exceed a foot in length, and weigh from one to two pounds: when dressed their flesh is red, and of most delicious flavour. Various opinions are formed with regard to these fish: some suppose them the young of sea trout, others those of the salmon, while by a third set they are considered as altogether of spurious origin. They are sea-trout in their second year.

Subsect. 5. *The Salmon Fry* (*Salmo salmulus*), *with their congenerous Varieties.*

3572. *Bluish grey salmon,* with distinct reddish spots, and forked tail. (*Shaw.*)

3573. *In all the rivers communicating with the sea,* and frequented by the members of the salmon genus, are seen innumerable small fish, which have occasioned great diversity of opinion with respect to their origin. These are known by the various names of salmon-fry, salmon smelts, parrs, samlets, sampsons, brandlings, fingerings or fingerlings, gravlings, gravel last-springs, last-springs, chedders, skirlings, &c. &c.

3574. *It would be expected that, from the great fecundity of the salmon,* an immense mass of young would be found; and so there are, varying in appearance from a day old to the age of twelve months. That all the above little fish, so variously named, are the young of salmon, Mr. Shaw, of Drumlanrig, and Mr. Young, of Invershin, have satisfactorily proved in the judgment of observant naturalists. There existed a difference of opinion between Mr. Shaw and Mr. Young, the former calling young salmon with the transverse bars and pink spots along the lateral line "parrs," and Mr. Young naming them "salmon-fry;" the former maintaining that young salmon did not become smolts, or assume their silvery migratory coat, until they had attained the age of *two* years; the latter insisting that they did at the age of *one* year. We agree with Mr. Young, and believe that Mr. Shaw has acknowledged that he was in error, and that Mr. Young is right. For the better understanding of their opinions, we refer the reader to *Experimental Observations on the Growth of Salmon-Fry*, by Mr. Shaw, published by Black, Edinburgh; and to *The Book of the Salmon*, by Ephemera and Mr. Young, published by Longman and Co. In *A Handbook of Angling*, written by Ephemera, that author gives the following summary of Mr. Shaw's theory:—"I shall, before I enter into detail, give, in a very few words, the salient points of the salmon's natural history, according to Mr. John Shaw, of Drumlanrig. The female salmon, viz. the fish with what is commonly called the 'hard roe,' deposits its eggs, spawn, or ova, in gravel beds, in the autumn and winter months. Simultaneously with deposition, the ova are impregnated by the spawn (the milt) of the male fish, or 'soft roe,' being exuded over them. That is the active process of procreation. The deposited eggs or ova are hatched, on an average, in from ninety to one hundred and forty days; duration of time depending on the temperature of the water. The warmer the water, the more rapid is the work of incubation. In a few days after the expulsion from the ova, the incubated matter assumes the fish shape. This embryo salmon at first grows slowly, and remains for the first year the diminutive parr or fingerling. On completing its second year, it changes its coat, and indeed its shape. The parr or samlet marks and spots disappear, and it becomes the silver-grey smolt, salmon fry, or last-spring. Its second year or thereabouts being completed, it migrates for the first time to the sea, and in two or three months or more returns to its parent river a grilse, having increased from one to two pounds every month it has tarried in sea water. About the end of its third year (I am speaking of the female fish, for the puerile parr will breed, *horresco referens*, with its great grand-dam,) it breeds, and soon after migrates for the second time to the sea. A sojourn there of a few weeks changes its name, size, and shape, and immigrating again to its native streams it becomes a salmon. To deserve that name, it must have spawned once, and been twice to sea. Afterwards, as long as it lives, it visits the sea annually, and annually revisits the streams of its birth, in which it gives birth to thousands of its tribe. Become an adult, the longer it remains at sea the more rapid its growth. In fresh water, it no longer grows, and seems to seek the pure fresh element, chiefly for the purpose of propagating its species. I have now, in a very few lines, traced the grand outlines of salmon life."

3575. *There are some errors* in the above paragraph, in the opinion of Mr. Young. He thinks it erroneous to call the young of salmon at any stage "parrs," for he maintains that the parr is a distinct fish, found in rivulets to which salmon can have no access. He also says it is erroneous to state that salmon-fry do not become "smolts" until they are two years old, or that they do not migrate to the sea before that age. He maintains they do at the age of twelve months. 'Tis an error, Mr. Young asserts, to state that a young male parr will fecundate the ova of a female salmon. He proves it to be a physical impossibility on account of the minute quantity of milt in the male parr or salmon-fry, and the very large number, thousands of ova, of the female salmon.

3576. *Of the parr, or samlet*, or as it is termed the fingerin, Sir Humphry Davy appears to form an opinion, that it is produced between the sea trout and river trout; and he instances in proof of it, that in a small river in Ireland he took a great number of small sea trout of half a pound in weight, which were all males; and unless it be supposed that the females were in the river likewise and would not take the fly, these fish, in which the spermatic system was fully developed, could only have impregnated the ova of the common river trout. The sea trout and river trout are indeed so like each other in character, that such a mixture seems exceedingly probable; but I know no reason why such mules should always continue small, except that it may be a mark of imperfection. The author of the celebrated critique on *Salmonia* which graced the pages of the *Quarterly Review* for October, 1828, observes, "One of the most experienced and scientific anglers of our acquaintance entertains this opinion of the identity between the parr and the smoult of the salmon, from having observed that when the silvery scales are rubbed off the sides of the smoult, they exhibit the blue or olive bluish marks (see *Salmonia*, p. 68.), which are considered as distinguishing the parr. The same curious observer of Nature has also remarked, that the lens of the parr's eye is arranged in the same manner with that of the salmon, and totally different from the lens of the Lochleven trout, herring, sperling, and so forth." The remarks of Sir Humphry Davy are incorrect, mere surmises from imperfect observation. Those of the reviewer are nearly accurate. If he had used the term "salmon-fry" instead of "parr," his observations would be true.

3577. *The growth of salmon-fry*, calculated according to Mr. Young's experiments, as narrated in the *Book of the Salmon*, is as follows:— "The ova having been hatched, the embryo salmon pierces the sandy and gravelly crust of its nest, and almost *instanter* assumes a shape somewhat like a fringed larva of about three quarters of an inch in length, and tapering from head to tail. At a month old the fish-fœtus has grown in length, and exhibits to the naked eye plain traces of head, eyes, and fins. Still it is barely more than a pale, misshapen, little longitudinal, half-animated substance. At two months old the 'fry' measures about one inch and a half, is of nearly perfect piscine formation, having all its fins well defined, and on its coat a slight appearance of bars, commonly and erroneously termed 'parr marks.' In speaking of the young of salmon I shall invariably use the word 'fry,' until they have attained the age of twelve months, when I shall call them 'smolts.' That is the correct nomenclature. At from three to four months a salmon fry measures in length from two to two and a half inches, hardly so much. Its head is round; there are pink spots on the body, and the transverse bars are plainly apparent. At six months the young fish measures from three and a quarter to three and a half inches in length, and the pink spots and transverse bars continue to become more and more distinct. At eight months the fry is very little longer than it is at six months of age, but it is evidently thicker or more bulky. At nine months even, the increase of growth does not tally with increase of age. A salmon fry at ten months measures about four inches, and the transverse bars begin to disappear, silvery smolt scales by degrees taking their place. At eleven months its length is four and a half inches, and the bright silvery scales are now seen descending towards the region of the belly. A salmon fry at twelve months is called a 'smolt.' It is the 'last-spring' of the Severn and its tributaries, and has many local names."

3578. *Rapid growth of salmon after attaining the smolt stage.* "The reader," (we are quoting the work last mentioned,) "must have already remarked the very slow growth of salmon-fry. At the end of a year, the whole of it passed in fresh water, the young fish, on an average, weighs little more than four ounces. At that weight, being a smolt, it descends to the sea; and if it should remain therein, say for eight or nine weeks, which is about the average time, and then return to its natural element, fresh water, it will in all probability, and no specific circumstances preventing, have increased by the end of that time to the weight of five pounds or more. So, if the growth of salmon during the first year of their existence is extremely tardy in fresh water, it is, after that age, more than proportionably rapid in salt-water. It will be well to bear in mind that the growth of salmon is not always proportioned to the length of time they sojourn at sea. Several circumstances affect their rate of physical development. Amongst others, indeed they are the chief ones, quality and quantity of food found in the salt-water feeding grounds, and hereditary capacity for growth. By 'hereditary capacity,' I mean that the offspring of large fish have the inherent power of growing, and do grow, to a larger size than the young of small salmon. When I speak of large and small salmon, I refer to fish which eventually become very large, and to fish which, no matter what their age, will always be small; in fact, to giant and dwarf breeds. The growth of salmon-fry is pretty equal in all rivers; and, therefore, smolts, no matter whether they are the produce of large or small salmon, will be found in different rivers, not differing much in size. Such is not the case, however, after the smolt stage of existence. After that, the growth of the offspring of large growing salmon is much more rapid than that of the produce of salmon of more diminutive race."

Subsect. 6. *Angling for the several Varieties of Salmon.*

3579. *As the angler's practice in regard to the larger varieties differs little,* if at all, from what has been laid down for the capture of the salmon himself; we need not dwell on their individual anglings here, but reserve any particular remarks for our treatise on fly-fishing, and our localities of fishing. It may be observed, however, that it is an opinion that the grey is not often taken with a bait; but that the bull trout and salmon trout will take both worms and fish baits by trolling. We have ourselves often caught these fish in the rivers of the northern counties by both these methods when fishing for salmon; and what we captured were sometimes called by one name and sometimes by another, as bull trout, salmon trout, &c.; nor do we recollect that any difference existed between them, either in the bait, or the method of ensnaring them with it. It is very much the same in angling for the small fry, we have ourselves noticed, or those treated of by other anglers, as they will all take indiscriminately worm, gentle, and fly. When they have reached beyond seven or eight inches in length, they may be observed chasing the minnow also; but we never knew them attempted this way by the angler. In the northern counties they are principally caught by the fly, and in the Thames and Lea, where they are found about the end of May and until July, they are taken in the same manner. They are also captured in these rivers, and indeed in others where there are considerable deeps without many accompanying sharps, by means of bloodworms or red worms on a very fine hook, as No. 9, 10, or 11. About Bromley the angler used to meet with excellent sport in fishing for them with a paternoster line; but the quantity now found is not worth the trouble of seeking for them; and although they are still to be met with in the Thames, it is in very reduced numbers. With a worm they must not be fished for here until the 1st of June, but a gentle may be used at the top of the water, by whipping, at all times: put one at a time on a No. 9 or 10. hook. The method of whipping with flies will be noticed with both natural and artificial fly-fishing. When fishing with worms or gentles at the bottom, use a float and these hooks, one about six inches from the ground, another about a foot, and a third at mid-water. In the Wye we have taken several dozen in an hour in this way, and in some of the pools of the Coquet, when the water was too high and too coloured for the fly, we have done the same; but the fly and the gentle *at top*, or gentle and fly together, is the liveliest practice and takes the largest fish among them, as will be noticed hereafter.

3580. *The edible qualities of all these varieties are well known,* and the culinary preparation of them also is too well known to need any observations thereon. The usual value of all the varieties is in the ratio of their colour; indeed, it is almost a general rule, that where the flesh of any of the genus *Salmo* is white, it is usually insipid. The little gentry we have just taken leave of, we have dined on many times with the keenest relish; and we have eaten them both fried and boiled. Baked in a warm pickle, they make a most excellent summer dish. Brother angler, harkee! Hang up a few of the largest to dry after salting them, and broil them for your breakfast — *verbum sat.*

Sect. XIX. *The Pike and Jack* (*Esox Lucius*).

3581. *Greyish olive pike* (*fig.* 536.), with yellow spots and depressed sub-equal jaws. (*Shaw.*) *E. rostro depresso subæquali.* (*Linn Syst. Nat.* p. 516.)

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PIKE.

3582. *E. Lucius.* Gen. char.; body, olive above, with yellow spots; beneath white, with black spots. Spec. char.: body of nearly an equal thickness, suddenly decreasing behind the dorsal and anal fins; D. 21.; P. 15.; V. 2.; A. 16. (*Fleming's Brit. Anim.* p. 184.)

3583. *Pike and jack,* it is well known, are mere verbal distinctions as regards size and age. When the fish does not exceed 4 lbs. or 5 lbs. in weight it is called in England "a jack," and above that weight "a pike." The indigenous character of this fish has been disputed, although, according to some of our best naturalists, there is abundant proof that it has always been a native of our waters. That the pike was found in England before the period usually named for its introduction (*i. e.* the reign of Henry VIII.), we have decisive proof, as it made a part of the entertainment in the great enthronisation feast of Archbishop Nevil, in 1466. But whenever it first became known in England, it has from the earliest records extant been common in the lakes of Europe, particularly in those of Lapland, where, according to Schœffer, pike are sometimes found eight feet long, and are there taken in such abundance, that they form an object of commerce, and as such are dried and exported.

3584. *Dr. Shaw describes the pike* as having "a very flat head; the upper jaw broad, and shorter than the lower, which turns up a little at the end, and is marked with minute punctures; the teeth are very sharp, disposed in the upper jaw only in front, but in both sides of the lower, as well as in the roof of the mouth, and often on the tongue; the number, according to Bloch, is not less than seven hundred, without reckoning the farthest of all or those nearest the throat; it is also to be observed, that those which are situated on the jaws are alternately fixed and movable; the gape is very wide, and the eyes small; the dorsal fin is placed very low on the back, and consists of twenty-one rays, the pectoral of fifteen, the ventral of eleven, and the anal of eighteen; the tail is slightly forked, or rather lunated. The usual colour of this fish is a pale olive grey, deepest on the back, and marked on the sides by several yellowish spots or patches; the abdomen is white, slightly spotted with black: when in its highest perfection, however, the colours are frequently more brilliant, the sides being of a bright olive with yellow spots, the back dark green, and the belly silvery. Dr. Bloch assures us, that in Holland the pike is sometimes found of an orange colour, marked with black spots; the scales are rather small, hard, and of an oblong shape." The internal conformation of the pike presents few specialties. A pale flesh coloured liver, with its gall bladder united to it at its upper part, whose long duct enters the alimentary canal obliquely, first strikes the eye. The spleen is dark and triangular, and the heart is somewhat of a similar figure; the intestinal canal makes three turns, and is imbedded in fat; the stomach is strong, and composed of membranous folds, by which it is capable of great dilatation, in strict accordance with its voracious aptitudes.

3585. *The size of the English pike* is in some instances very great. "In 1797, one weighing near forty pounds, and measuring in length three feet six, and in girth two feet, was caught in a pond at Totteridge in Hertfordshire; a tench of four pounds, and four pounds and a half of solid fat, were taken from his inside. In Munden Hall Fleet (already mentioned for its remarkable tench), a pike was found that had been killed by a long frost; in its putrid state it weighed forty-two pounds, but had wasted considerably; was three feet six long, and two feet nine inches in girth; the teeth were nearly as long, though not so stout, as those of a greyhound." Dr. Grierson mentions one taken in Loch Ken in Galloway, which weighed sixty-one pounds. (*Thomson's Annals of Philosophy*, vol. iii. p. 248.) It is said that in the Irish lakes pike have more than once been taken exceeding seventy pounds' weight. Major Bingham relates, that when on a visit to the late Marquis of Clanricarde at Portumna Castle, a pike taken from the Shannon was brought there by two gentlemen, which when weighed somewhat exceeded ninety-two pounds. One of seventy-two pounds, whose head is yet to be seen at Kenmore Castle, and which had been taken with a fly, weighed seventy-two pounds. We are disposed to think these Leviathans might be more often taken with very full bodied flies dressed to represent those birds, as swallows, &c., which skim over the water in search of flies. We have frequently seen these darted at in heavy broads both by large trout and pike. We took a jack on Boxmore with a fly, which it had seized with great voracity.

3586. *The voracity of the pike is notorious*, and has given rise to some wonderful stories; one of which, related by Walton, partakes of the marvellous; nevertheless, there are well authenticated accounts which satisfy us with regard to the vastness of its appetite. Mr. Pennant observes that he himself has known one that was choked in attempting to swallow one of its own species which proved too large a morsel. It will also devour water rats and young ducks, which happen to be swimming near it. In a manuscript note to a copy of Plott's *History of Staffordshire*, and which Mr. Pennant afterwards found was inserted, on good authority, by a Mr. Plott of Oxford, the following highly singular anecdote is recorded:—"At Lord Gower's canal at Trentham, a pike seized the head of a swan as she was feeding under water, and gorged so much of it as killed them both; the servants, perceiving the swan with its head under water for a longer time than usual, took boat, and found both swan and pike dead." "In 1801, a hook baited with a roach was set in the manor pond at Toddington, Bedfordshire; the next morning a large pike was caught, which with difficulty was got out. It appeared that a pike of three and a half pounds' weight was first caught, which was afterwards swallowed by another, weighing thirteen pounds and a half, and both were taken." As elsewhere noticed, a pike of Lord Cholmondeley's, which had been put into a canal full of fish, in twelve months time had devoured them all, with their progeny, except a single carp, whose weight (between nine and ten pounds) had saved him from entire demolition, though his scars showed that he also had been attempted. From the size of the fish which have occasionally been taken from within them, there appears to be hardly any limit to their voracity. One caught in the Isis was found to contain a barbel of six pounds, and a chub of more than three: these nine pounds of food formed nearly a third of his own proper bulk, which was thirty-one pounds and a half. The circumstance of two fish of such dimensions being within the animal at one time, is a proof that the calls of appetite in this tribe are of a peculiar kind; they are most imperative, but not incessant. The desire to fill the stomach is such that no offal is refused; animal substances of every kind, living and dead, are equally well received, and sometimes other matter; for the plummet of the angler, the clay and bran balls for groundbaiting, when he is in one of his gormandising moods, are not refused, of which many instances have occurred; and it is at such times that he dashes at large flies on the water, prompted to it probably by his habits of receiving there many savoury morsels, in the shape of rats, mice, and frogs, as well as the young of ducks, geese, swans, and other aquatic birds, which he is known to prey on as readily as on fish.

3587. *The notorious voracity of pike* is exemplified by their devouring their own progeny with as little reluctance as any other; and it is not at all unusual to find the young fry within them, from the size of an inch and a half and upwards. It is related also of this tyrant, that he has been seen contending with the otter for his prey: he has been known to dash at the noses of cattle while drinking, as well as at the hands of persons lading water from rivers and ponds; and these relations there is no reason to doubt. We might indeed, *à priori*, suspect him of extreme rapacity by his conformation: his jaws, loosely connected, present a structural peculiarity which greatly favours his capacity of receiving animals whose ratio of bulk it would appear impossible otherwise to take in; and the dilatability of his throat and stomach is no less remarkable. The digestive powers of the pike are also peculiar; and it has been affirmed in proof of them, that after in part swallowing a fish of a size but little inferior to its own, those parts that have entered into the stomach are dissolved with amazing rapidity; while those in the mouth and throat, which are yet entire, make a constant progress downwards, as the process of digestion makes way for them. Hence a fish which is too large to be swallowed entire, appears for a while with its tail hanging from the mouth of the pike; but soon after totally disappears, and is dissolved by the stomach almost as quickly as it enters it. We are not prepared to deny such a power altogether, because we know that many other animals can thus partially swallow their prey, and digest only the portion in the stomach; but in general these are animals which do not respire through the medium of gills. In fish, unless sufficient room be left within the mouth for its action to inhale the water, and pass it through the gill fringes with freedom, strangulation must take place: we therefore conceive only such a bait could be thus partially swallowed as would not obstruct the action of the mouth and gills. Indeed, there are not wanting instances in which both pike and jack have been effectually choked by too large a bait.

3588. *The abstinence of the pike and jack* is no less singular than their voracity; during the summer months their digestive functions are somewhat torpid, which appears a remarkable peculiarity in their animal economy, since it must be in an inverse ratio to the wants of the fish, which are at this time in a state of emaciation from the effects of spawning; and the circumstance is fortunate, for were the appetite as usual, few young fry could escape: but during the summer they are listless, and affect the surface of the water, where in warm sunny weather they seem to bask in a sleepy state for hours together; and at these times they frequently get snared by the wire loop of the poacher. It is not a little remarkable also, that smaller fish appear to be aware when this abstinent state of their foe is on him; for they which at other times are evidently impressed with an instinctive dread of his presence, are now seen swimming around him with total unconcern. At these periods no baits, however tempting, can allure him; but on the contrary he retreats from every thing of the kind. Windy weather is alone capable of exciting the dormant powers; and thus, if a cool sharp breeze springs up, he may be sometimes tempted to *run;* but even then he will rather play with the bait, and may be seen even sailing about with it across his mouth; after doing which he commonly ejects it. This inaptitude to receive food with the usual keenness, continues from the time the pike spawn until the time of their recovery from the effects of it; and thus pike and jack fishing is not often productive of much sport between March and October, unless an occasional breeze should blow a hungry fit on them: and it is thus also, that when they are attempted between these periods, the experienced fisher often at once commences his practice by snap-tackle. We are disposed to think that the decrease in the voracity of these fish during the heats of summer is in some measure likewise influenced by the increase of temperature. This animal thrives best in frigid climes, and the further we proceed north, within certain limits, the larger is his growth: thus in the Canadian lakes he exists in vast numbers, and grows to the length of four and five feet: and he does the same in the cold waters of Lapland also, disappearing, according to Wahlenburg, in geographical distribution with the spruce fir. It is no wonder, therefore, that only a slight approximation to the equator should unnerve his powers, particularly during the summer heats.

3589. *Jack and pike spawn either in March or April*, according to the forwardness of the spring or temperature of the atmosphere, as well as the situation of the water. They retire for the reproductive purpose in pairs, quitting the rivers for the creeks and ditches. When confined in still waters, they seek the stillest parts of them, and frequently occupy a weed-bed, or remain towards the edges or shallows, depositing their spawn among aquatic plants, of which the reed and rush variety are favourites. The male may be seen during this time accompanying the female with much attention, and when the fecundating milt has been deposited over the ova, the pair retire into deeper water, and seem to feel no further solicitude for the result of the process.

3590. *The usual haunts of pike and jack* are in still, shady, and unfrequented waters, having a sandy, clayey, or chalky bottom, they being observed to arrive at a larger size in pools than in rivers. From May to the beginning of October they usually place themselves amongst or near flags, bulrushes, and water docks, and particularly when the plant is in flower, under the *Ranunculus aquaticus*. They are seldom found where the stream is rapid; but a retreat in the vicinity of a whirlpool or sharp bend is a favourite hold for them.

From March to the end of May they resort to back waters, that have direct communication with the main stream. As winter approaches, they retire into the deeps, under clay banks, or where bushes impend over the water, and where stumps and roots of trees offer them a strong hold.

3591. *The localities likely to furnish the professed pike fisher with sport*, are numerous and widely distributed. Most of the lakes of Ireland contain pike in abundance. Those of England and Scotland, particularly the former, are also well stored with them. The rivers of our own country are too well known to need much notice in this respect, pike being found in almost all of them without exception. Pike, however, are not so plentiful, and are seldom met with in any but deep and sluggish streams, of which some of the midland counties have no lack, Dagenham Breach, for instance; the waters of Lord Melbourne at Brocket Hall; of the Marquis of Salisbury, in Hatfield Park; or of the Duke of Marlborough, at Blenheim. Both pike and jack, but particularly the latter, appear disposed, in some localities, to migration. They quit their winter quarters, and congregating, they seek a new location, probably impelled by want. The Rev. R. Sheppard observes that a migration of this kind among pike and jack takes place yearly in the spring, in the Cam, up which river they come in shoals, as is supposed from the fens in the neighbourhood of Ely, where they are bred. This necessity for migration to situations favourable for their increase can hardly excite surprise, when we are informed that one hundred and forty-eight thousand ova have been taken from a single pike of the Rhine. The young fry, it is said, grow very rapidly, and attain to two pounds in weight the first year; they are also thought to gain a pound (some accounts say two or three) every subsequent year, which is by no means impossible, until they have reached a certain bulk, when their further increase is probably slow; for if their longevity be as great as is stated by some naturalists, provided that they increased the whole time in the same degree, we should have them rival the northern kraken. What the natural term of their lives is we know not; but we do know, by authentic records, that individual fish have been familiar to persons forty or fifty years. Their majority should be computed from the time they change the diminutive title of jack for that of pike, which is stated to take place when they have attained a linear measurement of twenty-two inches, or to a bulk equal to three pounds; but it is more common among Thames anglers to call all, of whatever dimensions, *Jack*.

SUBSECT. 1. *Angling for Pike and Jack.*

3592. *Having given the history and haunts of the pike*, it now remains to detail the numerous methods employed in his capture, some of which are sportsmanlike, many others are unsportsmanlike, and some there are which may be considered as between both, being principally practised either by the greedy, the needy, or the pot-fisher. The true sporting practices of the angler are often comprehensively called *trolling*, but doubtless erroneously; for some of them are by no means of the troll or rolling nature, but, on the contrary, partake of the leger or stationary character. The most experienced anglers acknowledge three methods of pike and jack angling: — First, *live bait fishing*, which is practised with line and float usually; sometimes the float is dispensed with when sinking and roving are pursued, by which either the roving pike falls in the way of the suspended bait, or the bait is presented to him. Second, *snap-fishing*, which is a plan devised to prevent the disappointments incident to the angler while trying for these fish, when they are not eager for what he has to present to them, or, in other words, when from want of condition the stomach is not in a state of digesting capacity, but when from its morbid state the pike is led to seize a bait without proceeding to gorge or swallow it. To prevent his rejection of it, however, when once laid hold of, the wary angler, by a sudden spring or *snap*, fixes his hook instantly into some part of his mouth, when depending on the strength of the tackle, he is not of necessity played at all, but, on the contrary, is at once landed by main force. This latter method may be pursued with either a live or a dead bait. Third, *trolling*, which is employed with dead baits alone, and usually on what is termed a gorge-hook. One of these being taken by the fish, he is allowed to pouch it at his leisure before he is struck. Some advocate one of these methods and some another, but no one can be said to deserve the name of a perfect jack-fisher who is not master of all of them, as there are times when each is found peculiarly appropriate, and when, in fact, neither of the others would be likely to command success. Trolling with a gorge-hook, every experienced angler knows, is, under some circumstances, labour thrown away; but change the practice to snap-angling, and success attends the efforts. Again, in still shallow waters, where the jack are small, and where there is but little cover to hide either the angler or his artifices, a long rod with fine tackle, and a lively bait floated at about mid-water, will attract fish which would have retreated from either the trolling or the snap bait.

3593. *Pike and jack angling* is a very fascinating sport altogether. That branch of it called trolling is particularly so, and is pursued by some anglers with astonishing avidity, to the almost total exclusion of every other branch of the art. Trolling owes much of its charm to the circumstance, that it keeps the practitioner in constant exercise: something is also due to it on the score of the masculine character, likewise, which it acquires from the size and determination of the prey, and the little compunction that is felt at capturing so merciless a destroyer. Nor is it a slight circumstance in its favour, that it can be practised to most advantage when there is a comparative dearth of other angling. The celebrated troller, Robert Nobbs, M.A. appears to have been fully alive to all the fascinations of this sport, when he says, that "if it be quick, scarcely any thing can vex or discompose the fisher; for he is then so attentive on his pleasure, that he takes little notice of those inconveniences which otherwise might be trouble and vexation: he then regards neither wind nor weather, and disdains those slight perturbations of cold, thirst, or hunger: he hath then gotten the philosopher's stone, which sweetens all his other crosses, and turns all disasters into gold. His sport is a cordial for all his distempers, and the pike (like a good water physician) cures him of all his diseases. If weary, his sport refreshes him; if cold, it warms him; if melancholy, it cheers him; if drowsy, it revives him; if in pain, it eases him; if sick, it recovers him: he then feels not the weight of his rod, nor is concerned that his tackling is no better."

3594. *The tackle used in pike fishing* is by no means the same with that employed for other ground or mid-water angling, and it therefore requires some distinct notice. In the chapter on fishing-tackle it was stated, that trolling rods would be separately described, when the methods of taking pike and jack came under consideration, as there were some peculiarities in their construction, which could be best explained with the practices for which they were particularly designed, and which pledge we will now attempt to redeem. Mr. Nobbs, with more truth than good taste, has observed, that if your hook and line be good you may make shift with an indifferent rod; and he seems to ridicule "those precise craftsmen who spend their time in admiring their instruments;" for he adds that he has "often put a ring on his walking-stick, and with his line thus mounted has killed his pike;" and no one doubts him. We also have heard a boy discourse sweet music on a Jew's harp; and yet, some how, Jews' harps have not superseded the use of the violin, which is "passing strange!" We shall not, however, have much difficulty in persuading the true angler that an appropriate rod will not only add to the success of his practice, but will render that practice more convenient and agreeable likewise. It will certainly be more professionally characteristic. In the rod or rods used for jack fishing, the method to be employed, the nature of the water, and the probable size of the fish, are all matters necessary to be taken into the account. In live bait fishing and in trolling, a rod of nearly similar strength and dimensions is required; but in snap-fishing one with greater strength but diminished length is generally employed. In a very wide water considerable length of rod is necessary, for the purpose of reaching the probable haunts of the fish, and making a cast over the reeds or sedges which frequently skirt the banks and edges of some waters. Without a rod of considerable length, the bait often falls short, and not only misses its object, but gets torn by falling within, instead of without, the reeds; and an opening between weed-beds (so likely a situation for jack) either in rivers or lakes, can seldom be reached without a lengthy rod. The probable size of the fish is to be taken into consideration when selecting our pike or jack rod. In the lochs of Scotland, such as Loch Alva, for instance, where Colonel Thornton tells us that he killed a pike wanting two ounces of fifty pounds' weight, one should not be inclined to use a rod either of bamboo or cane. Neither would it be wise to encumber oneself with a four jointed solid wood rod of twenty feet in length, and five or six pounds in weight, for trolling in the Lea or the Thames. There are some luxurious anglers, however, who must have every thing that can be possibly conducive to their sport; for such we really cannot limit the number of their pike fishing rods; but we do think, that with two for trolling, and one for snap-fishing, every angler may accomplish all that is usually required. There are many good artists, who by means of spare tops, &c. make a shift with one only, and some have versatility of talent enough by the help of a change of joints, to make this one act for several methods, as at snap and for trolling also; and in clever hands such an one may do the work of all tolerably well too. A proper rod, however, for the intended sport, not only adds to the pleasure of the practice, but likewise to its success. Notwithstanding all which, it must be conceded, that in pike and jack fishing it is more the address of the angler than the merits of his rod, that is essentially requisite to his sport.

3595. *The rod for live bait fishing* and that for trolling we may, with propriety, describe together; and with the advantage of a spare top or two, one rod may be readily made to answer both purposes. The general rod of the best makers may be also employed for either of these methods, where trolling is not the settled purpose of a journey, or the usual pursuit of the angler. If such be the case, we would recommend him to a rod of the following description. We may however premise, that the angler who is but partially initiated in any particular angling, may almost always be suited to his mind and purpose by application to any tackle-maker who is known himself to be a proficient in that variety of the sport. By describing his wants, and the nature of the waters where he is likely to fish, he may be furnished in the best manner; and we do hope that our directions will be sufficiently clear to enable him to judge whether he be properly served or not. The rod or rods, for both live bait fishing and trolling in the rivers of the southern parts of the kingdom, may be made throughout of bamboo; but a rod so made must be composed of the very best possible materials; in which case, in good hands, it will be fully equal to land any pike that does not exceed eight or ten pounds in weight. But where pike may probably be met with of heavier weights, the butt and top at least should be made of some solid wood; the former may be of willow for lightness, and the latter of any tough wood, hickory or lance wood, at the discretion of the maker, surmounted with one-third of whalebone.

3596. *For the lochs of Scotland*, the lakes and meres of English counties, and other waters known to contain pike from fifteen to twenty pounds or more in weight, the rod must be wholly formed of solid wood. But even here we recommend that the butt be bored, both to lighten it, and also to contain one or two spare tops, which it may very well do without weakening it. Every trolling rod should be fitted up with at least one spare top, but it may with still more propriety have two. One should be made shorter and stronger than the other, to vary the fishing according to circumstances, and likewise to enable the angler, at a distance from his stores, to have recourse to snap-fishing, if he find the jack dainty: this purpose may, however, be still more effectually answered by a second top made wholly of whalebone, and less than half the length of the other. When the angling mania has possession of a traveller, as it had of ourselves, it is of much importance that one article should be capable of being converted to many purposes. With such a rod as we have just described, he may troll in every water in the kingdom; nay, he may extend his fishings to the enormous pike of the Canadian lake, mailed over with rhomboidal scales, and not be afraid of coping with the largest fish. Captain Williamson says that the spare top of an ordinary bottom rod, which is occasionally employed for jack trolling, should be firm and not too pliant, so that it will bear a weight of four pounds hung to the hook without breaking. Mr. Salter, on this head, says, "I have two tops to my trolling rod, which I always carry with me, in case of breaking one, &c.: one is made very flexible with wood, and a whalebone tip about two feet long; to this, for strength and security, I have a ring on the wood part, as well as the large one at the whalebone tip: this top I always use when trolling with the gorge-bait, or when fishing with live bait; the other top is made wholly of stout whalebone, about one foot long: this I use only when snap-fishing, for which it is well adapted by its superior strength and stiffness." The length of the rod for live bait fishing and trolling may vary from fifteen to seventeen feet, according to circumstances; if its wood and workmanship can be depended upon, sixteen feet is in no case too much; and where extensive waters are fished over, one of seventeen or eighteen feet is convenient.

3597. *The ringing of trolling rods*, be it particularly observed, constitutes one of the principal peculiarities which distinguishes them from other rods, as will be evident when we consider that a free transit to the line is very important in pike fishing, both from the power of the fish, and the constant injury to the line without such freedom of motion. We shall, therefore, stand excused, if we be somewhat particular on this point. It is, under this view, necessary that the rings be strong and wide in circumference, and also that there be but few of them. Instead, therefore, of rings graduated from two feet to three or four inches distance from each other as they proceed, as in other rods, the longest trolling rod will require not more than five rings, and a shorter will be sufficiently furnished with four. Those, be it observed, are exclusive of the ring at the extremity of the top, which should be finished with a solid brass piece firmly fastened to the rod by a ferrule or screw, its opening being at a right angle with the line of the rod. Observe, likewise, that this top ring be broad enough, and that it have a surface slightly rounded, to allow the line to run freely over it. However, to prevent the possibility of the trolling line entangling itself around the movable rings of the rod, which is liable to happen when both fisher and fish are engaged in active exertion; instead, at that moment, of experiencing the perplexities resulting from loose rings whipped to the rod by a flattened piece of quill, or brass, or tin plate, after the usual method of ringing rods; instead of this, we repeat, let the professed trolling rod have a few solid rings only, as seen in *fig.* 537., attached to it, which will effectually prevent any entanglings. Such may be made to slip on or off at pleasure; but the practice of playing and landing the fish will be better done when the loops are fixtures, but set, as we have directed, wide apart. It is true that this renders a rod much less convenient for close stowage; but the critical angler will probably disregard this for the benefit of the free run afforded to the line, and the surety that no entanglement can mar his chance of landing his fish; when, however, this immobility of the rings interferes with the safety of the rod, or, by preventing its being conveniently packed, becomes very troublesome, the inconvenience may be obviated; while the benefits may be retained by having a metal ferrule adapted to each joint, with a fixed ring to slip on and off. A more humble substitute may be also formed from strong small curtain rings sewed to leather loops, which may be likewise passed over the joints of the rod before they are put together. The top loop may also be made to screw on and off, if necessary, to assist in close stowage.

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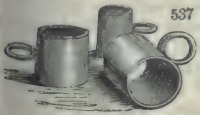

ROD RINGS.

A line reel is altogether left out by some pike and jack fishers, as we shall have occasion to observe; but a *running line* can never be dispensed with except it be at snap-angling, and there also it cannot be omitted without risk and disadvantage.

3598. *Trolling lines* are of various manufacture, as platted silk, Indian twisted silk, silk and hair, &c. &c.: but the platted silk line is, in every respect, the best. We have trolled with one of a light green colour, and thirty-five yards long, for some years, and it is now neither frayed nor rotten. When twisted lines are used, they should be such as are mixed with mohair; but all twisted lines of whatever manufacture are more apt to kinkle than others. In lochs, meres, and all extensive waters, it is necessary to make use of a line of fifty or sixty yards in length, and of a proportionate strength, as it must be remembered that the capability of resistance in the line is always in an inverse ratio to its length when extended. Mr. Salter recommends making the platted silk line waterproof by soaking it in linseed oil from which, after a few minutes' soaking, it should be pressed out and hung in the air to dry. The benefits derived are, that the oil, by drying, prevents the partial contraction of the fibres of the silk; neither does it, when it becomes wet, stick to the rod so closely, and altogether it runs through the rings with greater freedom. It is well to remember that the reel used for these occasions should be without a stop; it ought, likewise, to be large enough to hold a sufficient quantity of line with ease: the method of its application to the rod has elsewhere been fully considered. Of hooks, we would recommend that the angler have a variety, of different sizes and strength: few fishings vary more than this. It is also necessary to observe, that the temper of such as are bought be good; double hooks like eel-hooks are employed for the gorge, but they are commonly ready fitted up. There are, likewise, other double hooks, not of the eel kind, which often occur in our descriptions, and are also to be bought at the fishing-tackle shops: of such, those are best which are formed out of one piece of wire, because they are not likely to unsolder, and also because they present a loop for the gimp, gut, or swivel-hook to be attached. Double eel-hooks (*fig.* 486. p. 977.) without lead are often employed for live bait and snap-fishing: such are very strong, and are made with different angles of inclination. These are found the best for applying to the surface of the belly, as in the snap-baits, where their angle receives the ridge of both the back and the belly advantageously. The usual double fish-hook is formed as two common hooks would be, joined together back to back on one plane, the uniting wires forming a loop. These are well adapted for such snap-baits as have the skin penetrated at the sides, and in them it is necessary that the points, bends, and general plane of the hooks be flat. When either of these cannot be at hand, it is only to unite two single hooks of the kind by firm whipping, and the end is answered sometimes better than by the ready-made ones, as the angle of inclination of the points and bends can be made to suit the intention of the employer.

3599. *Swivel-traces* are essential requisites in pike angling of most kinds. There is a single and a double swivel-trace (*fig.* 538.). The single is thus made: to about ten or twelve inches of gimp add a hook-swivel at one end, and loop it at the other; the hook of the swivel will receive the loop also of the gimp hook, and the gut loop will receive the reel line by a draw-bow knot, which it will be prudent occasionally to examine, when the reel line used is one either of hair or of silk and hair, as such knots made in them sometimes loosen, but in the platted silk line this never happens. It will be necessary to add either three or four swan-shots to the trace (*a*), or otherwise a dip-lead, either of which should be fixed just above the swivel. Note here, that it is necessary to add some weight to all the fish bait beyond their own; the intention of which is, that the increased resistance to the water made by this means occasions an increase in the velocity of their spinning by way of counteraction. Sometimes this leading is of the kind just shown, by swan-shot; at other times it is a dip-lead, which is tubular, and runs around the line, being retained in its situation frequently by a shot either above or below it, or both. At other times a *bead-lead* is used, which is either oblong, oval, or otherwise conical, and has usually two links of minute chain attached to it, by which it slides along the line. The bead-lead is used for inserting into the mouth of the bait, where it is retained by sewing up the mouth.

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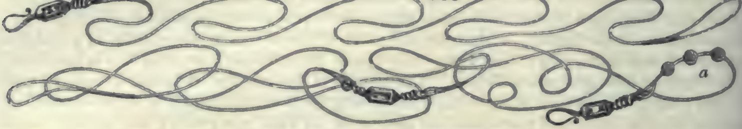

SINGLE AND DOUBLE SWIVEL-TRACES.

3600. *The double swivel-trace* (*fig.* 538.) is made by uniting two ten inch lengths of gimp by a box-swivel; to one end of this trace add another swivel of the hook kind, loop the remaining end, and finish by adding to the trace, by way of ballast, either swan-shot or a dip-lead. Note, that in the application of these traces it may be sometimes more convenient, instead of making a loop for receiving the hook loop, to whip the hook at once to the trace, and this may be more particularly proper where the water is shallow. On the subject of swivel-traces, Mr. Salter has an excellent practical remark, peculiarly applicable to all waters like those around our metropolis, as well as those of other cities and large towns, where the fish cannot be expected to arrive to any great size. He says, "In the summer months, when the waters get low and bright, from a continuance of dry weather, I have found, when I used traces made of the choicest twisted gut instead of gimp, and hooks also tied to twisted gut, that I have killed more jack and pike, either when trolling with the gorge, or when live bait fishing, than I could if I used gimp: this, you are to observe, is only during the summer, when jack and pike are not much on the feed, and the water is very bright—they then seem shy of coarse tackle; but not so in winter and spring, for they are then well on the feed, and the water is generally somewhat discoloured, at which times and seasons I believe jack and pike would take a baited hook if it was tied to a clothes' line or rope." We proceed now to the varieties of pike fishing, first printing a card-list of necessaries, for a help to the memory, agreeably to a previous notice: —

PIKE FISHING CARD.

Reel, or wheel, or thumb-winder; traces, swivel mounted; leaded gorge-hooks, various sizes, gimp or wire mounted; snap-hooks; hooks double, single, eel, common and barbel, plane and curved; spare gimp; gut; wax; waxed silk, thread, twine; thread lengths for tail tying; sewing needle for ditto; baiting needles; bead, dip, and tube-lead; nose-lead and coffin-lead; snap-tackle; live bait ditto, with float, or bottom-lead:

— ROD FOR THE OCCASION —

Knife, scissors, disgorger, drag-hook; landing hook; landing-net; live bait kettle, box, and spare lines; waxed strong twine, and rod splices; dead bait box; minnow-net, bank-runners, &c. according to circumstances and taste.

Sect. XX. *Live-bait Fishing for Pike and Jack.*

3601. *Worm-fishing for jack* is a species of live bait angling that we and others have occasionally practised with success, particularly where small jack are numerous in ditches and dikes, in marshes, &c. In our worm-fishings for jack we have found the brandling the most successful of all the varieties, and our practice has usually been to employ two at a time on a No. 3 or 4. hook: we however did not use the common wire hook, but the barbel or stronger kind, by which means the strength was increased, though the appearance was not rendered more formidable. And note, that this kind of hook may be prudently used in all the various methods to be detailed when single hooks of small size are required. Use a float correspondent to the nature of the water: and if that be moderately deep and at all ruffled, let the float be a small sized cork one; but when the surface is not disturbed, use a porcupine's quill, for the finer the tackle the greater the chance of success. Retire as far as possible from the banks, and strike tolerably quick, at least after the second tug is felt, by which time the jack has usually got the worm within the throat.

3602. *Live fish bait angling for pike and jack* is often confounded with live snap-angling, as if there were no distinction between them, but which there certainly is. We have often fished with live baits for jack in canals, ponds, fleets, and meres, when the fish by no means required to be taken at snap; on the contrary, two or three rods and lines might be managed by one person when placed at a distance from each other. Every fresh-water fish is devoured by jack and pike, with the exception of the tench; large perch also those gentry usually avoid, but that they will take them is known, for a perch has been found to choke a pike, and small ones are occasionally used with effect as jack baits. In the southern and midland counties, minnows, gudgeons, bleak, roach, dace, and chub, are the most common baits. In the northern parts of the kingdom they are likewise equally prized where they can be procured; where they cannot, the anglers make use of parrs, samlets, trout, eels, &c. &c. The minnow is sometimes employed as a live bait for jack fishing, but more frequently the gudgeon is made use of when a moderate sized bait is wanted; when a larger is required roach and dace are often chosen in the southern and south-western parts of England.

3603. *Of all these living fish baits* we have treated individually in the section of live baits, to which we refer the reader; we shall here, however, offer a few observations on them as particularly applicable to jack and pike fishing. The gudgeon is a killing live bait for jack; it is also very valuable in this fishing, as it will swim strong and live longer than most others, except the perch, and they are much on a par in this respect, but not so as to the estimation in which the pike or jack holds them; indeed, it is not often that either pike or jack take perch, as a live bait, though on the gorge it is taken readily. The gudgeon keeps low also in the water, whereas most other fish tire and sicken, and soon seek the surface, which is very injurious to the sport, as it is seldom that pike or jack will rise to the surface except they are very full on the feed; nor will they often take a spent fish. Minnows are likewise killing baits for moderate sized jack, but they soon seek the surface also. In canals, rivers, and brooks they are, however, prizable baits, as the lesser pike are very fond of them. It may be considered as a general rule, that large baits will tempt the most attacks, but that smaller ones will take the most fish; and a good sized gudgeon is a fair standard measurement for live bait where the pike are not enormous. In trolling, also, the size of the fish and state of the water must be considered: if the water be extensive, or if it be a little thickened and tinged, then a brighter and a larger bait is desirable: it is the same in snap-fishing likewise where both the colour and size of the bait stimulate to the attack, and the certainty of the snap insures the prize; but in live bait fishing such sized fish are to be preferred, as the jack and pike can most readily gorge.

3604. "*Live baits in pike fishing*," Captain Williamson observes, "generally answer best in mid-water, that is to say, they ought to swim half-way to the bottom, whereby they will be deep enough to be seen by the great fish that are on the feed. Sometimes your baits must be sunk lower, especially in very turbulent waters, or in boisterous weather; for in the former they are subject to be occasionally thrown near the surface; and in the latter, most of the great fishes, of prey especially, get into the deeps among the smaller timid fry, which on such occasions go down for warmth and quiet. Live baits are more appropriate to deep than to shallow waters; for even the more ravenous fish do not so much like to seize their prey near the surface, though when very hungry they will take it there, and even dart out of the water at their object, as we often see trout, &c. doing while in chace of small fishes. The angler will find on the long run that he will catch infinitely more fish at a good depth than he will near the surface; which is to be accounted for by the disposition to privacy and concealment natural to all fishes, especially to those which lurk in hiding places, and dart out suddenly on their unsuspecting victims, as well as to the variety of ambushes and shelters which the weeds and banks afford in those deep holes that are formed by falls of water, by eddies, or by the natural tendency of the soil in many places to wash away, until a harder surface resists the stream and forms a secure ledge, or cover, under which fishes can remain. Where weeds or other obstructions abound, live baits cannot be conveniently used, as they would, if half as active as they ought to be, infallibly entangle you; and even though you should be able to distinguish when you might have a bite, would occasion much risk as to the safety of your line."

3605. *To procure and preserve live baits:* ample instructions have already been given, (p. 1017.): whatever kind is used, there should be at least a dozen taken to the water; we have had double that quantity consumed in a day's fishing by accidents, and by the voraciousness of the jack, who often releases the fish without being ensnared himself.

3606. *A cork float* is to be used in most instances in live bait fishing, proportioned to the size of the bait-fish. Mr. Salter says that a float which will suspend about half an ounce of lead, and a bait of five or six inches in length, will be found the most useful. This is certainly correct for such waters as surround the metropolis; but in the extensive lochs of Scotland the proportions must be doubled, and also in some preserved sheets of water, where the pike are very voracious, and strike best at a large bait. When small baits are used, well twisted gut, particularly in summer, will often be found the most killing; but if good pike are in the water, and there are wind and extent of service, very fine gimp, saddened in its colour with coffee grounds, is to be preferred. Mr. Salter very justly objects to a long float for live bait fishing, because it not only is a more striking object in the water, which in summer is clear and often shallow, but also because its projections catch in the weeds as the jack retires to pouch the bait. and the shock thereby given alarms him, and he often drops it. Mr. S. therefore proposes to take away both the plug below and the quill above from the usual cork float, and passing the line upwards through the hole in the cork, to secure it at top by a large sized ivory cribbage-peg, which is to appear only one quarter of an inch above the cork. With all due respect for this excellent practical angler, we cannot but smile at the substitute; and it begets, by a natural association of ideas, a train of concomitants of mantling jugs, lighted pipes, and angling stores rehearsed, when enter cribbage-board, pegs and all, and here they are in place: but we would recommend, instead of the common long cork float thus dismantled of its appendages, that a lengthened pear-shaped cork be perforated with a gimlet, into the upper surface of which a wooden (not an ivory) plug be placed to secure the line. The plug being of wood will not be liable to slip out; and instead of being tapered to nothing as a cribbage-peg, its diameter should be nearly uniform, to fill up the opening equally from the top to the bottom. The young angler will probably think these minutiæ of Mr. S. and of ourselves unnecessary; but experience will convince him that they are otherwise, for if practised by those who are old in the school, it must surely be for some purpose: few seek trouble for nothing; they may therefore be supposed to have been adopted from a conviction, that the employment of them was beneficial; and that having been found so, they would, if described, prove advantageous to others. Under this view, when describing the art, the introduction of these minutiæ becomes part of the instructor's duty. It is in these lesser matters, and on the manipulations connected with them, that the finished angler shines out; and without ample detail the young angler, though he travel with the principles gained from the usual authorities, may be years in working out his way to attain proficiency: but with such a work as Salter's, and with water and fish before him, it is a man's own fault if he be not a good bottom fisher in a twelvemonth.

3607. *Swivel-traces* are proper for live bait fishing, unless there be a certainty that the water is only stored with very small jack, when a double gut line and small cork float, shotted in the usual manner, so as to poise the cork to a proper depth, will be sufficient; but in all other cases it is prudent to use the single swivel-trace (*fig.* 538.).

3608. *The live bait is hooked for fishing in various ways.* One of the most simple and least painful, is to pass the hook under the back fin, just even with the roots of its rays, including a small portion of its skin only, by which means the fish will not be materially injured, and will continue to swim strong and show itself. In this method it has been found that the struggles of the fish, or the violence of the striking of a jack, has often forced the bait from the hook; to prevent which a thread has been carried round the point of the hook on one side, and being passed under the belly has been fastened to the shank of the other side, but this deforms the fish and injures its vitality; it is therefore not an eligible practice; its object may be attained in a much more effectual manner thus,—instead of one make use of two strong but small hooks, No. 3, 4, or 5. according to the size of the bait; hang each of these to a small piece of strong gut of three inches in length, and loop each end. Introduce each of the hooks, a very little removed from each other, under the dorsal fin (*fig.* 539.), one on one side, and and the other on the other side; this done, if they are critically placed, these loops will meet so exactly as to be received into the loop of the trace line without dragging one side more than the other. This method, we can venture to promise, will prevent the escape of the bait, and is, as we believe, extremely effective in taking the prey also.

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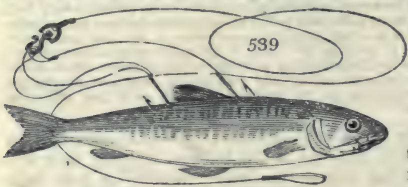

MINNOW BAITED WITH TWO HOOKS.

3609. *Hooking by the lip* is also a favourite method with some persons, but it distresses the fish much, and if the hook is allowed to pass through one lip only, it is seldom secure. We have seen two hooks used, size No. 5., each whipped to an inch of gut, one of which was passed through the upper and the other through the under lip, and we had reason to think that both the above disadvantages were obviated by the method.

3610. "*The double bead-hook,*" Mr. Daniel says, "is used by putting the lead into the mouth of the live bait, and sewing it up; the fish will live some time, and, notwithstanding the lead, will swim with the support he receives from the line, with nearly the same ease as if at liberty: this is the most successful way of tempting the pike." The practice is objectionable on the score of its inefficiency, for a gudgeon thus served (which is the best way to try it on) will certainly live some time, although its mouth be sewn up, the water applying itself partly through the mouth and partly through the gill openings to the gill fringes, and thus furnishing the blood with atmospheric air: but we have also seen, as Mr. Salter observes, that when this method has been employed, although the bait could not escape, yet when struck it was commonly rejected, the bends of the hooks reaching the fish immediately when he prepares to turn it, alarm him. It is still more objectionable, on the score of its continually catching hold of the weeds, thus greatly interrupting the sport, and rendering this method very harassing. The formation of the bead-hook does not require much detail; the figure (p. 1113.) will show that it is a double hook whipped either to double twisted gut, or to a piece of gimp eight or nine inches long, including in the whipping a conical or bead-lead, hung by two or three small links of chain.

3611. *A double hook,* without bead and differently entered, is advocated by Mr. Salter as the most killing method, and to be preferred to every other. As far as its killing qualities go, it is certainly very effective; but without pretending to any unnecessary or extraordinary sensibility, we never could, with any degree of comfort to ourselves, *empale* the bait in the manner here described, although in the few trials we have made of it, its killing qualities appear to be what Mr. Salter and others have alleged. The method employed is as follows: take a double hook of such a *spread,* that the barbs will not project beyond the upper and under surfaces of the bait for which you intend it; and to fulfil this intention, the necessity of being furnished with double hooks of different dimensions is apparent. When, however, such variety is not at hand, two common hooks of the proper size being firmly whipped together, back to back, will answer the purpose. We hardly need observe, that a deep-bodied fish, as a roach, &c., will present a larger surface for the spread of the hooks than one of a rounder figure, as a gudgeon. Attach to the double hook about eight or ten inches of either gimp or strong double gut, recollecting that gimp will last much longer than gut, which if not broken often beomes frayed, and therefore requires more frequent repair; but on the other hand it is finer, and consequently often more killing; circumstances, however, must direct the choice.

3612. *To arm the bait-fish,* proceed as follows: — Having first made a sufficient opening for the purpose with the point of a penknife, enter the baiting-needle hooked to the gimp directly under the skin from the shoulders (see *fig.* 510. p. 1019.) towards the hinder extremity of the back fin, at the root of which bring it carefully out again; but avoid injuring the flesh during the operation, and the bait will swim strong and well for a considerable time. There is one inconvenience in this method, which is, that the hooks after a few casts are apt to tear away the skin, and injure both the liveliness and the appearance of the bait; to obviate which Mr. Salter recommends that a No. 9. hook be tied to about an inch of gut looped at its unattached end. This loop he passes over the gimp length, as seen (*fig.* 511.), and fixes it into the under lip of the bait's mouth, which, he says, prevents the stretching force of the double hook from tearing away the skin or flesh. As we think it not improbable (for we never tried this method) that the lip hook from the placing of the gimp hooks may interfere with the action of the gills, we recommend that it be carried across the head, and fixed in the contrary nostril.

3613. *The bait being properly fixed,* cast it lightly into the water with the line drawn out to two-thirds the length of the rod, observing to make the first cast *in shore,* but be as much concealed as possible from view. If success does not follow this, extend the throw further into the water, and to do that with effect, give the impulsive swing of the bait with the same length of line as before, but have in addition a yard or two of loose line in the left hand, which, as the bait flies forward, loosen quickly from the hand, and as it arrives at its destination drop the point of the rod, which will ease the bait into the water without injury to itself, or alarm to the pike. The attempts of the live bait to make for the weeds or the shore, must be counteracted by drawing it back or by giving it a new direction, and as it flags in liveliness, *stimulate* it by shaking the rod a little, which often *stimulates* the jack also to strike at the bait. In drawing up the bait to remove it to a new situation, observe to do it gently, and at the same time watch the water, for it is not at all uncommon for a jack to follow on its attempted removal. If any thing of this kind is perceived, by no means remove the bait, but lower it again into the water, and begin moving it quickly at a few inches below the surface backwards and forwards. In all cases keep the float in sight, but avoid showing yourself if possible, particularly in the summer months, and when the weather and water are both bright. At such a time to increase your small chance of sport, try to get the sun before you and the wind behind: the former you might well dispense with altogether, the other will prove your best friend: but if there be sun, you must at least take care that it do not reflect either your own shadow, or that of your rod on the water. In the months of February, October, and November, this may be of little consequence; but it is otherwise in the spring and summer months.

3614. *Be careful not to mistake the motions of the bait* for those which are made by the pike or jack when seizing it. With the experienced angler there is no danger in this, but one less initiated might be apt to fall into the error, particularly as the mere sight of the jack will sometimes make the bait throw itself out of water to avoid its dreaded foe. The proficient at such a time will do nothing more than gently move his bait, as though it were going to leave the spot, which alone will sometimes occasion the jack to seize it at once. The seizure of the bait by the pike is marked by the float, which is not thrown up, but, on the contrary, is drawn violently down; and the water is likewise observed to undulate, unless the bait be seized at a considerable depth. Be prepared for this with a free line as regards the reel, it is also a good plan to have in the left hand a yard or two of loose line to give out as the pike runs, which is infinitely preferable to allowing it to be pulled by the fish himself from the reel; which alone, with a pike not well on the feed, will cause him to reject it. Whatever line therefore is required in the progress of the fish to his hold or haunt, veer it out by the hand, and such hold is seldom far off, and he will, when there, probably stop to gorge the bait.

3615. *In striking let not impatience tempt you:* wait until you are certain that the pike has actually gorged the bait; otherwise your slight hold on both bait and prey will tear away, and you will lose both at the same effort. The pouching time is by no means definite (see *Trolling*, p. 1112.), but is regulated by circumstances: thus, having satisfied yourself by the previous stillness of the pike or jack, that he is gorging it, and by his again moving out from his retreat (which signal you must look for), that he has actually done so; give your line a smart hand stroke, which will fix the barbs into the maw beyond the power of ejection.

3616. *Of live bait fishing* however, as compared with other methods practised, it may be said, that, like many other affairs, it has its bright and its cloudy aspects. It is well adapted to still water fishing, as well as to quiet fishers, particularly to such as are partial to float angling. It requires little exertion, and may be pursued with more rods than one, which with some persons is a great recommendation. In the spring, before aquatic plants have accumulated, and late in the autumn, when they have rotted off, and a flood has cleared away their foul remains, live bait jack fishing is a pleasant and even a productive practice. But it must be acknowledged to be very inferior to dead bait trolling in almost every point of view — it is less ingenious, less active, and not so fertile of sport. — It is also very inconvenient in weedy waters, and waters of this character are those most resorted to by jack and pike.

3617. *Of the frog as a live bait* for jack and pike, our own opinion as to its value, and to the methods of using it, appear in the section on living baits, to which we refer the angler, contenting ourselves with cautioning the practitioner not to be misled by the directions inserted in many of our angling treatises. Even Mr. Daniel, neglecting to use his own discretion, and contenting himself with literally copying what he meets with, directs the arming wire to be put in at the frog's mouth and *out at his gills!* query, Where are they to be found?

3618. *Of flies as baits for pike*, no instructions are necessary; instances are however sufficiently numerous, that these fish will occasionally take them. We ourselves so took a jack in the Grand Junction Canal on Boxmore, Herts; but whether they are caught at by these fish from wantonness, or from the exercise of their natural voracity, it is certain that the practice of fly-fishing for them has not yet appeared among our angling statutes at large. Mr. Daniel, however, not only thinks differently, but introduces a figure of the jaws of a pike taken from "Loch Ken near New Galloway in Scotland, with a common fly, made of the peacock's feather: it weighed," he says, "seventy-two pounds;" and we are further told that the skeleton of the head is still at Kenmore Castle. Mr. Daniel seems so convinced of this fact (and if not very probable, it is certainly not impossible), that he offers a long description, proper to allure other salmon, made of course of very gaudy materials, such as pheasants', peacocks', or mallards' feathers; the brown and softest part of a bear's fur; the reddish part of that of a squirrel, with some yellow mohair for the body. The head is formed of a little fur, some gold twist, and two small black or blue beads for the eyes; the body must be framed rough, full, and round; the wings not parted, but to stand upright on the back, and some small feathers continued thence all down the back to the end of the tail, so that when finished they may be left a little longer than the hook, and the whole to be about the size of a wren. A fly thus made, he avers, will often take pike, when other baits are of no avail, especially in dark windy days; the fly must be moved quick when in the water, and kept on the surface if possible. Several sorts of these flies we know are kept, and are to be had at all the fishing-tackle shops. As we neither deny nor doubt the fact that the jack will, on some occasions, take the fly, we yet suspect that it is not either the colours or the form of the fly, but its size and supposed resemblance to a small bird or mouse, which prompts the pike in the Scotch lakes to rise at it. The young of the aquatic birds are so regularly devoured by these fish, and even swallows when dipping are so frequently darted at by them, that we need not be surprised if any thing flying over the water be caught at in this way. Now, when we were last journeying northward, we were assured that the largest pike of the lakes do rise to flies; it did not, however, often occur; but nevertheless it was stated to be a well-known habit of the pike to throw themselves out of the water after large flies.

Sect. XXI. *Snap-bait Angling for Pike or Jack.*

3619. *The snap-bait variety* is seldom chosen in pike fishing by preference, but is rather forced on the fisher in the spring and summer months, when pike and jack are not much on the alert in taking baits. On the contrary, if one of them does seize a bait at these times, he is apt not to pouch or gorge it, but after roving about with it in his mouth for some time, he ejects or *blows* it out, as anglers term it. Snap-fishing, we may add, intermixes itself with live bait fishing, and with trolling also; or rather, on some occasions, we add a snap mode of striking the pike to the other methods; we have therefore live snap, and dead snap, and now and then snap-hooks are likewise added to a gorge-hook in trolling, and that with perfect success. In all cases, therefore, if the bait-hooks are such as can be depended on, and the rod be sufficiently strong, the methods already described, and such as are to follow, may be made snap-fishing by simply striking the fish at once, instead of allowing him to take the bait away to his hold: the principal, and indeed the only difference being, that when we go out with the intent of snap-angling, our hooks are large, and ought to be strong also, and our rod is strong and short.

3620. *Live bait-snap* (*fig.* 540.). The most simple of these, and yet one of a very excellent kind, is here represented, and may be readily made from an inspection of the figure, and attention to the following directions:—Take two strong hooks, of size No. 3 or 4., according to the strength of their make, as well as to the size of the bait: tie each to about an inch and a quarter of fine twisted wire, and again tie these two wires together, including in the tie a hook, No. 8 or 9., and also eight or ten inches of gimp, which loop at the other end: but in the tying, place the large hooks contrarywise, so that one may point towards the head, and the other towards the tail of the bait-fish, which will greatly increase the chance of success when using it. To apply this, enter the small hook under the back fin, and allow one of the two large hooks to apply itself close to one side of the bait, and the other to be similarly placed on the other, but with the direction of their points reversed. We have often, even when the spring-snap has been in our book, made use of this more simple plan in preference, particularly where our only baits were gudgeons. A good sized roach, or dace, can conceal the spring-snap, but it is hardly applicable in any way to a small fish.

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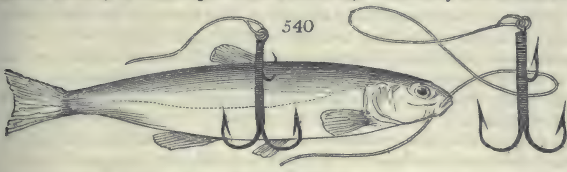

LIVE BAIT-SNAP.

3621. *Dead bait spring-snap* (*fig.* 541.) This machine can be applied either to the dead or to the living bait; it is, however, we think, more applicable to the former, as it requires a sufficient hold to be made on the bait to offer a resistance equal to springing the snap, or the benefit is lost: such a hold is injurious to the live bait, and soon destroys it. No bait answers so well for the placing of the spring-snap as either a roach, bream, or perch, on account of the breadth of their figures; but to either of these, and to the roach particularly, it can be readily and conveniently attached. Choose a fresh dead roach, of from three to five or six ounces; insert the small hook of the spring as represented in the figure, so as to take a firmer and deeper hold than when applied to a living one. If the apparatus, from its size, must project beyond the line of the fish form, let it be above; but by no means allow the bends of the hooks to appear under the ventral surface. The side figures, exhibiting the snap sprung and unsprung, furnish a sufficient exemplification of its mode of action: in seizing the bait, the pike or jack draws the hooks out of the detaining frame; these in consequence immediately expand, and fix themselves into the jaws of the fish which has seized it. It may be well to remark that Mr. Daniel's plate exhibits three other varieties of dead snap-hooks, the first having two, and the second four hooks; consequently, although the trouble by the latter is somewhat increased, the chances of success are multiplied. The third, it will be seen, has six hooks. (See *Daniel's Rural Sports*, vol. ii.)

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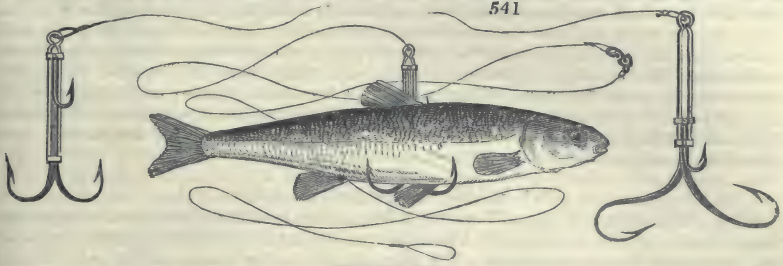

SPRING-SNAP BAIT.

3622. *Of the hooks in snap-fishing*, we must again say, it is of great consequence that those to strike the pike be so placed as to easily clear themselves; if therefore it is expected of these hooks that they shall support and play the fish, and yet be ready at a moment to disengage themselves from this attachment, then too much is expected of them; and when they ought to be *free*, to strike at once into the mouth of the pike, they are apt to be *buried deep* in the body of the bait. It was purposely to receive this strain on the bait, that we added to the traces a small hook, which then left the large hooks at liberty to disengage themselves: for on the small hooks the stress of the action of playing the fish was then altogether placed. It is on this principle that snap-baits in general should be formed, and where they have not some sustaining hooks, independent of the snap-hooks, then they ought never to be passed through the centre of the body of the bait-fish, but superficially under the skin only, so that when the pike strikes, the skin of the bait may readily tear away by the united forces of the stroke of the angler and his prey, the consequence of which is, that the hook or hooks immediately disengage themselves from the bait, and penetrating the mouth of the pike, they retain him.

3623. *The methods of snap-baiting are very numerous,* and the tackle employed is extremely varied; but we believe we have exhibited all that are necessary. Of these, two are somewhat novel, and will be found more than usually effective, and as such we recommend them. From the *principles* laid down, the *plans* of baiting may be varied to an almost endless extent. The *tackle* employed is likewise equally capable of alteration: but two intentions must govern both, which are *quickness* and *strength*. The rod should be short and stiff, to allow of a very sudden and forcible stroke, and to enable the angler to land his fish without loss of time. The line must correspond in strength with the rest; its length, it may be remarked, is not of much import; some snap anglers even use no reel. The hooks must be strong; in general, they are large also, which we think they ought not to be; on the contrary, we recommend that smaller hooks be made use of, particularly in the live bait snap; but that no diminution of strength may occur, we advise that they be made of stronger wire, after the manner of barbel hooks. In the dead snap it is usually thought of little consequence that the hooks project and show themselves beyond the line of the bait, and it is certainly less important here where the rush prevents the pike from attending to minutiæ. It is, however, much better to have every thing, even in this method, as much concealed as possible; and we are convinced that the angler who is most particular in this respect will catch most fish. Of the methods of procuring and keeping live baits, we need say nothing here, but refer the angler to the section on that head. Some anglers cut away the fins of the dead baits, which we rather recommend, more because they are apt to hang in the weeds than for any other reason. Where it is done to spin or turn the bait better, the opposite fins on each only should be removed. When your bait is cast into the water, the attention should be immediately engaged by grasping the rod firmly, and keeping yourself in readiness to seize the first intimation of a bite. If the day be warm, and near its meridian, and particularly if you are angling in the early summer months, try the shallows, the edges of pools, and the sides of sedges, reeds, and weed-beds. If it be cold, try the deeper parts; and when a breeze favours the efforts, rove extensively in every direction. When you feel a bite strike quickly and forcibly, which done, if you find your fish secure land him at once, or play him as you please: the former is the safer method, as a mouth-hold is less to be depended upon than the stomach-hold gained by the other methods.

Sect. XXII. *Trolling for Pike or Jack.*

3624. *The trolling rod* (*fig.* 477. p. 964.), has already been described as one which ought to combine the qualities of strength with lightness, and yet be of sufficient length to give the bait the benefit of extensive scope. The line should also be strong, pliant, and even, and in sufficient quantity. We strongly recommend it to be wound on a full sized pillar-reel or winch, in preference to using a thumb-winder, bank-runner, or to trailing it on the ground, which are the principal of many modes in use for veering out the trolling line; but for general purposes none equal the winch or reel. We have known some anglers carry their line in their pocket: others have wound it round their hat, and were therefore forced to deposit their *castor* on the ground before they could prepare themselves for a *run*. Another that we saw was singularly accoutred, with a strap around his thigh: to this was ferruled an enormous wooden grooved wheel, around which he wound his line by a peg, and he did it in a manner which appeared to answer his purpose sufficiently *well;* but it looked sufficiently *ill:* we suggested to him that he might transfer this wheel to his rod after the manner of the French, which he had not before thought of. Mr. Nobbs tells us, "you may wind the line upon a roll that turns upon a ring, with your finger in it, having no more in your hand than you make use of, so you may unwind it at your leisure. Some draw it after them at length, which I approve as a very good way, if there is no impediments, as shrubs or bushes, to interrupt or make them go back; it will be ready to cast out, and you may throw it the farther: but if you hold a great deal loose in your hand, it will be apt to knot and entangle. Some object to drawing the line upon the ground, lest it wear out: but it sooner dries, and when it is dry it can take but little harm. Besides, a pike will sometimes be so hasty and furious, that he will scarcely give you leave to unwind fast enough; and therefore the surest way to trepan your fish is to have your line at command, and in complete readiness."

3625. *The plain pillar-reel* is certainly the safest for very heavy fish; but nevertheless, if the angler uses a multiplier on the best principle, it will wind up in all ordinary cases without clogging, and as fast as it can be wanted. For the giving out of line it will of course answer, as the hand can readily assist it. The ground line however may be used with advantage when, instead of a trolling rod, a ferruled stick is employed, of three or four feet long; and it is more useful sometimes even than a rod in trolling from a boat, or from the high bank of a very wide river. From such a height, with the trolling stick in the right hand, a quantity of loose line lying by the side, in regular coils, when *baited* and being *passed* through the ferrule or end ring, and the bait dangling on a portion of two feet in length, take hold of this part with the left hand, and now by means of the right hand, which upholds the trolling stick, swing the bait-fish until it has gained its momentum; then deliver it well from the hand in any direction you choose, guiding the passage of the line through the ring by the inclination of the stick and the aid of the left hand. We have known a line carried in this way nearly forty yards, and we believe it can be projected even to fifty, whereas it would be difficult to deliver it to any such distance with the trolling rod. But this method is seldom practised by those who angle to kill their fish in the most sportsmanlike manner; for it allows no playing of the pike, or at least none of that masterly struggle for victory which a strained line and yielding rod give. A rod is also infinitely preferable for the numerous diversities which a river presents: by its means the bait can be lifted over sedges, directed into pools, and dropped into the water-runs between weed-beds, more readily than by any other method. A few slovenly fishers likewise troll with nothing more than a pole with a forked top, which is used after the bait has been cast out, to direct its progress, and to lift it here and there as occasion requires. We knew a man who shaved himself with a hatchet, and we should opine that such fishing and such shaving might, in an exhibition of rough contrivances, compete for the palm.

3626. *Swivel-traces* (*fig.* 538., p. 1106.) are necessary in trolling, for by their means it is that the bait revolves quickly, and answers to its character of a *troll* or *rolling* matter, which motion assists greatly in attracting the notice of the predaceous fish. The swivel-traces used with the gorge-hook require no leading, the hook being of itself sufficiently weighted, in which these traces only differ from those already figured. Some troll wholly without a trace, but we are certain that it is to the manifest injury of the spinning of the bait, and we therefore strongly recommend its use. By means of the swivel-hook a great convenience is also obtained as the tackle becomes so readily disengaged; but it is to be noted that, in releasing it, the ardent angler sometimes is violent and snaps his swivel, which is another reason why no prudent one should go without spare traces, or indeed without duplicates of all the minor articles of fishing apparatus.

3627. *The gorge-hook tackle* is the leading feature in the practice of trolling. Varieties of these are kept at the shops of all sizes and figures; and before we proceed to describe the gorge apparatus generally, we shall hint that the necessity of having several sizes of these hooks is apparent, since the trolling bait will include fish from the dimensions of a minnow to those of a roach of four, six, or even eight ounces. It is likewise not only necessary that these hooks be kept in readiness of different sizes, but also of different figures, appropriate to the shape as well as to the size of the bait-fish. The minnow and the gudgeon and perch are sufficiently rounded in their bodies to conceal a round leaded gorge-hook, corresponding with their size; but for the bleak, and both roach and dace, which are more flat-sided, we recommend that the lead be flattened somewhat, and be more oval than round. Mr. Salter judiciously observes, "I generally remove about a third of the lead from the brass of those hooks which I find kept ready for sale at the fishing-tackle shops, because I have found, when the lead lies nearly the whole length of the bait-fish, and especially of a bleak or thin roach, that when the jack strikes it, his teeth pierce through the flesh, and touch the lead; he then immediately drops the bait. Now, by removing a part of the lead as above directed, the angler will find the remainder to be sufficient for sinking, &c. his bait, and it will lie at the bottom of the throat, or only a little lower; and as jack generally seize their prey by or across the middle, in such case his teeth seldom come in contact with the lead; and he then, without fear, retires to his haunt, and soon pouches the whole."

3628. *The general formation* of the gorge-hook (*figs.* 511. 542.) is that of one double hook, or of two single eel-hooks joined (*a*) together, with a continuation from their shanks of a piece of twisted brass wire, the end of which usually forms a loop (*b*). The union between the hooks and brass wire is hid by an encircling of lead, which is sometimes finished off in an octagon shape, and sometimes it is squared; but it should, however, by no means be at all angular, as the sharp edges would not be unlikely to meet the mouth of the jack ere

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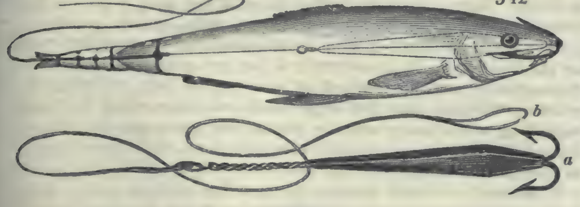

GORGE-HOOK.

he pouches the bait, and to make him reject it. To prevent the pike jarring his teeth against the wire of the gorge-hook, usually continued to the tail of the bait, some anglers use a short wired gorge, the fish being kept straight by the gimp, which is continued to the tail, and there tightly bound with waxed silk, as shown in the cut (*fig.* 542.). Nor must we omit this opportunity of noticing the readiness with which Mr. Bowness, sen., of Bell-yard, supplied our artist with this and other improved articles to copy from. To the loop in the wire attach about eight inches of gimp, making a fine loop at the other end of it, to hang on the swivel-hook of the swivel-traces (*fig.* 538.).

3629. *To bait the gorge-hook*, take a baiting-needle, and hook the curved end to the loop of gimp, to which the wire is fastened; then enter the point of the needle into the mouth of the bait, and bring it out at the middle of the fork of its tail; the lead will then lie concealed in the bait's belly, the barbs and points outside turning upwards. To keep the bait firm on the hooks, it is necessary to tie the tail part fast to the gimp with white thread; but let a needle and thread be passed through the flesh on each side of the bait, near the tail, which is a much neater way than tying round the outside. Be it observed, the hooks should invariably point upwards, as they are seen in the figure. This we recommend, though it is the practice of some anglers to turn them downwards. Observe, also, that they do not stand too far out from the sides of the bait's mouth, otherwise they will prove troublesome among weeds, and may probably either prick, or be perceived by the pike. The single gorge-hook is chosen by some good trollers, and must not, therefore, be lightly condemned, although we have ourselves always employed the double one. Nobbs says: — "I commonly made use of the single hook, which strikes as sure as the other. The double hook hath one advantage above the other, that if it meets with such resistance in the water that it loses one side of it, the other part, with a little filing, may be still as serviceable as it was before: it is more troublesome, in the water, and more apt to check and take hold of the weeds and roots; it is best for a great bait, for if you put a small and slender bait on a double hook, it will hang out and bear off so much in the bending, that a pike may not only discover the delusion, but if he takes it, it may check him in his feeding, and so hinder him from gorging it." Some anglers sew up the mouth of the bait after they have introduced the gorge, which we consider as not very material: the lips certainly conceal the bends of the hook rather better when sewn up than when left open, which is all the advantage gained.

3630. *The method of holding the rod* differs in the practice of different anglers; some grasp it firmly in their right hand, and depend on the strength of their arm for delivering the bait out to its extent: but we apprehend that much the better method is that of resting the butt against the hip, thigh, stomach, or wherever a convenient support can be obtained (we always used our hip for the purpose), by which much exertion is saved, the bait can be cast much wider; and when the angler is accustomed to the habit, he may, by this means, direct it within a few inches of the spot he aims at. The rod placed, and the bait swinging, on such a length of line as can be managed, retain within the left hand a yard of it lose, which as the bait is cast, gradually let run off the hand, directing it rather slantingly; by such means it will shoot diagonally forward, with a natual appearance, impelled by the weight of the lead. When delivered, begin to move it after the manner of the motion of a fish about mid-water, observing always to avoid removing it quickly from the water for a new throw, for both pike and jack often follow the bait and seize it at the moment it rises towards the surface, fearful it is going to throw itself out of the water to avoid the pursuit.

3631. *In the practice of trolling*, a due degree of caution must be observed throughout. Avoid alarming the fish by unnecessary noise, and keep as much concealed from view as possible; the length of the rod will assist greatly in this particular; by it the angler can reach over the bank without approaching too near. The sides of every water should be first tried to the right and left; this done, proceed somewhat further in, but avoid making either much noise or much splash in the water, by the cast of the bait: try every spot, but do not dwell on any, or try it twice, once showing it is usually sufficient for the most likely places. Very much of the success in trolling depends on the method of displaying the bait, which, of course, should represent the natural actions of the fish, and is best effected by first giving to the bait a slanting direction on its entering the water, and keeping it in the same position by means of the hand. Never allow the bait to be still, but keep it ever in moderate motion, not in violent agitation, as is too apt to be done, which practice, we suspect, is more detrimental to sport in trolling than is imagined, for we have had runs by trolling more slowly over the same spots which others had but just quitted without one. A little habit will enable the angler to vary his methods of showing his bait, according to the extent and nature of his water. Where there are large weed-beds, intersected by openings between their waving masses, or where large aquatic plants rise up in patches, there the bait must be carefully dipped directly down, to avoid entanglement; and there the angler must be prepared, not to mistake the check given by the weeds for a real bite, which it often very nearly resembles. When such a check occurs, pause a few seconds, and if all continues quiet, draw the bait gently towards you; when, if the resistance is obstinate, and yet tremulous, a jack is at it, and your moving it will most probably induce him to drop it, or otherwise gorge it. Do the same if the bait move slightly forward, with a renewed check, for there is then more certainty that something is at it; after this, if it remain a dead weight on the hand, it is probable that the jack has quitted it, and left the hooks entangled in the weeds, which is by no means uncommon in these cases; you may, therefore, now draw at it with a little more force, which will certainly inform you of the nature of the resistance, and yet allow you time to retrace your steps, if a jack be there in earnest.

3632. "*When you have a run*, or, in other words, when a pike or jack has seized your bait, lower the point of the rod towards the water, and at the same time draw the line gradually from the reel with your left hand, so that nothing may impede or check the progress of the fish in carrying the bait to its hole in order to pouch it. Do not strike until the pike has had possession of the bait about seven minutes, or till the line shakes or moves in the water, then wind up the slack line, and turn the rod, so that the reel may be uppermost instead of underneath, then strike, but not with violence." Taylor offers an excellent practical remark on striking when he says, "The pike will, as soon as he has seized a bait, run to his hold to pouch or swallow it; allow him therefore five minutes to do so (unless the line slackens before that time, which is a signal that he has already done it), and then strike. But if after he has run off with the bait, he makes scarcely any stay with it at his hold, but goes off with it again, you should not strike him till he has rested a second time, allowing him still about five minutes; but if he should run off a third time before the five minutes are expired, draw a tight line, and strike him instantly." Captain Williamson observes, that "when you see a great number of very small bubbles rising from the spot where you know, by the direction of your line, the jack is lying, you should forbear from striking, it being a certain sign that he has not pouched your bait."

3633. *The pike being struck*, the first directions continue, "If it should be a large fish, and the place open, give more line, and do not pull hard at any time, unless your tackle should be in danger of entangling among weeds or bushes; and when this is the case, the utmost caution is necessary, lest the rod, line, hook, or hold, should break. When completely exhausted and brought to the side, take it up with a net, or fix a landing hook in it, either through the upper lip, or under the lower jaw; or, if in want of either of these, put your thumb and finger into its eyes, which is the most safe hold with the hand." It is also most judiciously remarked by Mr. Salter, "When you have hooked a jack or pike, and played him till he is quite exhausted, and you are drawing him ashore, make it a rule to float him on his side, and keep the head a little raised above the surface of the water, that the nose or gills may not hang to, or catch hold of, weeds, &c. while you are thus engaged bringing your prize to the shore; for sometimes you cannot avoid drawing it over or among weeds; and I have seen a pike touch and get entangled this way, and before it could be disentangled, it recovered from its exhaustion or stupor, and occasioned much trouble and hazard before it could be again subdued."

3634. *The seasons for trolling* are so well laid down by Nobbs, from whose writings so many anglers have derived their first instructions, that we will present his remarks as they stand recorded:—"Though the depth of winter cannot be recommended for angling, yet there are some days in December or January that a man may pick out to stand two or three hours by the river side, but the weather must be open and temperate: the great fish will be soonest enticed with the bait at that time of the year, because they lie deep, and are not so careful of their own preservation. There is another great advantage for the winter troller,—the weeds are then down and rotten, which are a great hindrance both against throwing the bait, and in keeping the fish from the sight of it. Though a pike delights much among the weeds, and usually makes his abode there, yet it is very difficult to take him there, except it be with the snap; for if you give him the liberty of running and playing with your bait, he winds himself so fast about the weeds, that you may be in some danger of losing both your fish and hook, if your line is not very strong: if you take a snap, you will be troubled with them. for they are great enemies to that. Trolling in January, even on favourable days, when the season is moderate, and the water in order, which is rare in this month, is but labour well nigh lost; for if it is not a flood, yet the ditches and brooks are commonly so rank and full, that it is but indifferent fishing. February presents better prospects, and on some days these fish take a bait eagerly. March, too, is very seasonable to the troller, excepting the time of spawning, which usually begins about the middle of it, except the spring is very forward, and then they will be disinclined towards preying. The snap is now the most taking way; for if you fish at pouch, you may have many runs, but scarcely take one except it be a male fish. These two months therefore will try the pike-fisher's patience, even though he be wind and weather proof. April will however, in all probability, make him amends for his former sufferings."

3635. *The autumn season*, Nobbs considers as affording good sport, which commences with October, "the weather being then temperate, and the weeds, which were strong and high before, are now dying and falling to the bottom. The rivers are then generally low, which is a great advantage, because the fish are more easily found in their harbours; they leave the shallows and scowers, and lodge themselves in pits and the deepest places. A pike is now very firm and fat, having had the benefit of the summer's food: and if the weather continues open, and not extraordinarily cold, you may take in part of November, which will add much to your sport, because the weeds will be more wasted and rotten; but if a flood comes in October, or the beginning of November, you may lay aside your tackling for that season; for great rivers (like great vessels), being long in filling and slowly mounting to their full height, are again long in falling and settling, so that the water will be thick and out of order, unless frost or fair weather come to clear it. In small brooks and rivulets it is not so; you may fish there again within a week or less after the flood."

3636. *The artificial bait called the devil* (see p. 1026.), is also used in the taking of jack after the method used for trout; but for this purpose it is usually made larger, and the the fly-hooks attached to it are proportionately stronger. It is, however, apt to be much torn when it has been mouthed by a fish which, to those who are careless about expense, is no objection to its use, particularly when other baits cannot be procured.

3637. *When a pike has been brought to land,* the inexperienced angler should be warned to be careful of his jaws, and to observe that after he appears wholly exhausted, he can yet bite severely. He can also, if he be not immediately stunned, make his way again to the water most artfully by repeated jumps, of which we witnessed a most ludicrous instance. The pike being stunned, it becomes necessary to recover the gorge-hook from his maw. To do this, turn him on his side, and set the hollow of your foot close behind his gills; then, with your spud wrench open his mouth, and introduce your disgorger. If the hooks are in the maw, as they usually are under the gorging system, open the fish's stomach about the middle, and you will be about opposite to, or rather under, the points, so that your gimp will be safe. Cut away the parts that are hooked, and unslipping the knot that holds the gimp to the reel line, draw your bait, hooks and gimp, all through the aperture you made in the stomach. This will disfigure the fish far less than cutting down the jaws, until the hooks can be got out through the mouth. It is a good plan in trolling, to be provided with two or three sticks of various lengths, one of these will assist to prop open a jack's mouth while the angler is attempting the extraction of the hook, but by no means trust your fingers in his mouth unless he be gagged.

SUBSECT. 1. *Taking Pike and Jack by Trimmers and Bank-runners.*

3638. *Neither of these modes of taking pike* is considered legitimate fishing; yet as there are situations where other methods of taking them are hardly practicable, so here the use of both the trimmer (*fig.* 543.) and bank-runner is apparent, and is tolerated. Trammelling we think a most unfair practice, and therefore we avoid it altogether; nor are we more favourable to the bow-net, nor indeed to netting of any kind, but on extraordinary and imperative occasions. Mr. Daniel, though an excellent sportsman, as we know, delighted in this wholesale fishing, and, as we have proved in p. 1048., would go any distance to assist in a general haul. He also advocates the murderous use of the bow-net and hoop-net, which we do not. "In laying hoop-nets," he says, "place them where the water gets tolerably deep from a gravelly scower. All the infallible attractions of brass candlesticks, yellow ribbons, flowers, and looking-glasses, are superseded by the arcanum of encircling a live fish, brought from other waters, in each hoop-net. Whether the old inhabitants approach the stranger out of vengeance or curiosity remains a mystery, but that they will run into the hoop-net to get at him the compiler positively insists on." "It was," he tells us, "a secret which an old game-keeper would not impart until after being in his service many years. Old Jonathan always requested to have the management of the hoop-nets left to himself, and would allow of no assistant; and his plan (the above) always proved successful." Trimmers are usually employed on lakes, meres, and other extensive waters, and consequently, when a trimmer is set with a living fish attached to it, it is cast adrift (*fig.* 543.) on some such water, and consequently a boat is necessary to follow and take it up. When the water in which it is set is difficult of approach by high banks, or other obstructions, then these trimmers can be reached with drag-hooks; or a long line may by means of an attached stone, or a large hooked arrow armed with strong twine may, be shot over the trimmer line. These trimmers are fitted up with thin but very strong cord. The hook employed must be well examined as regards its due temper, for it must neither snap nor bend. It should also be attached to the cord by gimp, and then wound on round the groove in the flat trimmer cork (*a*). The hook, of course, is baited with some lively bait attached by the back fin (*b*), and hangs within a foot or two of the ground, suspended from the cork by means of a slit in the central peg (*c*). The tug of the pike withdraws the line from this confinement, and the voracious animal carries it off to pouch it at his leisure; which having done, it only remains that the man-of-war trimmer, as these kinds are called, be followed by boat, if not otherwise connected with the shore. The bank trimmer is much in use on the lakes of England, the lochs of Scotland, and the large watery expanses of Ireland; and the pursuit of these traps in blustering weather is with many a delectable sport. For ourselves, we neither practise nor advocate them, except on rare occasions. Still, "trahit sua quemque voluptas."

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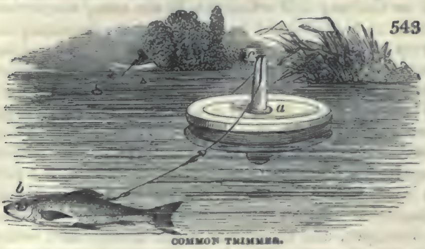
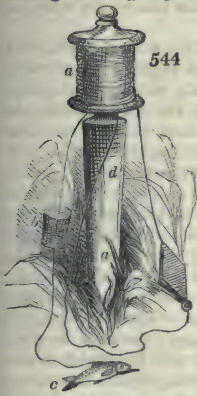


COMMON TRIMMER.

3639. *The bank-runner* (*fig.* 544.) is also very frequently employed by the destructives among the angling classes at such times as they are manually employed with rod and line. The bank-runner, as seen in the cut, is of strong wood, having a movable revolving head grooved and fitted with not less than from fifteen to twenty-five feet of some strong line (*a*). To the armed end of the line a perforated cork is attached (*b*), which suspends a minnow, bleak, or gudgeon, according to the judgment of the fisher (*c*). The runner is fastened into the ground by its staff (*d*), and thus safely lodged, the bait is put into the water, having been previously kept alive in the minnow-kettle. Occasionally a considerable number of these bank-trimmers are set, consequently they require to be watched, and each visited every hour or two, or the baits will be apt to have been carried among the weeds, or become irretrievably fixed around stumps of trees, &c. &c. If a party be present, it is common for each person to set his own trimmer, and then to bet on his success. Let the trimmer-hook be sufficiently large, and observe that trimmers cannot be set too early; it is also proper to bear in mind, that they should not be left out late in the evening. The pike have then retired and the eels have come abroad, and will make sad havoc among both baits and tackle. Be careful how you endeavour to secure your fish when he has taken it into a mass of weeds, as is common with these gentry. Tear up the weeds in the course of the line, before you attempt to take up the pike.

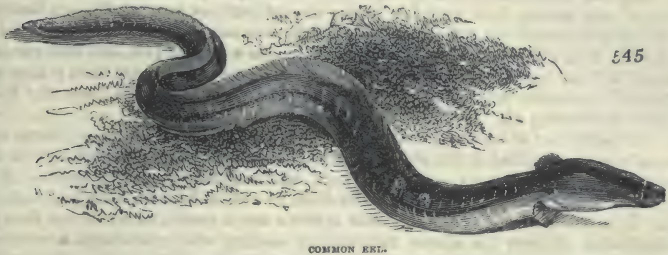


544

BANK-RUNNER.

3640. *The edible qualities of the pike and jack* are not in very high estimation among us. This fish, however, occasionally graces the boards of the great; formerly it appeared a more frequent and a more highly appreciated guest there. One among other proofs is, that at the famous enthronisation feast of Archbishop Nevil in the year 1466, it formed one of the varieties. We likewise learn, that in the reign of Henry VIII. a pike was sold for double the price of a house-lamb in February, and a pickerel or jack for more than a fat capon. The culinary treatment of these fish is not very much varied: small pike and jack are usually boiled and eaten with parsley and butter. Large pike are stuffed and roasted, or baked: occasionally they are pickled also. The flesh of both is firm and commendable, but very full of small bones, which are forked.

SECT. XXIII. *The common Eel* (*Anguilla vulgaris*).



545

COMMON EEL.

3641. *The common eel* (*A. vulgaris, fig.* 545.): colour of the dorsal and anal fins uniform; length, from one to three feet; colour, above, dark olive brown, whitish on the belly: in the variety called silver eel, the belly and sides are silvery and sub-translucent. The head is depressed, the lower jaw longest. Eye directly above the gape; irides reddish. Nostrils with two openings on each side; one a simple pore near the eye, the other a tubular wart on the snout. Gill opening immediately in front of the temporal fin. This species spawns in the sea, for which purpose it leaves the lakes and rivers, descending from August to November, and principally in dark stormy nights. The young ones appear on our shores in myriads, making their way up the mouths of rivers. The migrations of eels were first pointed out with accuracy by Redi. (*Opus*, part iii. p. 99. ed. 1729.) Mr. Pennant notices a variety common in the Thames under the name of grigs. These bite readily at the hook, which the common eel will not. They have a larger head, a blunter nose, thicker skin, less fat, and indifferently tasted. They have been known to reach to four pounds in weight, but have seldom been met with beyond it. Other varieties of the eel are likewise found, as the monstrous conger, which we shall not pass over. The agencies of localisation appear to have much influence in establishing other varieties of the eel, but all which are less distinctively marked than those we have noticed. One of these, of a small size, is found in the Nene in Northamptonshire, with a lesser head and narrower mouth than that of the common type. In the Serpentine river in Hyde Park, also, there is a large headed variety:

and it may be noticed as a singular circumstance, that in most standing and muddy waters the common eel becomes large in the head, black on the back, and exhibits a golden colour yellow beneath, instead of the silvery whiteness which characterises the eels of our streams, known among us by the familiar term of the silver eel.

3642. "*The eel*," says Dr. Shaw, "which, in a natural arrangement of the animal world, may be considered as in some degree connecting the fish and serpent tribes together, is a native of almost all the waters of the ancient continent, frequenting not only rivers but stagnant waters, and occasionally salt marshes and lakes: it is even found, in the spring season, in the Baltic and other seas." Universal as its distribution is, it is seldom found in the Danube, though so common in Upper Austria. As a species, it is distinguished by its uniform colours, but more particularly by the peculiar elongation of the lower jaw, which advances to some distance beyond the upper: the head is small and pointed; the nostrils small and cylindric, and at a very small distance from each eye is a kind of additional pair, of a lengthened shape, but not cylindric; the eyes are small, round, and covered by a transparent skin united with the common integument of the body; the opening of the mouth is small, and both jaws and palate are beset with several ranges of small sharp teeth; on each side, both of the upper and under jaw, are observed several minute pores, through which exudes a viscid mucus; the orifices of the gills are very small, of a lunated shape, and are seated close to the pectoral fins, which are small and of an ovate shape; the back fin commences at some distance beyond the head, and is continued into the tail fin, which is also united with the vent fin, the latter being continued as far as the vent, which is situated near the middle of the belly. The general colour of the eel is olive brown on the back, and silvery on the sides and beneath; the fins are slightly tinged with violet, and sometimes margined with pale red; it is however occasionally seen of a very dark colour, with scarcely any silvery tinge, but sometimes yellowish or greenish; those are observed to be most beautiful which inhabit the clearest waters. The skin of the eel is proverbially slippery, being furnished with a large proportion of mucus; it is also covered with small deeply imbedded scales, which are not easily visible in the living animal, but are very conspicuous in the dried skin: their form is a long oval, their colour white, and their texture finely reticular: these scales appear to have been first observed, or at least described, by the celebrated Leuwenhoek, who has figured them with great accuracy and elegance. To obtain these scales, which are curious exemplifications of Nature's works, take a portion of the skin which grows on the side of the eel, and while moist spread it on a piece of glass, that it may dry very smooth; when thus dried, it will appear all over dimpled or pitted by the scales, which lie under a sort of cuticle; this thin skin may be raised with the sharp point of a penknife, together with the scales, which will then easily slip out. It has been asserted, from trials of this nature, that very few fishes, except such as have shells, are destitute of scales. To prepare these scales for examination with the microscope, they should be taken off, if possible, with nippers, and be soaked in water for a day or two, and afterwards carefully rubbed to clear them from the skin and dirt which may adhere to them; they should then be placed on smooth paper, between the leaves of a book, to make them dry flat, and prevent their shrivelling up.

3643. *The common eel is extremely tenacious of life*, and may be kept many hours, or even days, out of water, provided it be placed in a cool situation: it is also well known, that it voluntarily leaves the water at certain periods, and wanders about meadows and moist grounds in quest, as is supposed, of particular food, as snails, &c. but more probably, as we think, it is in search of a new location. Nor is there much reason to doubt but that to this roving disposition we owe the almost certainty of meeting with eels within a twelvemonth after the sinking the site of a pond, provided that any already exist within a reasonable distance.

3644. *The eel has been reputed viviparous.* Dr. Shaw observes on its generation: — "The errors of the ancients, and even some of the moderns, are too absurd to be seriously mentioned in the present enlightened period of science; it appears, however, that both eggs and ready formed young are occasionally observed in the same individuals, as is known to be the case also with several other animals." Many modern observers, and particularly Mr. A. Young, differ from Dr. Shaw, and maintain that the eel is oviparous. He has bred them artificially from spawn. Probably the eel is either oviparous or viviparous according to external circumstances; in some of the higher fishes the young are hatched in the oviduct. "The young ones," as observed by Dr. Fleming, "begin to appear on the shore in March, April, or May, and proceed in myriads towards the mouths of rivers, for the purpose of ascending to the lakes and marshes. In their ascent, where eel fisheries are of value, the young are assisted in surmounting obstacles, such as the barrier of a mill-dam or a cascade, by straw ropes, so placed that the young eels can twist themselves round and reach the summit." The migrations of the eel were first pointed out with accuracy by Redi. (Opus, part iii. p. 99. ed. 1729.)

3645. *The account of the migrations of the eel* in the Dee, in Aberdeenshire, by the Rev.

G. Mack, states that "in the month of June yearly, immense swarms of young eels make a progress from the lower part of the river towards the higher ground, with a quickness and unremitting assiduity that are surprising. The eel, very different from the trout, is a fish that seems to dislike running streams, and therefore avoids that part of the river where the current is strong. This probably had been the circumstance that induced them, in the rapid Dee, to direct their progress only along the edges of the river close to the banks, in a line following the windings of the river often suddenly deflected by stones or other interruptions, without any breach of its continuity. This line having frequently caught my eye, my hand was put into the water to touch the line, with a view to examine what it was; the line became discontinued when my hand approached, but it united again as soon as my hand was withdrawn. This induced a nearer examination; and then I perceived, with astonishment, that this line was formed by a series of small eels, moving forward with great celerity. These eels did not exceed half an inch in length, but were in all respects perfectly formed, like the common eel. The line might perhaps, on an average, consist of from twenty to thirty in breadth; and the individuals being in different degrees of forwardness, and close to each other, made the line uniform. The progress with which they advanced was not less than four miles an hour; and this continued for eight days and nights together, and there was no apparent diminution of it when I left the place. There was a similar line on the opposite side of the river. The water in which they floated at the place were I observed them, was in general about two or three inches deep."

3646. *Eels are, however, prone to migrate by other impulses* than those of the reproductive kind. At any time of the year a stormy state of the weather, particularly when accompanied with thunder, will produce a tendency in them to move in vast masses, but it is invariably from the upper part of the stream downwards, which circumstance is well known to millers and fishermen, who at these times take great quantities in their passage by nets, traps, &c. This movement of the eels is intended and instinctive; probably it is done to secrete themselves from the impending storm in the depths of the sea.

3647. *The torpidity of eels* during the winter is asserted and denied with nearly equal force. During severe frosts they certainly retire to deep and muddy bottoms, and in the winter season are seldom found active enough to take a bait: but that they enter into a state of actual torpidity, is very questionable. It is said that if a large wisp of straw be thrown into a pool during the winter, eels will congregate within it, and that they may be drawn up embedded in the straw; but although we do not deny, we cannot vouch for the tale. The eel may be considered as approaching the nature of a crepuscular animal: in the daytime it commonly lies concealed in its hole, which it forms pretty deep beneath the banks, and which is furnished with two outlets in order to facilitate its escape if disturbed; at night it prowls in search of prey.

3648. *The very general diffusion and plenty of the eel,* has made it of much economic importance, but its appreciation has vacillated among different nations and during different epochs. "The Romans," we know, "held it very cheap, probably from its likeness to a snake. It is somewhat singular that the aversion of the Romans to the eel did however not extend to the lamprey, a fish not very dissimilar in its form. We are told that Antonia, the wife of Drusus, possessed a lamprey which she decorated with jewels; that Hortensius wept at the loss of one which he had kept and exceedingly loved; and that Crassus the orator lamented the decease of another."

3649. *In some parts of Europe,* eel fisheries are of great national importance. We are informed by Dr. Bloch, that in some places near the mouth of the Baltic such great quantities are taken, that they cannot be used fresh, but are smoked and salted for sale, and conveyed by waggon-loads into Saxony, Silesia, &c. In Jutland it is said that two thousand have been taken at a single sweep of the net." This fish is supposed to live to a great age, and to be of slow growth. Its general size is from two to three feet, and its weight from two to five or six pounds; sometimes, however, it is much larger: one was taken out of the Kennet, near Newbury, which weighed fifteen pounds. The enormous eels we occasionally read and hear of, are without doubt congers. The common eel is extremely voracious, and most destructive to the spawn and small fry of fish; and Sir John Hawkins has spoken feelingly of their depredations not being confined to the young of fish only, for his broods of ducklings were all secured under water by the large eels with which his canal abounded.

3650. "*The conger eel differs from the common eel in the following particulars:*— Their colour in general is more dark; their eyes much larger in proportion, the irides of a bright silvery colour; the lower jaw is rather shorter than the upper: the side line is broad, whitish, and marked with a row of small spots — Mr. Ray says a double row; the edges of the dorsal and anal fins are black: they have more bones than the common eel, especially along the back quite to the head. As to the distinction that Mr. Ray and other writers make of the small beards at the end of the nose, it ought not to be depended upon, those excrescences being sometimes found in both kinds, and sometimes entirely wanting.

They grow to a much greater size. Dr. Borlase assures us, that they are sometimes taken near Mounts' Bay of one hundred pounds' weight. Some taken near Scarborough were ten feet and a half long, and eighteen inches in circumference at the thickest part.

3651. *Congers are an article of commerce in Cornwall,* and are exported to Spain and Portugal, particularly to Barcelona. The quantities that were formerly sent from Mounts' Bay for five years were considerable. Mr. Pennant remarks, that a fishery of congers would be of great advantage to the inhabitants of the Hebrides. Perhaps they would at first undertake it with repugnancy, from their absurd aversion to the eel kind.

Subsect. 1. *Angling for Eels.*

3652. *Angling for eels.* If the edible qualities of the eel were not an attraction, this would be little known and less practised. In our younger days, it is true, when every thing that swam was fair game to us, we pursued eels also; but their twisting and twining around the tackle, and their protracted dying writhings when released from it, disgusted us in the end. We are not however to legislate for all, and as we have known some who devoted much time to sniggling, bobbing, and even float-fishing for these slippery gentry, we make no doubt that others will do the same. It is our duty therefore to offer instructions on this head, which we shall commence by telling our friends where to look for them before we show how to catch them.

3653. *The haunts of eels during the spring and summer months* are in cavities afforded by roots, stumps, stony masses, and large weed-beds. Where the banks are oozy, they occupy holes in the earth below the surface of the water, having an inlet and often an outlet; they insinuate themselves, also, between planks and floorings under the water, where they are always to be found, as well as in all the depths about bridges, piles, flood-gates, &c. &c. In short, wherever there is an excavation they will creep in and make a hold for themselves to lie in and look out for prey, which, if it comes within reach, they will seize on, even in the day; but their habit is to leave these recesses at night only, when they rove about in search of food.

3654. *Float angling for eels* is sometimes practised with any variety of worm on a No. 6, 7, or 8. hook, mounted on a piece of strong salmon gut — the float is either cork or quill. Let the worm reach the bottom and trail on it; if two hooks and two baits are used, both hooks must reach the ground, one, three, or four inches in advance of the other. Choose for float fishing still deeps, or very gentle currents only, with oozy or sandy bottoms. Strike two or three seconds after your float is drawn under water, and then haul out your prize as quickly as possible, and stop his twisting round the tackle by putting your foot upon him immediately behind the head, then crush it with a blow, or just sever the vertebræ only with a knife, which will enable you to remove the hook by holding the line and snipping the mouth downwards, with a pair of scissors, to the hook, which is often gorged to a considerable distance. No other plan will secure your hook and line. Ground bait is sometimes useful in this fishing, and is made of small pieces of garbage, which are mixed with coarse sand. A tripping worm bait on a well shotted line, with a small barbel wire hook, about No. 8., in dark gloomy weather with an electric state of the atmosphere, will often prove very successful when angling for them in oozy mild currents, towards the sides of weed-beds, and in pools where the water gently eddies round: but this particular practice is less successful when the weather is settled, and in a very bright day it will be found to be useless. This kind of angling will succeed sometimes with eels when pieces of fish, greaves, slugs, and snails, are employed.

3655. *Leger-line fishing for eels* is practised both by day and night; the line in these cases does not differ from the usual leger (p. 1058.) but it is prudent to furnish it with two hooks, one about six inches below the lead, the other about two feet from it; to these latter, two or three shot may be added, within six inches of the hook, to keep it steady if there be a current. If both of these hooks are fitted upon fine gimp, it will not be amiss, as the larger kinds are very dexterous in sawing off either gut or weed: in other respects, Indian weed, when very stout and good, makes an excellent eel line. When leger-line fishing is practised in the deeps of rivers, in meres, lakes, in harbours, and in tide waters at the sides of the currents, then strong tackle should be used, as there the largest eels are often taken, and nothing less than gimp should be employed.

3656. *Night fishing* with a leger-line is a very killing practice, and in gloomy weather portentous of thunder, is often remarkably successful with those who are inclined to tempt the night dews. The professed eel fishers carry a lantern that they may be enabled to bait their hooks; a dark lantern is the most proper, that the light may be brought to shine solely on the bait when wanted, but not to make a glare in the water, as too much dependence must not be placed on the voracity of the eel, for he is not less wary than voracious. Mr. Salter recommends that the leger-line be fitted up with a yard and a half of fine gimp looped at each end; to one of which attach a hook, No. 7., and a leger-lead secured in its place by a shot. On this hook put a small lob or a large marsh-worm, and drop it into the stream. If a float be used, the current will carry the bait away.

3657. *Chain or night lines*, as some call them, are frequently used in eel fishing. The chain line is made either of strong trolling line, or of whipcord (see *fig.* 546.). Make it fast by one end to any firm substance, and let the other be fastened to a strong wooden peg; now attach eel-hooks with ties, bought for the purpose, about half a yard apart the whole length of the line. If the water be deep, or the angler object to putting the peg into the water by hand, let him use a pole, which he can push down from a punt or a bank, and by the same means he can draw up his tackle and his prey also. This mode we have found even more effective sometimes than using the paternoster line (figured and described, p. 976.). The best bait for a night line having a single hook is a dead loach or gudgeon.

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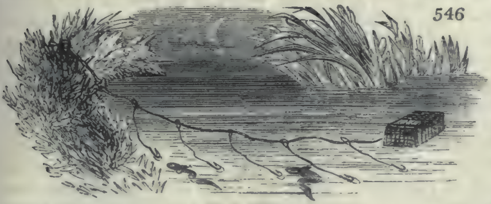

CHAIN LINE.

3658. *Living fish baits* are certainly the best for this variety of angling, and among these lampreys are to be preferred; next to them are minnows, roaches, and bull-heads. Where the eels run very large, small gudgeons may be used to advantage. Lob-worms are also good baits; likewise greaves, chickens' entrails, and pieces of eels. In tideways, muscles, cockles, and periwinkles are employed. Eels have been taken with shrimps also; and shell-fish bait, being tenacious on the hook, are peculiarly advantageous where the water flows rapidly. When two or more hooks are used, bait with two varieties, and let the farthest from the lead be a dead bait and the other a live one. Fish always with good tackle, as this angling often takes heavy fish of other kinds, as trout, chub, or carp; jack and pike have also been thus taken.

3659. *When a bite occurs* be not in a hurry to strike, or the eel will abandon the bait; and no danger can arise from giving a little time, as this fish seldom leaves a bait if undisturbed, but gradually takes the whole in. It is deliberation, and a gradual adaptation of the bait to their mouth and throat, that makes them so frequently strip a large worm up the hook, until they get a loose end, when they will slowly unhook the whole of it, and make off. Two rods may be readily employed in this fishing, by having one in each hand, or one on the ground, sdie of a boat, &c. &c.; and where the angler has enterprise enough to risk his health, and deprive himself of his rest for this sport, he deserves it, and every advantage is fair to insure success.

3660. *Snigling for eels* (*fig.* 547.) is a practice so ingenious and full of artifice, that it might reconcile the sportsman even to eel fishing. Every boy almost who lives within the sight of an eel river can sniggle, which ill accords with this account of it: but let any one accompany the true eel sniggler in search of his material to the fishing-tackle shops, where the fisher is fitted to his mind with a well contrived set of machinery, expressly adapted for this hole and corner work; let him finish by witnessing the application of it to the taking of a few eels, by a writ served on them within the recesses of their dwelling, and he will then agree that this, like every other pursuit, however trifling, can be made interesting when improved by art. Mr. Salter, with the professional ardour of a true London angler, has entered into an elaborate description of the most improved apparatus for the purpose, which he has done with a minuteness of detail that not only evinces his own proficiency as a *sniggler*, but shows how much he was interested in making others equally so; and we should be robbing this excellent practical writer of his just due, if we did not own that our figure and our description of the apparatus and practice concerned in eel sniggling, are indebted to him for their principal value.

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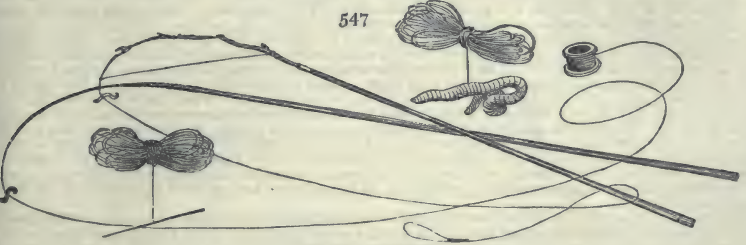

SNIGGLING APPARATUS.

3661. *The more common country practice of sniggling* is thus characterised: — A stick a yard long with a cleft at each end, a strong needle whipped to a small whipcord line from the eye to the middle, which, with a lob-worm stuck on the needle, leaving the point to be inserted in the cleft of the stick, constitutes the simple apparatus. The art consists in putting the worm, needle, and line, softly into the mouth of the eel holes, which are suffered to remain until taken by the eel, when the line and hook are again reclaimed, but accompanied by the eel also. This outline forms the boyish practice we have hinted at; and we now proceed to the more improved methods pursued by the regular eel fisher.

3662. *The sniggling rod*, instead of being one yard long, ought to be two, or two and a half in length. Two joints of the hazel rod, commonly made up for the purchase of youths, form one of the best roots, being light and tough; but Mr. Salter's recommendation is two yards of stiff bamboo. To such a root, or rod, a top must be fixed; and it is essential that it be flexible, and likewise that it remain flexed or bent at any angle or segment desired. In the common method this intention is imperfectly fulfilled, by means of a branch of willow or hazel, which, being first bent to the required position, is then tied by means of a cord extending from the point to the middle of the rod (*a*, *fig.* 547.). An improvement is now made in this by substituting for this top half a yard of stout bell-wire (*b*, *fig.* 547.), which requires no tying, and can be bent and unbent at pleasure. The crack fisher however is often furnished with a top expressly manufactured for the purpose by the best rod-makers from three pieces of hickory, each of five inches' length, the ends of which are united to each other by two hinges, similar to those used in the making of carpenters' rules, by which they can be bent to any angle required. It must be notorious to those conversant with London anglers, that great pains are taken by them, and other piscatory amateurs of metropolitan towns, to make their tackle portable, as well as effective; and if it can be hidden, that too is a still greater recommendation. The sniggling apparatus, be it observed, may be readily formed on these principles. The rod may be made of two telescope joints, one of which may slide into the other, leaving room to receive the wire also, if the top be of that material. If it be the folding brass jointed article just described, that will enter the pocket, or even the pocket book, and the whole will then appear as a walking stick only.

3663. *The line employed is not attached to the rod*, but is held in the hand of the angler, either loose or wound: if the latter, the common thumb-winder is often used for the purpose, and the material is sometimes fine whipcord: but a stout platted line is much superior. To the unattached end of this line either a stout hook, of No. 4 or 5., or, what is much to be preferred, a glover's or tailor's button-needle, of about two inches in length (*c*), with its extreme point broken off, is whipped with some silk, waxed with shoemaker's wax, first laying the end of the line nearly half-way down the needle, within a quarter of an inch of the eye or thick end, and tying it strongly on, the line will then hang from about the middle of the needle, leaving the smaller end quite bare, and also a quarter of an inch of the larger.

3664. *To bait the needle*, enter the thick end thereof into the worm, near the tail, and carry it down near to the head; then draw the worm as much back as will completely cover the needle; the line will then hang from the tail, and the head will be presented to the eel.

3665. *To apply the bait to the suspected resort of the eel*, put the tail end of the worm a little way on the point of the rod, whether of wire, wood, &c. and thus convey the head end of the worm just within the mouth of a hole in a bank, or into a crevice between piles, or any opening between large stones, allowing as much line to unwind as will suffice for the placing of the worm. This being done, a little time only will elapse, when, if an eel disposed to take a bait be present, a gentle tug will be felt, sufficient to detach the worm from the rod, on which it of course cannot be too lightly placed, so that it can be carried to the eel hole. When a wire top is used, tie around it, at half an inch from the extremity, a whipping of silk, to prevent the worm from being penetrated too far. It is also of consequence that the worms used be tough by good scouring, otherwise they will break to pieces in baiting with them. Some fishers prefer presenting the tail end of the worm to the eel, and some the head; but this we believe is not material. When a minute or two has been allowed, the bait may be supposed to be gorged, when by striking smartly the needle will fix itself across the throat of the eel. To draw the eel forth, it is requisite that a certain degree of force be used, and a certain degree only; for if the line be violently pulled. the tackle will probably give way, or the eel may be ripped open, and the hook return empty to the hand; but if a moderate strain is kept on the line, the eel will become at length tired; it will then cease to resist, and may be drawn out and landed. We would refer the sniggler to Mr. Salter, to whom we also are under obligations on this subject, having never practised it to any extent or with much success.

3666. *A simple apparatus for the purpose* may also be manufactured by the angler on the spur of the moment. "Use the two upper joints of a strong top rod, or a long slender hazel stick; slip a small quill over the taper end, leaving the extreme end of the quill whole; a tailor's button-needle, or a stocking-needle not more than two inches long, is also requisite, and a piece of hard twisted or fine whipcord for the line." (*Bowlker.*)

3667. *Bobbing for eels* is treated on by Mr. Daniel much after the following manner, but he appears to confine himself principally to a boat, whereas we have witnessed much success in this fishing from the river banks: — Take a quantity of well scoured lob-worms; have ready a long needle, with three lengths of worsted slightly twisted together; put the needle lengthways through the worms, and draw them down on the worsted; when two yards are thus prepared, fold them up in links, and tie them to about two yards of good twine. Having made a knot on it eight inches from the worms, slip a piece of lead with a hole in it (weighing from a quarter to three-quarters of a pound, according to the current fished in) down the line to the knot; fasten the line so armed to a manageable pole, and let the lead lie on the bottom in thick muddy water when the tide runs up strong, or near the mouth of some river. When the eels nibble at the bait, they can be felt; give some little time before it is pulled up, which must be gently until near the surface, and then hoist out quickly: the worsted sticking in the eel's teeth prevents their loosening themselves until the line is slackened by throwing them into the boat or on the ground; as soon as they are disentangled, cast the bait in again: frequently great quantities are thus caught, especially of gregs. Eels are in many rivers snared in wicker pots.

3668. *Eel spearing* (*fig.* 548.) is practised by many persons for pleasure even, although to be half-way up the legs and thighs in ooze and mud would not appear delectable in the eyes of many. We, however, knew a very keen angler who would leave off fishing in the midst of his sport to undertake to spear some eels for a miller, from whose running ponds he used to extract largely of trout, perch, jack, roach, and dace, but which amusement he readily abandoned for eel spearing. To the surprise of every one who witnessed his exertions, now up the brook feeders, almost mid-deep in ooze and mud, he plunged in his eel-spear, and so doing, ever and anon, was heard a lusty hurrah, and next was seen spear uplifted, and bearing sometimes one and sometimes two eels fast clenched between the iron jaws of the instrument, but writhing and struggling to free themselves from a grasp too firm to give way to their exertions. Extraordinary as it may appear, on one occasion, when striking deep into the side of the bank which circumvallated the water, he felt a more violent momentary struggle than usual: he had struck an otter in his couch, and so disabled him as to make his destruction inevitable, much to the miller's satisfaction, who had long been a serious loser in his poultry, and who had in vain attempted to discover how his losses were effected, more particularly in his ducks and geese, the young of which were continually missing.

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EEL-SPEAR.

3669. *Angling for conger eels* is likewise practised near the coasts, and in docks, harbours, &c. Both the sea and the earth-worm are used as baits for them. In a small stone basin, at Torquay, in Devonshire, into which the coasting vessels are received, fishing for congers is very generally practised from the stone piers which surround it, by means of a strong hook, a powerful line, and a lob-worm.

3670. *Of the edible qualities of eels* little need be said; the thousands who eat of them are living proofs that they are not unpleasant. As regards their culinary preparation, we were going to omit all mention of it even, but the naiads of the Thames might give us a ducking the next time we ventured there, did we not laud the eel pies baked on its aits, or the spit-chucked dishes of them dressed, and dearly charged for at *some* of the hotels which skirt its banks. The latter part of the banquet, we suspect, has palled the appetite of many a visitor, else well pleased.

Sect. XXIV. *The Flounder* (*Pleuronectes flexus* Linn.)

3671. *The flounder, or fluke. Pleuronectes flexus, oculis dextris, lineâ laterali asperâ, spinulis ad pinnas.* (*Linn. Syst. Nat.* p. 457.)

3672. *In our anatomical and physiological examination of fishes*, it may be remembered that we described, as one of the distinguishing features of this class of fishes, the dextral situation of the eyes. A sinistral variety however, or one where the eyes are found on the left surface, sometimes occurs. Flounders are diffused over the Northern and the Mediterranean seas; and around the British coasts they are very numerous, as well as in all the rivers that communicate with them. It is at the mouths of these that they naturalise themselves, increase greatly in size, and become very numerous. "They will likewise," says Mr. Daniel, "live in ponds, and are a profitable fish to stock them with, as they soon get fat, will live many hours out of their element, and, consequently, may be easily and safely removed; but they will not breed, nor will they live above seven or eight years when confined in standing waters." Mr. Daniel might have added, that they delight to live where there are sandy bottoms and gravelly banks, and can only be said really to thrive in such ponds as present these characters, and also have a stream running through them. "The colour of the upper part of the body is a pale brown, sometimes marked with a few spots of dirty yellow; the belly is white; and it may readily be distinguished from the plaice, or any other fish of this genus, by a row of sharp small spines that surround its upper sides, and are placed just at the juncture of the fins with the body; another row marks the side line, and runs half-way down the back. Mr. Pennant mentions hearing of one that weighed six pounds, but a flounder of half that weight is not common." Captain Williamson says, "this fish delights in a soft, flat, or gently declining bottom, where they will take various baits, but principally well scoured worms and greaves. You will have but little sport unless the place be previously baited, for they are remarkably indolent; though when once assembled, no fish can keep the angler better employed. Use strong gut, with a hook, No. 7 or 8., rather stiff in its make; put four or five shots on your line, and let your bait go close to the bottom or lie upon it; give a little time when you have a bite, for the flounder is a great glutton, and will, if possible, gorge your bait, provided he be not disturbed."

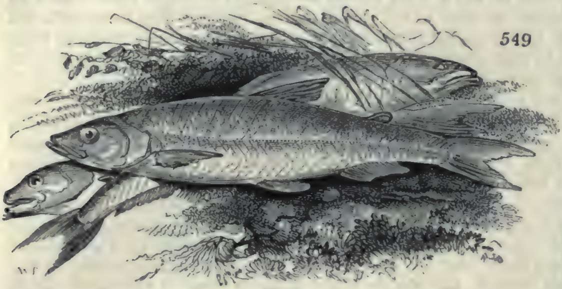
3673. *The Thames flounders* are considered as singularly sweet and firm, and are met with by the angler in the creeks from Blackwall to Bromley, Stratford, and West Ham, as well as in and about the docks at Limehouse. At the entrance, and even beyond the tideways, they are also to be found in all our rivers communicating directly with the sea; in some of which they are found large, and must be fished for with correspondingly strong tackle. Flounders spawn in May and June, but they may be angled for at all seasons; for although, like other fish, they feel the reproductive process, yet they are at no time so much out of condition as to be unfit for the table. nor so enervated as not to yield sport to such persons as indulge in this kind of fishing. In large rivers and estuaries they are caught with dead lines; and in milder streams they are taken likewise with line and float in the same manner, and with the same baits, as eels. In fact, these fishes are frequently caught together; and when a multiplicity of hooks are used, it is not uncommon to find one occupied by a flounder, and another by an eel.

3674. *On flounder angling* Mr. Daniel observes, that "they bite freely at all hours of the day, but particularly on the rise of the water by flood or tide, and in warm weather, with a little wind, and are to be fished for with a strong line, and good gut at the bottom, as some of them are large, and struggle much: the best places to angle for them are by the sides, and at the tails, of deep streams, where the bottom consists of fine gravel, sand, or loam, or in still places of the same quality near the banks: two or three rods may be used, with a bullet on the lines, to lie on the ground in the streams; and when in still water, a shot or two on the line, and the hook small. Brandlings that are taken from rotten tan, well scoured, are the best baits; they will take the lob-worm, and even the minnow: a flounder, weighing twenty-three ounces, was caught in 1799 with the minnow."

SECT. XXV. *The Smelt* (*Salmo eperlanus* Linn.)

3675. *Salmo eperlanus. S. argenteus, subcæruleo-virescens, capite diaphano, radiis pinnæ ani septemdecim.* (*Linn. Syst. Nat.* p. 511.) *Osmerus eperlanus* (Cuvier, R. A. ii. 305.)

3676. *Dr. Shaw informs us* that there appear two varieties of the smelt, one not exceeding the length of three or four inches, the other arriving at the general length of six, eight, or nine inches, and sometimes even attaining twelve or thirteen. The larger variety (*fig.* 549.) seems to be that so frequently seen about the British coasts, which is distinguished by Dr. Bloch under the name of *Eperlano marinus,* or sea smelt. From Pennant we learn that it derives its name from having, in the opinion of some, the scent of a violet; in the opinion of others, that of a cucumber; and so strange is the disagreement respecting the smell of this fish, that the Germans (says Mr. Pennant) distinguish it by the very elegant title of the *stinck fish.* The name of *sparling,* which it bears in Wales and in the North of England, is taken from the French *eperlan.* They are met with throughout the year in the seas that wash our coasts, and seldom go far from shore, except when they ascend the rivers, which they do with the tide; and in certain rivers it is remarked that they appear a long time before they spawn, being taken in abundance in the Thames and Dee in November and the two succeeding months, in other rivers not until February. In March and April they spawn, and are very prolific; after which they all return to the salt water, and are not seen again in the rivers until next season. It has been observed, that they never come into the Mersey so long as there is any snow water in its current; and that in the spring and beginning of summer they will run farther up than in the decline of the year: they are also to be met with in the docks that are opened for the reception of ships.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SMELT.

3677. *As regards the season for smelts,* Mr. Salter says, that "though they arrive twice every year in the Thames, March and July, yet they do not get above London Bridge in their last visit." On the change which has taken place in their migration, Mr. Salter feelingly observes, "When they arrive, if the season be favourable for the fishermen to work their nets, they then take, or used to take, an immense quantity of them, which enables the poor fisherman to discharge some of the debts he unavoidably contracts in winter, in consequence of his not being able to labour in his vocation. Between London Bridge and Lambeth was the principal place for taking smelts in nets; but for the last twenty years past these poor fishermen have been deprived of their resource for paying off the debts of winter, by the smelts not making their annual appearance in the river Thames, previous to the time above alluded to. The river formerly swarmed with this delicious fish. In July we used to begin angling for smelts in the various wet docks below bridge; but the spot covered by the floating timber, at Limehouse Hole, was a favourite resort for smelt fishing: from these timbers a hundred dozen have frequently been taken in a day. Then, again, Perry's Dock, Blackwall, now belonging to the East India Company; what a place for smelts in those days! I have made much inquiry on the subject of the smelts not visiting, as usual, the river Thames, but without any satisfactory results." They still visit the Thames, but it is below Woolwich, and of course it is impossible to angle for them down-river.

3678. *The smelt is of a very beautiful form and colour;* the head is transparent, and the skin in general so thin, that with a good microscope the circulation of its blood may be seen; the irides are silvery, the pupil of a full black; the under jaw is rather prominent; in the front of the upper are four large teeth, those in the sides of both are small; in the roof of the mouth are two rows, and on the tongue two others, of large teeth; the colour of the back is whitish, with a cast of green, beneath which is varied with blue, and then succeeds a beautiful gloss of a silvery hue; the scales are small, and readily drop off; the tail is forked; the flesh is tender and of a delicate taste. These fish vary greatly in size. The largest Mr. P. ever heard of was thirteen inches long, and weighed half a pound: they used to be sold in the London streets by the name of dried sparlings, being split and dried; and were recommended by the gentlemen who *took their gills* (not fish-gills, reader,) of a morning, as adding to the spirit a particular relish.

SUBSECT. 1. *Angling for Smelts.*

3679. *Angling for smelts* was, according to Mr. Salter, a very delightful amusement some years ago; but it would seem that the mania of emigration has extended itself from man to the animals around him: thus it is that this and other species of the salmon genus seek other shores; and it is done by both from a parity of causes: the former is starved out, the latter is hunted out. Smelts are however yet to be met with in considerable quantities in the mouths of many of our rivers, estuaries, and harbours; and are usually fished for with a paternoster line, which should be fitted up with bristle (p. 976.). Captain Williamson observes, that "smelts never stray far from salt water, or at least from where it is a little brackish: thus they come in with the flood, especially during spring tides, and return with the ebb. They are fond of deep holes, and when the tide is nearly full, may be caught with a stout minnow line (or a very delicate paternoster) in such places. They vary in their depth of swimming, but in general lie about seven or eight feet from the surface, and still lower in very deep water. If fresh raw shrimps can be had, or small pieces of raw lobster or crab, they will prove very superior baits." Mr. Salter directs that in this angling there be a strong flexible top to the rod, strong gut line, heavy float, and from ten to twelve or more hooks, eight or nine inches apart; size of the hooks, No. 8 or 9.

3680. *The baits for smelts are various:* the best appears to be a small shrimp, or part of a large one; small pieces of an eel will lure them, and the belly parts are thought to be the best. We have taken them with grigs and loaches also. Gentles they are likewise fond of, and when other baits fail, small parts of their fellow smelts will answer the purpose. Boiled shrimps are sometimes used with success, and occasionally nothing is found better than red worms. Mr. Daniel recommends bread crumbs to be used as a groundbait, and Capt. Williamson prescribes that oatmeal or raspings be thrown in to keep them together. In float angling it is to be observed, that when smelts bite, they force the float up instead of drawing it down, at which time the angler is directed to strike immediately and forcibly. As smelts are found in very deep waters, they are often angled for without float; but instead of it a long paternoster line is used, and a dip-lead, which is allowed to rest on the ground, occasionally however rising and sinking it. In this way great numbers used to be taken by the London anglers off the ships' sides in the wet docks, and from the floating timber in the Thames: they were also to be caught in the canal which intersects the Isle of Dogs. When a dip-lead is employed, where the water is very deep, the object used by some anglers to signify when there is a bite, is a morsel of white feather placed on the top of the rod. Smelt angling is best practised early and late, particularly in the summer months. The season for it is from the middle of June until the end of November; some even fish for them until they disappear in the middle of March, on their migration to the deeps of the sea for the purpose of spawning, from which they return in about two months.

SECT. XXVI. *The Grey Mullet* (*Mugil capito* Cuvier.)

3681. *Silvery grey mullet*, with dusky back, and sides striped with longitudinal blackish lines. (*Shaw.*) *M. pinna dorsali anteriore quinque radiata.* (*Linn. Syst. Nat.* p. 520.) The mullet is so commonly found in all our books as a fish of passage, and one of the objects of the angler's pursuit, that in obedience to the tyrant custom we introduce it here, though against our own judgment, which dictates to us that its more appropriate situation would be among sea fish and sea fishings; for, except on some coasting vicinities, not many anglers know more than the name of the mullet.

3682. *The Mugil, or mugilis*, of the ancient Romans is particularly common in the Mediterranean and Northern seas, and is found in occasional plenty on our southern and south-western coast, entering the sandy bays and rivers of the shores with the tide during the summer months until September. They are evidently in search of food, which they obtain by rooting up the ground in quest of the marine worms and insects which there abound; and this they do with so much violence, as to leave traces of it in the mud and sand. They never remain in these situations, but return to the sea with the ebbing tide. If Captain Williamson be correct, and there is no reason to suspect the contrary, they are not forced to this return by any inability to remain in fresh water, for he asserts that they are found in the Ganges even as high as its source. "They are something like the dace in shape, yet much thicker; the head is almost square and flat on the top, the nose blunt, and lips thick; they have no teeth, only the upper lip is a little rough, as is also the tongue; between the eyes and mouth is a hard callus; the pupil of the eye is black, encircled with a small silvery line; the colour of the back is dusky, varied with green and blue; the sides silvery, marked with broad dusky parallel lines reaching from head to tail, which is much forked; the scales are large and deciduous, and are also upon the covers of the gills and head, and extend as far as the nostrils. The largest of them are nearly half a yard long, and the flesh is excellent."

3683. *It appears the red mullet* (*Mullus surmuletus*, Linn.), when the luxury of Rome was at its height, held a conspicuous place in their entertainments; and for these, according to Juvenal, enormous prices were occasionally given. "Six thousand pieces for a mullet gave," is part of a poetical quotation we have elsewhere had occasion to introduce in proof of ancient luxury. Seneca, however, says that the mullet was not worth a farthing, except it died in the very hand of the guest. It was not unusual for a Roman to say, "In other matters I may confide in you, but in a thing of this moment, it is not consistent with my prudence; I will trust nothing but my own eyes; bring the fish hither, let me see him breathe his last." Such was the luxury of the times, that there were stews even in the eating-rooms, so that the fish could at once be brought from beneath the table and placed upon it, where the mullets were put in transparent vases, that when expiring, the changes of their rich colour might entertain the company, who all agreed that nothing was more beautiful than a dying mullet. Apicius had the art of preparing them for the table still more luxuriously, by suffocating them in the exquisite Carthaginian pickle, and afterwards procuring a rich sauce from their livers."

3684. *The salacity of the mullet* was an object of peculiar notice among the ancients, and Gesner (*De Piscibus*) notices that the male will pursue the female even after she is captured till drawn on shore. This propensity probably gave rise to a barbarity which, however tolerated by custom, we cannot suppose could have been sanctioned by laws even in those times of singular retributive justice. Juvenal and Horace allude to it as practised both by the Athenians and Romans, among the various modes which rage dictated to an injured spouse to revenge himself on his dishonourer.

> "Necat hic ferro, secat ille cruentis
> Verberibus; quosdam mœchos et mugilis intrat." *Juv. Sat.* x 316.

3685. *Angling for the grey mullet* is practised with the lug, lurgan, or sea-worm, either with a leger-line or with a float, strong line, and a barbel wire hook, No. 6 or 7. They will also take earth-worms in all their varieties, particularly the red; and it is said the blood-worm is likewise very attractive to them at times; but on this point we have no experience of our own. Whatever worm is used, the hook should be well covered, and have but little of it hanging loose, or they will suck it off; and when gentles are employed, which bait they sometimes take very well, put four or five on a hook, No. 8. Worms and gentles succeed best with them when the water is a little discoloured by either the rising or falling tide, particularly the former. With a float, fish with two hooks, sink the first to within six inches of the bottom, and the second eighteen inches above the first. It is necessary that all the tackle, rod, line, and hooks be strong; for these fish struggle violently. Of course they are seldom fished for but from a boat, particularly with a ground bait; a fly sometimes is used from the shore. Oysters are good baits.

3686. *Fly-fishing for the grey mullet* answers best when the tide is flowing in, and before the water thickens at all: at these times the mullet are very sportive, and swim in large shoals, and an hour or an hour and a half's excellent sport is often gained with almost any moderate sized fly; but in this respect they are capricious, and a variety of flies should be carried, both as to size and colour. We have known them one day take nothing but a palmer, and a second the smallest winged flies. A pair of wings on a hook No. 5., with its barb covered by a bright gentle, will often prove killing. Some anglers use the natural fly, particularly the large house-fly; while the tipula, or harry-long-legs, is preferred to others. Both of these methods of taking mullet are practised along the whole stretch of the Sussex, Hampshire, and Devonshire coasts, in most of the creeks, bays, and rivers, where a sandy bottom affords a harbour for the lurgan, and other sea insects. As the tide ebbs, again attack them by bottom fishing.

CHAPTER X.

FLY-FISHING.

3687. *In whatever point of view we regard fly-fishing*, its superiority over every other method of angling is striking, and universally acknowledged; neither are we inclined to believe that the most ardent lover of the float or ground practice, could make more than a feeble stand in attempting a comparison between them. We are willing to allow that the one is more universal in its application than the other, there being but few fish that may not be tempted by some variety of bait under the water, while there are many that cannot be taken on its surface. Nay, we will concede that there are many more days in the year in which the bottom fisher may exercise his skill with better prospect of success, than the most judicious and persevering thrower of the fly could reckon on. Yet the skill required in the formation of the imitative baits, and the innumerable little niceties which are afterwards necessary to show them in the most natural and tempting manner to creatures not more voracious than wary, being duly considered, must give to the fly-fisher's pursuit the palm of intellectual superiority and more refined exertions. As regards bodily health also, the constant motion may be supposed to improve it in fly-fishing; while the more sedentary character of bottom fishing sometimes proves injurious to it. The greater cleanliness of the fly-fishing practice is likewise very much in its favour with many persons.

3688. *Is the fly bait offered to the notice of the fishes* necessarily a just representation of any individual living insect which it is known that fishes seek and devour? or do they take any thing that has the semblance of living matter? This question may excite surprise among some of our readers; but if we believe the Scottish anglers, the flies which capture salmon and trout are not necessarily imitations of any existing insects, winged or otherwise; and this opinion is so strongly maintained by some of the best fishers there, and by the best naturalists also, that it does not become us too lightly to condemn it; at the same time we should by no means recommend our readers to adopt it, without much farther observation and close attention to the effects which followed both the imitative and the non-imitative practice. If Professor Wilson, who warmly advocates the inefficacy of all such imitations, be not mistaken, then he never gave so fatal a blow to an art he affects to be enamoured with, and one he so zealously pursues, as when speaking of the artificial fly, he says, that "the fish are deceived by an appearance of life and motion, rather than by a specific resemblance to any thing which they had previously been in the habit of capturing. The accomplished angler does not condescend to imitate specifically, and in a servile manner, the detail of things; he attends, or ought to attend, only to the great and invariable ideas which are inherent in universal nature. He throws his fly lightly and with elegance on the surface of the glittering waters, because he knows that an insect, with outspread gauzy wings, would so fall: but he does not imitate (or, if he does so, his practice proceeds upon an erroneous principle), either in the air or in his favourite element, the flight or the motion of a particular species, because he also knows that trout are not very conversant in the peculiarities of species, and that their omnivorous propensities induce them, when inclined for food, to rise with equal eagerness at every minute thing which creepeth upon the earth, or swimmeth in the waters. On this fact he generalises — and this is the philosophy of fishing." (*Encyclopædia Britannica*, art. ANGLING.) This opinion is every day gaining ground in the North, and without any improper bias to our own long settled opinions, let us examine the rationale of the matter a little further, for the advocates are neither few nor contemptible. Professor Rennie tells us, that "the aim of the angler ought to be to have his artificial fly calculated, by its form and colours, to attract the notice of the fish; in which case he has a much greater chance of success than by making the greatest efforts to imitate any particular species of fly." But let the angler still hesitate before he gives up his opinion even to such authorities as these. If he adopt these principles, he at once gives up all claim to invention and intellectuality in his occupation. We however think we can do something towards unravelling this discrepancy of opinion. How very seldom have we found such opinion to take root in the practised trout fisher of England; and may we not account for that by our knowledge that the object of his pursuit is indigenous to fresh waters only, and consequently seeks both above and below such waters the natural edible living objects which surround him, as fishes and insects in all their varieties, and under all their transformations. Now we have to remark, that salmon do not always feed in fresh water, nor do they reside constantly in it, and as their feeding grounds are in the sea and their food small fish, they are not used to winged insect baits. If this be taken into consideration, it will account for the erroneous opinions of those who affect to consider that any striking matter represented will raise trout, and hook them. Would the tipula be as really taken by trout during the May-fly season in mistake for that fly? We need not answer this question; and if this be the case, and the assertion true, that "any insect with gauzy wings will as readily attract as the ephemera," then indeed our practice has been bad, and our instructions erroneous. Bainbridge, we conceive, was of a similar opinion when speaking of a fly (but be it remembered it was of a *fancy* fly), for salmon, he said, "However fanciful or varied in shade or materials, it will frequently raise fish when all the imitations of nature have proved unsuccessful: indeed, so fastidious and whimsical are the salmon at times, that the more brilliant and extravagant the fly, the more certain is the angler of diversion."

3689. *Sir Humphry Davy* says, "I imagine salmon take the gaudy fly, with its blue king-fisher and golden pheasant's feathers, for *a small fish!*" Brother piscator, if this doctrine apply to trout also, then you and ourselves must have been dolts indeed to expend our time, our labour, and our money, in forming critical likenesses of innumerable varieties of flies to no purpose, when half a dozen balls of worsted, or even old ravellings of striking colours, wrapped around a hook, would have answered our purpose to the full as well as our elaborate dressings, our critical buskings, and our accurate types of the various flies as they make their sessional appearance. If the coldness of the Scotch climate will not produce insects, then both salmon and trout must take what they can get, and they may rise even to a crude bunch of worsted from an old stocking; but let you and ourselves as southrons dress our mimic representations after the real insect, if we mean to deserve the character of accomplished fly-fishers. Nevertheless, we thus write with all due deference to Professor Wilson, who was well known to be a profound philosopher, an accomplished naturalist, and a first-rate fisherman. We lament, however, that some of the best fishers in Scotland hold all entomology and the imitation of particular flies cheap. A writer in *Blackwood's Magazine* says, that "the success of the fisher does not depend upon any selected flies, and is scarcely in any way connected with the resemblance of what subsists between his fly and the natural one, in imitation of which it may have been formed. On the contrary, a fish seizes upon an artificial fly as upon an insect, or moving thing *sui generis*, not on account of its exact resemblance to any accustomed and familiar object." This writer instances dragon-flies, which, although they catch fish, and are called dragon flies, are as various as possible, and as gaudy as different colours can make them, and are as readily taken by fish in the conclusion of winter and early spring, before any fly of the kind makes its appearance: he thinks, also, that borne down the stream they cannot represent the fly in its natural state. " What, at such times," he asks, " does the palmer, or half the killing flies represent?" We also ask, " Is this argument?" Has not the keen-eyed fish the power of recognising the fly when borne down the stream, as well as when dancing in the air? As regards the capture of trout, we need not insist on the effect which insect food has on their nouriture. An experiment judiciously conducted, purposely to settle the point of the most nutritive food for trout, proved that when fed on flies only they increased in size rapidly. The opinions of Professor Wilson and Sir H. Davy, which we have quoted, are not held of much value amongst practical anglers. Salmon in fresh water will take the smallest living fly, and we have killed them with a natural fly as small as the March-brown. They take artificial flies for flies, and not for birds.

Sect. I. *The Manufacture of Artificial Flies.*

3690. *The most common observation of winged insects*, when within the reach of fishes, will convince us that they are, on every suitable occasion, greedily devoured by many of the finny race; and it would seem, therefore, to follow as a matter of course, that they would prove most eligible baits in the hand of the angler to ensnare them with. It however happens, that although we do take fish in many instances in great numbers with the living insects themselves, yet so much inconvenience attends the operation of *natural fly-fishing*, that with these alone the practice would never become, as at present, popular and fascinating. The insects themselves are by no means always easy to be obtained; and when they are taken, and hooks are baited with them, there is very great difficulty in retaining them on the hooks, however well placed. Insects, therefore, not only require to be continually renewed, but under no circumstance can we cast them beyond the margin of the water; submerge them, and they are either lost or useless. The manufacture, therefore, of such accurate artificial representations of them as can readily deceive the fish and lessen the difficulties of the angler, originated from these inconveniences. Winged insects, in angling language, are all comprehended under the general term of *natural flies;* the imitations of them are called *artificial flies:* and it is therefore evident, that on the fidelity with which the natural insect is represented, the success of the practice of *artificial fly-fishing must* principally depend. It is also our most decided opinion, that *fly-dressing* and *fly-fishing* are so closely connected, that it is not possible to separate them without mutual disadvantage; and thus, while we should hesitate to purchase flies of any dresser who was not likewise a fly-fisher, so we are unwilling to allow that any fly-thrower, however good, can be wholly successful, or entirely deserving the character of an accomplished fly-fisher, unless he can manufacture his own flies, and that with dexterity and correctness. We venture to hope that the candid angler, who will travel with us throughout our detail, will be fully sensible of the justice of these our assertions. Some however have attempted to prove (and we allow that a hasty or superficial view of the subject might seem to favour the opinion), that the qualification of fly-dressing is not essentially requisite to the practice of fly-angling. It is not uncommon even to hear it asserted, that the art of fly-making is totally unnecessary to a fly-fisher, as all the flies that are wanting can be readily purchased, and of much better make than those manufactured by the amateur. We however do conceive, that this is in a great degree erroneous, although not to be wondered at, when so stated by persons interested in the subject. Be it however remembered, we are not prepared to deny, but to admit, that the art of fly-dressing, as it is termed, is now carried to an extreme nicety of workmanship, and to great fidelity of representation in the type to the original. For twenty years we made our own flies, and during that time we were very successful, and consequently were not a little prejudiced against all flies made by tackle-makers. Experience has, however, taught us better. It is true that even now, when " the sear and yellow leaf" encircles our brow, we should not think ourselves equipped for the river without the means of imitating any unusual fly which we found exciting the fish of any particular district. It is at such a time that skilfulness in fly-dressing well becomes the fly-fisher, for being ready at imitation, and well provided with the means, he sits down, and in ten minutes he is furnished with an insect representative, which readily deceives the fish on the feed. In most respectable fishing-tackle shops fishing flies may be bought; but perfect imitations of the natural flies, in all their sessional mutations, are not always so certainly to be procured as Mr. Salter seems to insinuate. Our directions are, to find among the vendors of fishing-tackle such as are known themselves to be able practitioners of fly-fishing. If such are found really to make their own flies, or at least to have them dressed under their own eye, and from patterns true to nature, buy there without fear. When our hey-day of the fishing mania was on us, as already observed, no flies but those made by ourselves pleased, but when we extended our tours to distant counties, we found ourselves obliged to consult the native artist, both in the matter of which the killing flies were composed, and the manner of their dressing. We, therefore, found that the provincial artists were valuable aids; and further experience has proved that flies, and killing ones too, can be procured from such sources. We, however, confess we were not always so tolerant towards the flies of the shops; but the periods we allude to were some five and twenty and even thirty years ago, when fly-dressing in the trade was by no means so well understood as it is now. In our later sojournings we found, wherever we went, that some professional makers and some venders of flies were localised there; which flies owned some specialties that really were necessary to be presented to the local fish to insure their capture. The London dressers of flies (some of them particularly) are very accurate dressers to pattern; some, however, are less particular; it therefore behoves the purchaser to know what he wants, and to buy only that. The diagrams which head each month in our descriptions were purposely dressed to an entomological description of each insect, and we think they will be found faithful representations of the insect intended. It would have pleased us to have been able to present them in their varying colours also; but the vast number which would have been required for a work like this, of extensive circulation, would have made it utterly impracticable. We cannot also but feel it equally a duty and a pleasure to state, that the originals from whence our types were made, were gratuitously furnished by Mr. G. Bowness, jun., of 33. Bell-yard, a very able artist in the manufacture of fishing-tackle generally. These flies being standards, Mr. Bowness engages to keep by him so numerically arranged, that a letter by post, stating the number of any one or more of the flies specified in the text, will be returned by post, which arrangement we conceive will be very convenient to the angler when on his travels. We can also recommend the salmon flies, in their varieties, as of the most effective kind, and which also are numbered for the accommodation of the angler. We have divided them according to their local excellences, it being found by our most experienced salmon fishers, that while very large and gaudy flies attract in the Irish waters, and in a degree in the lochs and rivers of Scotland and England, more sombre tinted flies prevail in the Welsh waters. Of course, exceptions in both cases will be found to arise. We have likewise reason to know that both shops which bear the name of Bowness, in Bell-yard, can furnish good fishing-tackle: they are both reputed makers, and both deserve the encouragement of the public; and we owe them our acknowledgments, on our artist's account, who was gratuitously supplied with some ingenious articles; but it is to Mr. G. Bowness we are indebted for our flies, for our engagements would not allow of our own dressing. We hear much and we read much of the Dublin tackle, and sometimes of the Scotch tackle also — each excels in some particular articles. However, at present the best rods and flies are made in London, though the best hooks are made by Phillips of Dublin.

3691. *We are not, however, prepared altogether to deny*, as regards the flies to be purchased of general venders of fishing-tackle, that too many are supplied from wholesale fly-makers but little acquainted with the natural flies. It is not uncharitable to suppose, that the majority of these may be indifferent to any thing but dispatch in the execution, and neatness in the finish. With all our approval of the flies now dressed, it may therefore yet happen that they will not present that typical accuracy to deceive trout or grayling to take them, although both of these fish may (as is often the case when an ill-dressed fly is shown) rise to it and immediately turn short away. We will grant even that the flies of such makers are seen to take fish; it is, however, only when they are in the humour to take any thing, as sometimes is the case; but when any of such fish are really on *the feed*, particularly on any one tribe of insects (which is the time when the professed angler is on the look-out for his best sport), it is then not at all unlikely that his collection will not present the immediate likeness of the fly on the water; and without it, perhaps not a single fish can be stirred. This is no fancied case, but one of frequent occurrence; and until we dressed our own flies, it happened to us almost every day we went out. No remedy, therefore, for such a dilemma exists, but that the fisher be prepared *to set himself down and dress an exact imitation of the passing fly.* Whether then you dress your own flies or not, be at least able to do it, and the sport which follows will then be infinitely more delectable for the occurrence. If the angler be a traveller to any considerable distance, he will find it still more necessary on many occasions to imitate the local flies of the district he passes through, for these continually change as he proceeds, not only in kind, but the individual insects of one locality, operated on by the agencies around, present a very different aspect from those of another: thus, in northern waters, where the development of the insect frame is not so complete, the full-bodied flies of the south would in most cases be refused.

3692. *In our early piscatory wanderings* we carried with us a full London-dressed set of flies into Derbyshire, and for two or three days we flogged the waters of the Dove with them with great perseverance, but with very indifferent success, until we met with an angling barber, who gave us a very small Mackarel fly, dressed with a grouse hackle and blue-dubbing. As long as the Dove flowed between the rocks in the exquisite scenery of Dove-dale, represented by a drawing made by us on the spot (*fig.* 550.), this fly was most killing; but so local are insects as baits, that when the stream entered the more open country, not two

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DOVE-DALE.

miles distant, our barber friend showed us practically, that the favourite mackarel fly must be changed for a new wing and another body. Again we were successful, and yet neither of these flies or any thing like them had we ever seen in a London dresser's case, replete as such repositories usually are with fancy flies. Whoever has travelled extensively on fishing expeditions, must know as well as ourselves, that there are local flies, and killing ones too, beyond the contents of the best London collection: and he must also know, that without good imitations of these, the best sport is not to be expected at particular times, and more especially when the water is low and fine, and when such flies are in their full season This likewise may happen when no friendly barber is at hand, or if perchance one or two may be begged from some passing angler, yet a stock cannot be procured, probably, at any price. Which therefore is the most to be envied, he who has merely the money to buy that which cannot be purchased, or he who has the material and the art to make what even poverty could not deprive him of? We presume therefore that we need not to farther press the advantage to each fly-fisher of being able to make his own flies: if he travel much, it is more indispensably requisite, for should he carry with him a host of winged baits, the most killing are, in all probability, not amongst them. They are all Johnny Newcomes, and the wary trout seeing no old acquaintance, turns tail and makes for his hide. It matters not that the flies he took, *to look at* by a human spectator, were bewitching, and their effects were warranted to prove more wonderful than the lamp of Aladdin! But he did not reflect that what may kill on some rivers, here only alarms: and we have positively known a person try twenty different sorts of fly, without being once able to raise a single fish, or at least to hook one (for it is well known that they will in frolic rise to every thing); in such case, his patience becoming quite exhausted, with a hearty exclamation he sends fish, line, rod, tackle-maker and all, at once to the d—l. We therefore propose to offer such a list as shall include the entire fishing entomology of England, Wales, Scotland, and Ireland, presenting, as we hope, a faithful description of every popular fly, and the best method of *dressing*, as it is termed, the mimic representation of it; adding also the many names, scientific and popular, which authors have designated it by. We are likewise happy in being able to fill up this want of figured and coloured exemplifications, by recommending to the angler's notice ***Bainbridge's Fly-fisher's Guide***, and the ***Fly-fisher's Entomology*** of Alfred Ronalds, as both combined depict the insects and their types in the natural colours. We proceed therefore to this task, observing however that locality, caprice, and direct ignorance, have together so bewildered us with local names, and with others that have been superadded by fancy, or by mistaking one fly for another, that our task is in no small degree increased; and if others more critical than ourselves should detect some errors in our catalogue, we hope that candour will impress them with a conviction that our task has been one of no ordinary difficulty; and we therefore claim to have a lenient eye cast over our entomological catalogue. Considering the necessity that all fly-fishers, but more particularly such anglers as do not confine themselves to any one district but rove at large, should be capable of imitating the favourite flies of the localities they visit, we forthwith shall proceed to initiate such in the art. At the same time we would fain impress on them, that it will greatly facilitate their acquirement of this art, if they can procure two or three *practical* lessons either from a professional or an expert amateur artist.

Sect. II. *The Materials necessary for Artificial Fly-making.*

3693. *The substances employed in fly-dressing*, as the making is called, are many and diversified. Every part of Nature is ransacked for the purpose, and a complete list of all that may be wanted would occupy no small space. The most prominent of these matters are derived from the coverings of animals, as fur, hair, wool, and feathers. Camlets, mohairs, worsteds, &c. &c. as products of the same cast, are equally sought after. The internal parts of animals likewise yield us most important requisites in the form of silks, silk-worm gut, and wax; while vegetables offer us grass for lines, thread for whippings, and many other minor matters. The articles used in making artificial flies being very numerous, ought to be kept distinct and well arranged in a set of boxes or drawers, which drawers or boxes should be made with a scrupulous regard to their shutting so close as to exclude moths and other visible insects. Those insects which are invisible, yet still more destructive, will require other means for their exclusion. To this intent we kept our very choice and perishable articles in turned-screw boxes, having one very well fitted with screw-turns; and this we found the best preservative. The general stock of articles may be kept with much convenience and neatness in a small bureau. Into each drawer, box, or compartment, put some one of the *preservative powders* used by persons accustomed to preserve their furs and cloths, particularly where wool, fur, or feathers, enter their composition, and renew the camphor or pepper occasionally, keeping the more important matters folded in vellum; and over that place a linen covering, which will preserve them free from moths, &c. No covering however, not even the closest fitting of boxes or drawers, will prevent the attack of the dermestes, which are so minute as to escape the naked eye; these therefore can only be resisted by the use of a powder made as follows:—Take oxymuriate of mercury (corrosive sublimate) one part, camphor six parts, pepper and tobacco ten parts each: powder these finely, and when a mixture has been made of the articles, preserve it in a well corked bottle, sprinkling the various matters therewith every few weeks. From the stock collection the fly-angling pocket-book should be stored with a minute assortment of all the various articles, which should also be sufficiently embued with the preservative powder above noted. Turpentine is an excellent preservative.

3694. *For fly-making the requisite materials* may, in many cases, be obtained from a fishing-tackle shop, and where despatch is necessary, or opportunity does not occur to procure them otherwise, it may be done with some saving of trouble; but when the following items are specified, every one of which is requisite, it will be evident that there is little chance of meeting with all these articles genuine at any shop. Substitutes would undoubtedly be provided by the vender, which the ignorance of the beginner would prevent him from detecting; or he would discover the error too late to remedy it. We therefore recommend him, if he be in earnest to become an artist in fly-making, to procure the articles for himself from the most original and undoubted sources, which will prevent future disappointment. How many fishing-tackle shops, particularly of the lower class, might an angler call on before he could get the wren's tail feather? Or, in the long list of other feathers which we shall enumerate, how many would the purchaser find altogether wanting; or, what would be much worse, have such substitutes palmed on him as would frustrate his best endeavours? Is it, for instance, very probable that he would meet with the pure dun feather of the blue game-fowl? It is not impossible, but very improbable. The supposed genuine dubbings are but too apt to be made up by substitutes: there are, indeed, but few dressers for sale, who are in possession of half the variety of furs which the critical artist would require; and we appeal to the experienced fly-dresser whether our statement be not correct. It follows therefore that the beginner, in selecting his articles, should be most particular to apply for them at the most probable sources, *i. e.* shops of established character.

3695. *To procure furs*, recourse may be, with propriety, had to a furrier, of whom may be obtained strips from skins of almost every variety. Those most wanted will be bear's, grey, black, and dun, of every shade; badger's, sable, and martin's fur, particularly the parts about the head of the former, and the yellow spotted portions under the jaws of the latter; squirrel's fur, American and English; those also of the water and the house rats, field mouse, mole and seal, both dyed and natural. Secure likewise whole skins of the sandy and grey rabbit in all its varieties; and also of the ferret and polecat. The hare's skin, too, must be procured, the head and ears particularly, for they yield some valuable colours.

Occasional skins, of all kinds, should be looked over when they fall in the angler's way, and any striking portions preserved. The white mole is valuable.

3696. *Of hair*, that of calves, of colts, and of cows, of every colour and of every part, should be collected. Dog's hair, particularly that of spaniels, and others with long silky coats, must be preserved. About the ears of the silky coated spaniel, some of a very fine texture and rich colour, may be always met with. The tan of the black spaniel, and the tawny, all of them are good and worth selecting. In long wiry haired animals of every kind, there is at the roots of the longer hair a fine woolly substance to fill up the interstices, and to give warmth. This should be looked for in all skins, as it presents shades very different from the general exterior hue, and often produces the richest and finest dubbing that it is possible to meet with. Cuttings from the skin of the fox, both young and old, should by all means be procured; indeed, there is no part of the body of this animal from which valuable shades of fur may not be taken. Some hairs also of the stiff kind, from the skins of goats, bears, monkeys, and other animals, should be saved by themselves, as those also from the beard of cats, dogs, and badgers, and from the tail of ferrets or polecats, which must be preserved to form the whisks or appendages to the tail of the May-flies and duns, and the antennæ or horns of the stone, willow, alder, and other flies of the *Phryganea*, as well as of other insect families. Hogs' down, of all colours, will be found useful, and may be readily procured by parting the bristles; the bristles themselves also will be wanted on many occasions. This down, it must be recollected, will prove very valuable for dubbing, as it bears the water, and retains its lustre when wet; it is further valuable, as it may likewise be dyed to any colour. Camlets and mohairs, of every hue, are necessary appendages to the fly-fisher's well stocked bureau. By no means forget a claret colour for the making of the claret bodied dun and some others, and a bright yellow for the little May-fly; black and white furs, also, are useful in completing the assemblage.

3697. *Of worsteds of every variety of shade*, we should strongly recommend a full assortment to be at hand; for large flies they are particularly excellent. We have heard of an angler who fished in the Highlands of Scotland successfully with flies made from worsted alone; and though we pretend not to vouch for the fact, we can vouch for being informed of it by a person of much apparent credibility. Our own experience also proves, that worsteds are of great use in the manufacture of some flies: the cowdung-fly, which is a most important one, cannot be properly made without it; nor, in fact, can the body of any rough fly or caterpillar be so well represented by any other article. Pick up therefore from remnants of Turkey carpetings whatever is striking and not common. In the dyeing of worsteds, if some varnish could be introduced which would render them not likely to retain moisture, it would add much to their lightness and buoyancy, for the want of which they are apt to sink in the stream. Mohair by many is preferred to worsted.

3698. *Feathers are the sheet anchor of fly-making*, and cannot be procured in too great variety. From the gigantic ostrich to the diminutive wren, there is hardly one but will occasionally come into use. The ostrich harl (or individual fibre of the feather) is used of its natural colour, and also, when dyed, of various tints. The peacock harl is likewise valuable for its glossy hue, and it would be next to impossible to dress some palmers without it. Among the larger birds, the fibres of whose feathers form the wings of artificial flies, may be reckoned the turkey, pheasant, wild duck, widgeon, and teal; the sea-gull and plover, grouse, woodpigeon, woodcock, coot, plover, water-hen, and partridge, all which are valuable tributaries to the angler's book. Among the smaller, the lark, the starling, the hedge sparrow, the swallow, and many others.

3699. *Brown colours* are obtained from the tail and breast of the mallard, landrail, from the cock pheasant, as well as from the wings of the hen pheasant, which furnishes some of the richest tints. Blues are yielded by the jay, woodpigeon, heron, the highly valued starling, and the snipe, whose blue feathers are a good substitute, indeed almost the only one, for those of the starling. In making the smaller flies where blue is required, we have ravaged the tail of the male tomtit to great advantage, as well as that of the wagtail, but the feathers of some foreign birds, which may be procured at the bird-stuffer's, are to be preferred even to these. The *unsunned* starling is the best.

3700. *Reds may be found in the common hen*, the cock pheasant, the goose, the turkey, the mallard, the landrail, and the thrush; but the finest shade is obtained from partridge's tail, and the next to that from the sheldrake. We always dressed the wings of the inestimable sand-fly from one or other of these materials, and we know of no substitute but the male landrail, and he is but an indifferent one. We may, however, here again take occasion to remark that at the bird-stuffer's the angler's wants may be supplied, and that from them foreign feathers of various hues may often be procured, with tintings which no native bird will supply.

3701. *The dun* hue may be found on the wings of the starling, the snipe, the blackbird, both cock and hen, but particularly the latter; and the landrail also can supply it: in fact, all those now specified are peculiarly worthy the angler's preservation. But where shall we direct him to get the invaluable dun-coloured feather? Will he, for the sake of purchasing a cock or hen fowl of this kind, travel to Wales, where they are more plentiful than with us? or will he visit Derbyshire, that he may pick up the breed and cultivate it? Wherever it can be met with (for it is scarce), it should be purchased at any price; for without it there is, or rather was, scarcely a possibility of dressing the principal varieties of the duns to perfection. Now however, where the natural feather cannot be procured by any means, we are happy to be able to add from Mr. Packer, author of *The Dyers' Guide*, a mode of imitating it to a considerable degree of perfection.

3702. *Hackles are the taper feathers* which deck the neck and rump of the cock; and thus, as this variety of feather is the principal matter in the formation of the palmer, so hackles and palmers have been used, in angling language, as synonymous. Such hackles only should be chosen as have fibres about half an inch long, and those from the game fowl are to be preferred. The principal colours for the angler's choice are white, black, grizzled, grey, ginger, light red, dark red, and that variety in which the dark red is divided by a black listing. The dun or blue hackle, as already observed, is difficult to obtain, not only on account of the colour, but because, as it is wanted to dress minute flies (the duns), those of the dun cock are rather too long and gross, and those of the hen too weak, unless of some age. The dun hackle is seldom unmixed, being rather grizzled, or when not so it is apt to incline to brown. It should be observed, that the feathers of fowls must be collected (if possible) in winter, and always from mature birds: those of chickens or of bantams, of whatever age, are inadmissible. The male bird of every variety is to be preferred, as yielding a more brilliant colour. An exception however exists in the hen of the blackbird, and a few others. The lesser requisites for fly-dressing are silks of every variety of shade, and of every size, from twist to the finest marking silk. Flaw or floss silks should be procured also, as they occasionally assist in dubbing. Gold and silver wire flatted, or in fine twist, will be wanted for ribbing. Wax likewise, of every colour, must not be forgotten, and may be readily procured either in cakes or tapers at the wax-chandler's; but, except for very ordinary purposes, it should be of a more adhesive quality than mere taper wax, a requisite which has already been noticed, and provided for. Shoemaker's wax, from its property of consolidating and rendering bodies adherent, is well known to be one of the grand requisites in the making of fishing-tackle generally; but its colour is objectionable in some cases of fly-dressing; to obviate which, and yet to retain its advantages, the ingenuity of the artist must be exercised. But as no substance can justly supersede the shoemaker's wax, so the fly-angler must never be without a portion of it enveloped in a piece of stiff bladder or leather. Of hooks we have already treated, and of gut also; we may however add, that for the use of the latter a piece of caoutchouc, or India Rubber, must not be forgotten: the stiffest gut may be rendered straight, the roughest made smooth, by rubbing it with this material.

3703. *The instruments absolutely necessary for fly-making* are few; for the artist must learn to make his flies at the water side, by the help of his fingers alone, or he will not have attained the requisite proficiency. There are, however, some things which he may find to assist him when he makes his flies on a large scale; the principal of these is a small table-vice. A hook will allow of the twisting of hairs, and some holes in the surface will admit of spare hooks being placed in for use. When the vice is attached to a table, after the manner of the cushion-screw of the ladies, the little secondary vice may be screwed into either of the holes of the table-screw, and will then be found very useful to take a firm hold of a hook while the operation of winding is going on; or it may be conveniently used without the table-screw. For the making of very small flies, a pair of fine pliers which close together with a spring are constantly useful, in carrying the turns of the hackle close to each other. In the absence of these it is common to tie the end of the hackle by means of a waxed silk, which will answer the end as well, and in some cases it will do it better, as we shall show. A pocket knife is also required, with two pair of scissors, of the very best manufacture, one with long and fine blades, ending in the sharpest and finest points, the other with short stout blades and large finger loops, but quite as correctly pointed: a minute file may be added to the knife. A large needle fitted into a small handle is likewise useful to pick out the dubbing, and to free the fibres of the hackle when necessary.

3704. *The dyeing of fly-fishing materials* is a branch of knowledge highly useful in our art, as it occurs sometimes to the angler to be forced to alter the colours of his dressings: thus it is occasionally requisite to dye feathers to a particular pattern, as the mottled feather of the mallard, to imitate which is essential in dressing that variety of May-fly, which, by a curious misnomer, is called the *green drake*, although it is dyed yellow. To dye these feathers a permanent yellow of a peculiar shade, slightly approximating to a light green, has always been a desideratum with anglers, and various recipes have been given for that purpose, from which the following may be selected: — 1. "Take the root of a barberry tree, and shave it, and put it to woody vis, the size of a walnut, and boil your feathers in it with rain water, and they will be of a very fine yellow." (*Walton*, edit. 1808.) 2. "Scrape a small quantity of the bark of the mulberry tree, or bruise in a mortar the root; add to it a lump of alum, and one or two dozen grey feathers of a mallard; boil them in a pint of rain water, in an earthen pitcher, about an hour, and you will find them the colour you wish." 3. "Put a handful of horse-radish leaves into a pint of water; to which add a piece of alum the size of a small walnut; simmer the whole for some time, and it will then dye feathers, silk, &c. a yellow of any depth and fast colour." (*Salter*, p. 261.) 4. "The best dye for all yellow materials used for artificial flies is the bark from the branches of a crab tree, taken in the spring when the sap is up. Before you use it, put any quantity that you want into a vessel, just cover it with a mixture of one-half hard water and the other half urine, and let it stand twenty-four hours; then put it into a proper vessel, with some alum, according to judgment, so that it simmer over a slow fire about two hours; stir up all well together, and take out the bark; then put in your feathers and other materials, and stir them round till the liquor just begins to boil; then take them out, and instantly throw them into some hard cold water, with a little alum dissolved in it; wash them out and dry them for use. You may make the shades of this colour vary by dissolving more or less of the bark, according to judgment, or letting the materials be in the dye a longer or shorter time." (*Taylor's Angling.*) Or, 5. "Gamboge, dissolved in spirits of wine, will impart a fine yellow to the feathers, if they be first boiled in strong alum water." Mr. Packer, the author of the *Dyer's Guide*, has, through the medium of a sporting work, furnished the angler with several recipes for the purpose. His yellow dye for feathers is as follows:—"Into a saucepan three parts filled with *soft* water, put the feathers to be dyed, and when they are thoroughly wetted add a small quantity of sulphate of iron. Simmer them over a moderate fire a few minutes, and the feathers will have gained the colour base, or mordant. Remove the liquor from the feathers, and put to them instead a smaller quantity of *soft* water as at first, and when it is of a simmering heat, add a small quantity of powdered Aleppo galls."

3705. *The requisite shades of dun colour may be obtained* by varying the quantities of the iron and galls. If it be wished that the feathers should be of a full dark dun, both the sulphate and galls must be in sufficient quantities: increasing or diminishing either of these articles, without altering the quantity of the other, will produce variations in the shades for the angler's choice. If logwood be used altogether, in lieu of galls, a different tint will be the result. Madder, camwood, the bark of the alder tree, walnut peels, &c. procure different hues. Galls, logwood, and madder, should however be omitted when the colouring is intended to approach to a red or brown. The light shades in all cases should be first gained, and any other deeper hue added afterwards. Hard waters alter the shades considerably and injuriously. Having given to the feathers their mordant or base, as already directed, add either sulphate of iron, sulphate of alum, acetate of alum, or acetate of copper, according to the intended shade. Wash the feathers from the mordant, and put them into a strong decoction of that plant which the dyers call weld. Simmer them in this a few minutes, strengthening or weakening the weld decoction, as the colour is to be more or less brilliant. A little practice, and the noting of the various results after each trial, will soon make the angler familiar with the methods of varying the colours so as to meet his wishes. These instructions, Mr. Packer states, apply to wool also, which may be tinted in the same manner.

Sect. III. *The Operative part of Dressing or Tying Artificial Flies.*

3706. *Those who possess many angling books* will find that *making*, *dressing*, *tying*, and *busking*, are synonymous terms used by writers indiscriminately when treating on the manufacture of artificial flies. *Making*, though a correct term, is not in angling language so expressive as dressing, tying, or busking, particularly the latter, but which is, however, somewhat provincial. We must observe, in regard to the subject on which we are entering, that with all our wish for reform, time has fixed such a technicality (we introduce the term as it is often popularly used), both in the articles employed, and the operations pursued, that we should find it difficult to make ourselves understood by many angling sportsmen in any other language than that which appears on the face of our books of directions. Nay, we believe such hold has the present angling phraseology on the professors of the art, that were we to deviate altogether into terms more precise and critical, we should find our instructions disregarded, and ourselves suspected of mere pretension supported by little knowledge of the matter. Previous, therefore, to our detail, we deprecate criticism in our use of many conventional fly-making and fly-fishing terms, which we know are not to be justified by either literary or scientific rule. Some of those which time has fastened on us are, however, so glaringly absurd, so perfectly contradictory, and so unnecessarily multiplied, that they even tend to bewilder the beginner, as they did ourselves, in a labyrinth, which requires much time and trouble to get rid of. Some of these we shall therefore omit in our descriptions; but there are others so inseparably connected with our piscatory writings, that we cannot at present abandon them. The anomalies of a few such as might make our readers stumble at the very threshold, we shall notice at our outset.

3707. *The terms dub-fly and dubbing* are of this kind, both of which have been, and still are, used in our books in an obscure and even contradictory manner. *Dub* appears to have been an old synonyme of fly. In the *Boke of St. Alban's* we read of "*dub* or *flie*, or progeny of palmer," and as such every winged fly was a dub-fly, and so it is probable the angling signification intended it; and the artificial dub-fly was considered to be a fly body made on a hook, to which wings were afterwards added, from whence the materials necessary to form a fly body came to be called *dubbing*. Nevertheless, by some forced construction, dub-fly in our books is often used to denote a fly itself with a *large* body, which is to be artificially represented by a *bulbous* mass of wool or mohair, and of those materials only. This notion, however, all well-informed dressers have laid aside; dubbing in our description therefore shall be considered as denoting the materials of which the body of an artificial fly is composed, let them be of what kind they may. Buzz and buzz-fly is one of the old names which had been applied to very different insects, and also to the *larvæ* of insects, and is even at present unsettled in its application. Popularly, as regards insects, the buzz-fly is a fly in a buzzing or *whirring* attitude: and it appears to have been in angling language intended to signify either beetles or bees, or, with more probability, any insect of a buzzing form and hairy or rough aspect. This made the latitude wide, and it brought in the *larvæ* of some insects which are often massive and rough, and which were in olden times called wool-beds. The artificial buzz-fly, the representations of these *larvæ*, and those of short fleshy *larvæ* called grubs, and those also better known as caterpillars, but equally short and thick, from likeness in figure have been jumbled together and mistaken for each other; and in the course of time have so often borrowed each other's names, that it has become difficult to distinguish the insect or matter intended by the terms as they stand in some of the angling books. *Buzz* has often been applied by anglers to the smaller *Scarabæi* or beetles, particularly to the *Coccinella*, or ladybird tribe; thus we have the Marlow-buzz, &c. &c., intended by most who use it to signify a case-winged insect. The term however, if retained, ought to apply only to a group of such insects as, like the *Bumblebee*, are of a rounded button-like form, but of rough aspect.

3708. *The hackle* and the *hackle-fly* are equally unsettled in their application, and he must be indeed *intelligent* who can render all the accounts concerning them *intelligible;* for the denomination is found at one time to mean nothing more than the long feather of a domestic cock's neck, and at another is applied to a manufactured article for enticing fish: thus in one page the angler may find directions to prepare a hackle for the making of a fly, and in the next he will find instructions to begin his day's fishing with a hackle or palmer. The ambiguity of this Protean object is therefore now doubled, for *hackle* is not only a feather and a fly, as the angler chooses to have it, but the fly known to one as a hackle is called palmer by another; and so to increase our Babylonish jargon, we are struck with the appellatives of both palmer-worm and palmer-fly.

3709. *Palmer* (for which the hackle is frequently used as a synonyme), though a term constantly occurring in the pages of both old and new treatises on angling, is yet of equal and even more doubtful application than those already quoted. By it is intended, in one instance, an artificial bait of the fly kind; and thus we constantly meet in our books with directions to use at one time a golden palmer, and at another a peacock palmer, &c. &c. In other places, and in older writings particularly, palmer is intended to express the living caterpillar, which was heretofore called a palmer or pilgrim from its roving disposition; and as every thing which crept was in olden times popularly called a *worm*, so we as frequently stumble on the appellation of *palmer-worm.* Thus, as a proof of the inconsistency of our angling vocabulary, *hackle*, which at once means a feather and a fly, is synonymous with palmer, which expresses both an artificial fish bait and a living caterpillar. Henceforth we recommend to the angler to consider *hackle* as applying only to the hackle feather of a fowl; but as to the palmer, we have yet other difficulties to contend with; for as the lizard, when it has by creative genius mounted a pair of wings, becomes the dragon of fabled story, so the prolific powers of the ancient anglers occasionally bedecked their creeping palmer with wings likewise, and we thus as frequently read of a palmer-*fly* as of a palmer-worm. The term fly is evidently an absurdity, as applied to what was intended by palmer formerly, and even to what is intended now, except when it is proposed to consider it as the representation of a humble bee, which was a later view of it. It may also be called an anachronism; the wingless being, it is true, is in the way to become winged, but it has a long stage to travel before it becomes so. Nevertheless, conventionally viewed, the artificial insect called by this name is so mixed up with the winged types under one common appellation of flies, that with all our wish for etymological reform, we cannot, we fear, wholly abandon it; but we can in future prevent its misapplication by uniting it with hackle, which is another equally misapplied term. All artificial flies, therefore, may be classed under the terms of palmer-fly (or, as we shall hereafter generally call it, the *palmer-hackle*), the hackle-fly, and the winged fly; some would confine them to the hackle and winged fly only.

3710. *The palmer-hackle* we regard as a more expressive name than either palmer or hackle alone, the palmer being the thing represented, and the hackle the means of representation. This term will likewise serve to distinguish it from the hackle-fly. The palmer-hackle, in its simplest sense, is the long fibrous feather from a cock's neck, or his rump, called a hackle, when wound round a fishhook. It is, however, more often wound over a body previously applied to the shank; and when the shank of the hook is left long, the body made thin, and the fibres of the hackle are long, numerous, and well displayed, they resemble the *hairy caterpillars*, which fall from plants and trees into the water. When dressed on a shorter hook, with hackle fibres shorter, less displayed and less rough, it will represent young larvæ of insects, called woolly-bears or *wool-beds.* If it be made still more round, smooth, and snug, it may be the image of the *buzz-fly*, considered as *Bumblebee;* or, as the wetting smooths the feather, it may be taken for the *Coccinella*, or ladybird tribe, or other small beetle.

3711. *The hackle-fly*, although it may by some dressers be intended to represent some particular flies, yet intrinsically is only the winged fly dressed after a particular fashion, and remarked for the simplicity of its construction. A body being formed, as in the palmer-hackle, a hackle, usually one with long fibres, is wound over the body, not over the whole of it, but for rather less than the half of its length, and which hackle, so wound, is intended to represent both wings and legs. The winged fly is one of much more complexity of manufacture, and is formed by means of a portion of feather stripped off from the stem or quill, and being bound lengthways on the shank of the hook, is then elevated and divided, to represent wings, a body and legs being added by distinct operations.

3712. *The antennæ of flies* are called *feelers* or *horns*, and the appendicular caudal *processes* or *setæ* of the May-fly, &c. are termed *whisks* or *forks* by anglers. Some authors inform us that the addition of these is wholly unnecessary; but whatever may be said to the contrary, it is always prudent to add whisks to the made flies when they exist in the natural state, particularly the tail whisks of the *Ephemeridæ*, May-flies and duns. The antennæ are difficult to retain in their situation, and for that reason may be omitted; but at the same time, by making them of a short taper and moderately firm hairs, or a fibre of feather, they can be formed to show well in the water; and the stone-fly, and other large *Phryganea*, would be better dressed with them: the horns of the smaller kinds it is as well to omit altogether. Whenever either are added, we would recommend that attention be paid in adapting to nature the colour, size, and length. They may be made of the hairs of dogs, cats, and other animals, particularly the bristles of their beards; and sometimes by a fibre from the same feathers which formed either the wings or legs, according to colour. The primitive long hairs, which surmount the short fur of many of the skins at the furriers, are likewise good for that purpose.

3713. *We shall now proceed to give concise general directions* for the making or dressing, as it is called, of artificial flies; and in pursuance of the olden custom, we shall offer both figures and written descriptions thereof; but in justice to our readers we state, that two or three mornings spent under the tuition of any experienced fly-dresser, particularly one who not only dresses for sale to the public, but also practises the angling art himself, will do infinitely more than all the written directions we can offer, the principal uses of which are that they may recal and further indent into the mind what was seen under the tuition of the practical fly-dresser.

3714. *The preparatory steps towards fly-dressing*, whether it be a common hackle or a dubbed winged fly, are to place the whole materials in due order around you, after the method of Bainbridge and Alfred Ronalds, who both excel in valuable coloured illustrations of this subject, as well as written instructions thereon. If the weather be cold, it will be prudent that a warm room be chosen for the purpose, for as wax, and generally wax of a soft adhesive nature, is an indispensable requisite, so it requires such a temperature as will keep it pliant, to do the work at all satisfactorily; and be it observed, it is this which renders fly-making a work of increased difficulty in the depths of winter. Select a proper length of gut, which having ascertained to be perfect, straighten and render it pliant, either by soaking it a few minutes in warm water, or, if it be not very stiff, pass it a few times between the folds of a piece of caoutchouc, or India Rubber, which will answer the purpose more conveniently and as effectually. Next select a proper sized hook, which examine as to strength and temper by the method already directed. If dubbing be in the dressing to be used, proceed to moisten a little of the proper colours, to enable you to form a judgment of its appearance when in a moistened state, as most animal matters used in fly-dressing, particularly furs and camlets, become several shades darker when wetted. Were this not done, therefore, the fly as it left the maker's hands, however well it *then* represented the natural insect, would, when it reached the water, no longer be the same; on the contrary, in some cases it would prove the very reverse; this is, therefore, a matter which must be attended to. To ascertain the exact colour of the furs and camlets, it is usually directed that they should be held between the eye and the sunshine: but a good sight will readily detect the hue in any open day; for which reason it is by no means prudent to make flies by candle-light, unless indeed the materials have been previously arranged in the day. When the body of a fly is not formed from either worsted, camlet, or fur, a peacock's harl is often substituted, particularly in the making of the palmer-hackle: in such case, take care to be ready prepared with one of sufficient length to furnish the whole of the wraps. Having all the materials in preparation with well waxed silks, particularly some of the finest *marking kinds*, proceed to select and arrange the feathers necessary for the next stage of the business.

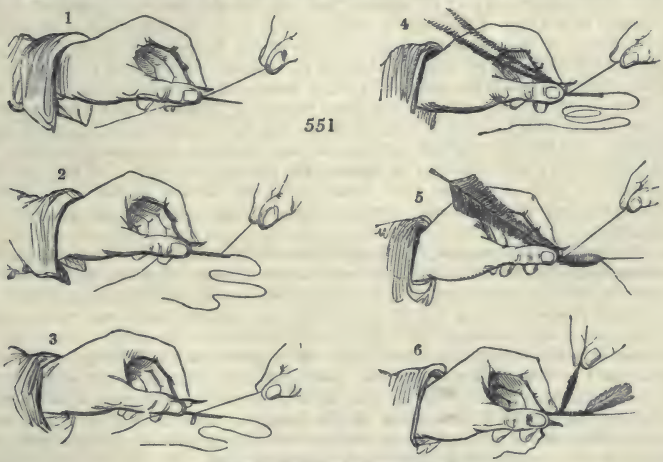
SUBSECT. 1. *To dress or tie a Palmer-fly, or Hackle.*

3715. *The dressing of a palmer-fly* after the methods we employed, rendered some little variation necessary, according as the body of it was intended to be formed of harl, or of fur dubbings. As a harl body is the most common, we will commence our instructions under that view; and we would request that the eye be referred to each figure, as enumerated in the cuts which follow hereafter from March. Place the finest end of the gut within side of the hook, as far as the bend. This done, and being prepared with some waxed silk of the prevailing tone of colour of the palmer-hackle about to be made, begin the whipping one turn beyond the extremity of the gut, by making a half hitch, leaving by its means a loose end of silk about four or five inches for future use. The other and longer portion of silk wrap very firmly over both hook and gut, until it has reached to within four turns of the top. Now place on the under surface of the hook the hackle butt, and on the upper surface the harl, both of them pointing forwards. Continue the silk very firmly two turns over the hackle, and the two remaining turns over the harl, allowing the hackle now to hang free from the silk. Observe also that the hackle, already stripped of its soft downy feathers near the root, be so placed that the upper surface of the feather may present itself when it is wound on towards the head of the fly. Having reached the extremity of the hook, make a half hitch, which will secure the silk from slipping forward; and now folding down the harl, make two turns of the silk back again, which will then leave an excellent head for the palmer-hackle.

3716. *When the body is to be formed of fur dubbing,* proceed in every respect in the same manner, with the exception of leaving a loose end; in this case inclose the silk in the usual manner, and carry the wrapping to the place where the hackle was introduced, which having secured by two turns, either continue winding the silk to the end, and allow the returns of it to form the head, or otherwise let the head be formed by means of the dubbing now added to the silk after a half hitch has secured the wraps. The older directions advise, that previous to this the silk be carried two or three turns round the bare hook; also that the point of the gut be singed to prevent its slipping; both of which in the manufacture of large flies, as those for salmon or very large trout, may be good precautions; but with smaller flies, firmly wrapped, and that not too thick, such precaution is not necessary. For it should be observed as a general and important rule in fly-dressing, that all that is essential for strength and safety should be done; but not even one *unnecessary* turn should be made, as it adds to the weight of an article, whose principal quality depends on its *lightness.* For this reason also be careful to clip superfluous ends of gold wire, &c. as close as possible in the operation.

3717. *In initiatory lessons in fly-dressing,* if they are to be learned from written sources, the matter treated on should be very clearly described. We have already favourably noticed a small work written by James March of Waterloo-road (*Blacker* is also first-rate), who when living was an excellent rod-maker; in proof of which we can now show one made by him, to our order, more than twenty years ago, and is yet, after killing trout and grayling in most of the rivers of the United Kingdom, unwarped and perfect. His little work, called *The Jolly Angler*, we recommend to the notice of all young fishers; and in proof of the concise yet instructive matter it contains, we select the directions on the making, tying, and dressing of artificial flies, partly drawn by him from Bowlker, and partly from his own resources. As initiatory lessons to the making of artificial flies, both the figures and descriptions are extremely valuable to the tyro in these manipulations; and it is for his benefit that we introduce them here.

3718. *To dress a palmer* after the method of March and Bowlker proceed as follows: — "Having ready a hook (No. 6.), your gut at hand, some red silk waxed with bees-wax, some strippings of black ostrich feather with a few fine red hackles (get all your feathers from cock birds, if possible, as they are stronger in their fibres, and brighter than those from the hen); then take the hook, by the bend, between the forefinger and thumb of your left hand, with the shank towards your right hand, the point and beard of the hook not under your fingers, but nearly parallel with the tops of them; afterwards take the silk (1, *fig.* 551.), hold it likewise about the middle of it with your hook, one part lying along the inside of it to your left hand, the other to the right; then take the part



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of the silk which lies towards your right hand, between the forefinger and thumb of that hand, and holding that part towards your left tight, along the surface of the hook, whip that to the right three or four times round the shank of the hook towards the right hand; after which take the gut, and lay the end along the inside of the shank of the hook till it reaches the bend, as at 2, *fig.* 551.; then hold the hook, silk, and gut, tight between the forefinger and thumb of your left hand, and afterwards give that part of the silk to your right hand three or four whips more over the hook and gut, till it comes nearly to the end of the shank; make a loop, and fasten it tight; then whip it neatly again over silk, gut, and hook, till it comes near the bend of it, after which make another loop and fasten it again, as at 3, *fig.* 551.; then if the gut reach farther than the bend cut it off, and your hook will be whipped on, and the parts of the silk will hang from the bend of it; then wax the longest end of the silk again, and take three or four strands of an ostrich feather, and holding them and the hook, as in the first position, the feathers to the left hand, and the roots of them in the bend of the hook, as is shown at 4, *fig.* 551, with the silk you waxed last, whip them three or four times round; make a loop and fasten them tight; then, turning the strands to the right hand, and twisting them and the silk together with the forefinger and thumb of the right hand, wind them round the shank of the hook till you come to the place where you first fastened; then make a loop and fasten them again. If the strands should not be long enough to wind as far as is necessary round the shank, when the silk gets bare you must twist more on it; after which take your scissors and cut the palmer's body to an oval form, taking care not to cut away too much of the dubbing. Both ends of the silk being separated, wax the one next the bend again; then take the hackle, hold the small end between the forefinger and thumb of your left hand, and stroke the fibres of it with your right, contrarywise to which they are formed, keep your hold as in the first position, and place the point of the hackle (5, *fig.* 551.), in its bend, with that side which grows nearest the cock upwards; then whip it tight to the hook. In fastening it, avoid tying in the fibres as much as possible; the hackle however being completely secured, take it by the large end, and keeping the side nearest the cock to the left hand, begin with your right hand to wind it up the shank upon the dubbing, stopping every second turn, and holding what you have wound tight with your left fingers, whilst, with a needle, you pick what fibres may have been taken in: proceed in this manner until you come to the place where you first fastened, and where an end of the silk is; then clip those fibres off the hackle which you hold between your forefinger and thumb close to the stem, and hold the stem close to the hook; afterwards take the silk in your right hand, and whip the stem quite fast to it; then make a loop, and fasten it tight; take a sharp knife, and if that part of the stem next the shank of the hook be as long as the part of the hook which is bare, pare it fine; wax your silk, and bind neatly over the bare part of the hook; then fasten the silk tight, and spread shoemaker's wax lightly on the last binding; then clip off the remaining silk at the shank and bend of the hook, and also any fibres that may stand amiss." This is Bowlker's description, with a slight alteration of March's own. Indeed he has, by his illustrative cuts applicable to each stage of the fly, greatly added to the printed directions. He continues, — "Of course you are aware that the quantity of ostrich feather, as well as the size of the hackle, must depend upon the size of the hook you dress; you should also tie it on so that the brightest side of the feather will be towards the head. If you want a ribbed body, tie your gold twist in with the ostrich fibre; wind the ostrich up the shank first, and then the gold twist after, making them both fast together. By following this description, you may make a great variety of palmers; and take my word for it, from the Land's End to John-o'-Groat's, there are few rivers where a palmer does not bear the palm. I keep them of all colours and sizes, and use them early and late, in preference to any other; the May-fly, in season, *not* always excepted. If ever the winged flies supersede the palmer, is is in clear water during the middle of the day. The white moth is a likely one towards dusk; but even here a large white rough palmer answers every purpose."

3719. *The making of a winged fly*, March gives *verbatim* from Bowlker thus: — "First hold your hook fast between the forefinger and thumb of your left hand, with the *back of the shank* upwards, and the point towards your right hand; then take a strong, small silk, of the colour most predominant in the fly you intend to make; wax it well with wax of the same colour, and draw it between your finger and thumb to the end of the shank; then whip it twice or thrice about the bare hook, which prevents its slipping, and the shank cutting the gut; which having done, take your gut, and draw it likewise between your finger and thumb, holding the hook so fast as only to suffer it to pass by, till the end of the gut is near the middle of the shank of the hook, on the inside of it; then whip the silk twice or thrice about gut and hook, as firm as the strength of the silk will permit; after that take the wings, which, before you began to make the fly, you had stripped off the stem, proportional for that purpose, and which lay with your other materials by you (as you always should before you begin), and place that side downwards, which grew uppermost before, upon the back of the hook, leaving so much only, to serve for the length of the wings, of the point of the plume, laying it, reversed, from the end of the shank upwards; then whip your silk twice or thrice about the end root of the feather, gut, and hook, which being done, clip off the root end of the feather close by the arming, and then whip the silk fast and firm about the hook and gut till you come to the bend of it; and then, if the gut goes beyond the bend of the hook, cut it off, and make all fast: take then the dubbing, which is to make the body of your fly, as much as you think will do, and, holding it lightly with your hook, between the finger and thumb of your left hand, take the silk with your right hand, and twisting it between the finger and thumb of that hand, the dubbing will spin itself about the silk, as seen at 6, *fig.* 551., which, when it has done, whip it about the armed hook till you come to the setting on of the wing; afterwards take the feather for the wings, divide it into two equal parts, and turn them back towards the bend of the hook, the one on the one side, and the other on the other side of the shank, holding them fast in that posture, between the forefinger and thumb of the left hand, which having done, warp them so down as to stand and slope towards the bend of the hook; and having warped up to the end of the shank, hold the fly fast between the finger and thumb of your left hand, and then take the silk between those of your right and where the warping ends, and pinch and nip it with your thumb-nail against your finger, and strip away the remainder of your dubbing from the silk, which wax again; and then, with the silk newly waxed and bare, whip it once or twice about, crossing backwards and forwards from one wing to the other, till you make the wings stand properly; then fasten and cut it off; after which, with a point of the needle, raise up the dubbing gently from the warp, twitch off the loose hairs, trim the wings both of one size (or your fly will not swim true), and the whole is completed."

3720. *The further progress of a body composed of harl*, we ourselves take the liberty to state, is, that after the head is formed, it should be wound round the shank closely and evenly, either in one or more strands, as the body is to be smaller or larger, until it arrives at the point from which the whipping commenced; here secure it by a half hitch, and then proceed to finish off, as we shall presently direct.

3721. *The ribbing or platting*, of whatever kind, varies these processes but little. It is at first laid in and secured, either with the harl or with the fur dubbing; and after the body is formed, is carried round it in open turns between the strands of the harl, provided that is used; and the twist having reached the finishing process, or end of the body, is to be secured with the rest by the general means of fastening, as follows: — When either the harl or the dubbing has been carried to the proposed length, make a half knot to keep the whole together, until the materials which formed the body be picked out and arranged in order; the hackle fibres should also be again examined, and any remaining confined ones set free. This being carefully done, fasten off by means of the hidden or invisible knot, which will secure the whole completely.

3722. *In the making of palmer-hackles*, which are supposed to be merely imitations of caterpillars, one general length of body is usually preserved; but when palmer-hackles are dressed to imitate living winged flies, it is evident that the body must be dressed to the length of the original.

3723. *This was our early and general method of tying or dressing the palmer*: we have since frequently varied it according to circumstances; and we have dressed our flies after the directions given by every writer of credit, from every one of whom something useful may be learned. The method of one is to be preferred in one part of the process, and that of a second in another particular. One is famous for a certain form of fly; a second dresses his palmers to admiration, but laughs at winged flies; while a third is a sloven in his finish, but most happy in his colours.

3724. *Captain Williamson's instructions for making a palmer-hackle* are simple, concise, and intelligible: — "First, whipping the hook on for a few laps, and lapping in the ends of a long fibre and of a hackle at the same place, then lapping down the whole length as far as the shank is straight; and in making the half hitches at bottom a small piece of platting is lapped in; this done, carry the fibre round the hook very close, adding a second or more fibres, if requisite, to complete down to the end of the whipping: when it is completed thereto, lap it under the platting, which is now to be carried round from the bottom to the top, leaving a very small interval between each round: when the platting is brought up completely, let the hackle be passed round progressively downwards, so as nearly to fill up the intervals left by the platting; fasten off at the bottom with two half hitches: if the hackle have very long stiff fibres, the palmers will resemble hairy caterpillars."

3725. *For making a palmer-hackle* excellent rules are concisely given in Bainbridge, accompanied with a plate well adapted to illustrate his directions. As this author's method, like our own, commences the hackle by winding from the shank, and carries it towards the bend (contrary to the practice more generally pursued), we shall omit the quotation of it as unnecessary. Ronalds prescribes the same method.

Subsect. 2. *The Hackle-fly.*

3726. *The simplicity of construction of this method of representing winged flies* will prevent any necessity for dwelling long on the subject. Two kinds are made. First, whip a gut length to a hook exactly in the manner already described for the palmer-hackle, whipping from below until within three or four turns of the butt; here fasten in a long fibred hackle of the desired colour, furnish the silk with a little dubbing, and working it to the top, the return will form a head. Having drawn the dubbing from the silk, make a half hitch for security, and taking hold of the hackle, carry it around the shank and fasten off by the silk; which done, again arm the silk with a proper coloured dubbing according to the size of the fly, or, if intended to represent a very minute body, let it be done by the silk alone; but whether it be dubbing or only silk, continue it down the length of the parent fly, either to the part opposed to the barb, when it is a short bodied one; or below the barb, for one with a long body; fasten off with the hidden tie.

3727. *The second method of making a hackle-fly* is somewhat more complex:—Arm a hook with its length of gut exactly as the former, but commence the whipping from the centre of the silk instead of the end; thus a loose portion will be left for a fastening off below, observing to inclose in the first turns the stem of a fine hackle, which then leave well fastened. Having carried the whipping upwards, lap in a long fibred stripping of feather, in preference to a plain hackle, which carry round the shank two or three turns, and then fasten off. Trim off the fibres to the requisite length and appearance, making them long or short, above or below, as occasion suits. Having so done, arm with dubbing the loose end of the silk left below, or proceed without it, according to the body to be represented; but this kind of fly usually requires a full body: carry this up to meet the wing feather, and fasten with a half hitch. Lastly, lap the hackle from below with rather wide turns at first, but thicker ones as it proceeds to meet the wing feather, where the silk divested of the dubbing will be ready to secure it. Various modifications are made in this kind of hackle-fly, but these are the principles on which all hackle-flies, properly so called, are formed; and the construction being considered aright, it will not be difficult to distinguish what winged insects they are most likely to represent. The first is not ill suited to be the mimic of the long thin dipterous or two-winged tribes of the *Tipulæ*, or crane-flies, as well as of the *Empidæ* (gnats) with some others that have single wings with long bodies and long legs. The second are formed to represent the coleopterous tribes, the humble-bee, and some of the more bulky flies.

Subsect. 3. *Making a winged Fly.*

3728. *The method of making a winged fly*, as given by Bowlker, has already appeared; and a very good one it is. Bainbridge's mode, however, differs somewhat, and we have often dressed our own winged flies after it. In the following directions it will be seen that we have endeavoured to combine the excellences of both the methods, although in some few respects we have taken the liberty of differing from each. The minutiæ of holding the hands, &c. &c. is so much a matter of fancy in the same operation even, that it must eventually be left to the choice of the learner himself, who will soon find out how he may best compass his ends. The preparatory operations are nearly the same as those already detailed. A feather for the wings, of the proper colour, size, and form, should be at hand; but it should by no means be at this time stripped of its fibres, as is usually directed to be done. That process is better reserved for the moment proper for placing it on the hook, for the artist will find that if he once lays the mass of fibres out of his hand, the chances are ten to one that they will disunite, and all his art will prove ineffectual in again replacing them as they were before. The hackle which is to represent the legs (and which should correspond in size and length with the legs of the fly, of which it is to be a type) may however be prepared by stripping its downy part, and tying its point with silk to assist in holding it, as seen, p. 1137. Have also the dubbing or body colours prepared, by mixing, if necessary, and by wetting to try the colours, as already directed, p. 1134. A proper coloured silk or silks must be likewise well coated with wax of the same hue, or rather of one a shade lighter, the wax itself becoming darker, from attaching dirt and other matters to it, than when it was first put on.

3729. *Begin by firmly whipping* the finest end of the gut (previously knotted by burning in the flame of a candle) to the inside of the hook from the commencement of the bend towards the shank. When this has been carried to within three or four turns of the end of the hook, attach the root end of the hackle by the next turns, not to the upper, but to the under part of the shank. Allow the hackle to hang loose, carrying no more turns around it at present, but continue wrapping the remaining silk as far as the end of the shank, three turns of which will form the head of the fly: should the original fly have a head of a colour different from its body, or should the fly be altogether a large one, then, instead of forming the head with the silk alone, spin around it a minute portion of dubbing of the true colour of the head of the real fly. This done, surround the root of the hackle with a second or third firm turn, and having secured the silk with a half hitch, again wax it, and lay the work down. As regards the hackle, we may remark, that in forming a small winged fly, our own custom was often, instead of using the whole even of a fine hackle, to strip off the fibres of one side of it. Sometimes if this stripping remained entire, or if the intended fly was to be very minute, we preferred this to the remaining portion with the stem, as being more pliant, lying more close, and being somewhat lighter. In other cases we used the remainder of the hackle.

3730. *The next process is to prepare the fibres of the feather* for the formation of the wings, which will require considerable attention and dexterity, as on them must depend much of the imitative perfection of the fly, and of success in its use. Having separated from one side of the feather the exact quantity of fibre necessary to form both wings, detach it from the quill by an even but somewhat sudden pull. Without losing the hold of this portion of feather, lay it on the back of the shank, the outer surface of the feather being applied to the hook, with the root ends pointing towards the bend. It is to be supposed that the practitioner's judgment will direct him to apportion these fibres to the just length of the intended wings; which done, whip the silk that had lately been half hitched two or three very firm turns about the root ends of the wing fibres, the projecting portions of which should be sloped neatly away, as soon as a half hitch has secured the silk. Now force the plume, which is to form the wings, back with the thumb, and retaining it in that position; if the wings are intended to stand apart, divide the fibres with the finger of the other hand into equal portions, passing the silk through the division forwards and backwards, alternating the crossings so as eventually to maintain each wing distinct from the other. If the wings are not to stand apart, as soon as the fibres are forced back, wrap them at once to the necessary inclination they are to have. The silk being again looped, or half hitched, take hold of the hackle, and pass it once round the hook before the wings; if they are to be divided, pass it through the division between them also, and then wind it two turns for a small fly, and three turns for a large one, close behind the wings, and then fasten the winding securely with the silk. Now examine whether all which has been hitherto done be complete and fast, pick out any confined feather portions, give the wings their final set, and trim off superfluous fibres, particularly upwards and towards the head. Again wax the silk, and spin around it the prepared dubbing, and whip it downwards according to the length of the body of the fly, as already directed; after which draw what dubbing remains from the silk, and fasten off securely with three turns of the invisible knot, which will finish the whole. We however have to remark on this mode of dressing a winged fly, that although it is less simple than some others, we have found it more efficient, having one great advantage, that of requiring but one fastening off. Where there are so many operations, it rarely happens that there are not two, or more frequently three, ends of silk, which are always objectionable from the increased liability to loosen, and the increased clumsiness likely to result.

3731. *The double winged fly.* The process of making those winged flies which have upper and under wings of different shades of colour, gives us an opportunity of doing justice to Taylor's explicit directions for fly-dressing generally, and the four winged fly particularly: — " Begin to whip the gut to the inside of the shank of the hook, but desist when you have gone about half a dozen rounds, and having a proper quantity of feather ready for both upper and under wings, put that for the under wings on the top of that intended for the upper wings, the points a little shorter than the other. This mass lay on the back of the shank, with the right side next the hook, and the butt end downwards, leaving the other end to be, when turned back again, full as long as the hook; then go on with your silk, and whip it round your feather, hook, and gut, six or eight times, or sufficient to make it fast, and with a pair of fine scissors cut away what remains of the butt end of the feather, taking care not to hurt the gut, which must be opened and twisted round the shank of the hook as you go on with the whipping, which is to be continued till it comes nearly opposite the point of the hook, but you must cut off the ends of the gut before they come quite so low down, if found to be too long: next put on your strips of feather for the forks or whisks at the tail, with the fine points downwards, leaving them both exactly the same length, about an inch and a half, and to stand open, and make two laps round with the silk; then take the hackle (which must be ready prepared by stripping off the downy part at top, and cutting the feather across on each side near to the stem, about two or three-tenths of an inch from the point, or by drawing the fibres back to prevent any of them from being bound down by the silk) and whip in the point of it two or three times round, leaving the largest end hanging downwards, and the right side uppermost, and make one lap round between it and the fork, and one below all round the bare hook tight and close to the fork, and cut off the superfluous ends of it if any remain in sight; then wax your silk afresh, and having your stuff for the body well mixed and ready, twist it gently round the silk, leaving it fine next the hook but gradually thickening upwards: make one lap below the fork, and one or two (as required) between that and the hackle, and work it gradually upwards till you come close up to the feather for the wings: if any of the fur remains on the silk, after you have thus formed the body, take it off, and wind your silk slightly a little upwards to be out of the way; then take the hackle by the end of the stem, and rib it neatly, lapping it thicker as you go on till you bring it up to the wings, and there bring it two or three times round as close as possible; and if any of the fibres remain, strip them off from the stem, and unwinding the silk to its proper place, make two or three laps to fasten the hackle, and cut away what remains of the stem; then take the feather for the wings, which has lain back all this time, and turn it downward towards the tail of the fly, and hold it down moderately tight with the rest between your finger and thumb, observing to have all the parts of the hackle out of the way. Whip it twice round the silk just over the feather moderately tight, keeping these turns fast with the hand, while by means of the needle the feathers which are to form the upper wings are slightly parted from the lower; this done, whip two more turns, like the former, very tight, and then two laps close above it; wax the silk again, and take a small bit of the stuff (the same as that used for the body), and twist it round the silk; whip this two or three times round up to the end of the shank (at which time, if there be horns, they may be added); afterwards bring the silk neatly back again, so as to fasten by noosing it about three times between the head and the wings; and here the operation finishes with completing the head of the fly, without so much as one fastening or tying throughout the whole, except at the last; but all is done by continually whipping and putting in your materials, as above directed, which renders the flies more neat and complete than they can be made by any other method."

3732. *Bainbridge's winged fly* is formed on a rather more simple construction, and may be followed by the beginner until he is *au fait* at the business; but we think he will find that the plan he recommends, though in other respects good, will not display the wings equally well. Mr. B. says, "The most simple mode of proceeding is to fix the wings on the shank of the hook lengthwise, with the narrowest ends nearest the bend, fastening them by three or four turns of the silk above or nearest the head of the hook, and then cutting the root ends close with a small pair of scissors, after which the silk must be brought below the wings, and the body twisted for a short distance, as in the hackle-fly."

3733. *Cotton's method of making a dub-fly,* as given in Walton, is considered by Sir John Hawkins as superior to any other; and many good dressers implicitly follow the directions as they stand. To the tyro they yield a valuable insight into the manipulations; we therefore quote the substance in the judicious form in which it appears in Salter's work:—"Hold the hook between the fore-finger and thumb of the left hand, with the back of the shank upwards and the point towards your fingers' ends; then take a strong silk of the colour of the fly you intend to make, wax it well with wax of the same colour (you should have wax of all colours with you), and draw it betwixt your finger and thumb to the head of the shank and whip it twice or thrice about the bare hook, which is done both to prevent slipping, and also to prevent the shank of the hook from cutting the fibres of your hair or gut, which sometimes it otherwise will do; then take your line and draw it betwixt your finger and thumb, holding the hook so as only to suffer it to pass by, until you have the knot of your hair or gut almost to the middle of the shank of the hook on the inside; then whip your silk twice or thrice about both hook and line as hard as the strength of the silk will permit, which being done, strip the feathers for the wings of a proportionable bigness for the size of the fly, placing that side downwards, which grew uppermost before, upon the back of the hook, leaving so much as only to serve for the length of the wings of the point of the plume, lying reversed from the end of the shank upwards; then whip your silk twice or thrice about the root end of the feather, hook, and hair or gut, which being done, clip off the root end of the feather close by the arming, and then whip the silk firmly round the hook and hair or gut, until you come to the bend of the hook, but no further; which being done, cut away the hair or gut, and fasten it, and take off the dubbing which is to make the body of your fly, as much as you think proper, and holding it lightly with the hook betwixt the finger and thumb of your left hand, take your silk with the right, and twisting it betwixt the finger and thumb of that hand, the dubbing will spin itself about the silk; when it has so done, whip it about the armed hook backward until you come to the setting on the wings; and then take the feather for the wings, and divide it equally in two parts and turn them back towards the bend, the one on the one side and the other on the other of the shank, holding them fast in that posture betwixt the fore-finger and thumb of your left hand; which done, wrap them down so as to stand slopingly towards the bend of the hook, and warp up to the ends of the shanks. Hold the fly fast between the finger and thumb of your right hand, and where the warping ends pinch or nip with the thumb-nail against your finger, and strip away the remainder of the dubbing from the silk, and then with the bare silk whip it once or twice about, to make the wings stand in due order; then fasten and cut it off, after which, with the point of a needle, raise up the dubbing gently from the warp, twitch off the superfluous hairs of your dubbing, leave the wings of an equal length, or else your fly will never swim true."

3734. *Captain Williamson* "on the artificial fly," divides the practice into four classes:—1st, The large fly with wings, either expanded or closed, so as to stand over the back. 2d, The double winged fly expanded. 3d, The single winged hackle, expanded either with or without a body. 4th, The palmer-hackle, which has no wings, but should resemble the hairy caterpillar already noticed (p. 1139.).

3735. "*The large fly with wings* is made by first lapping a few turns on the butt of your hook with well waxed silk, which should correspond in colour with the body of the fly; then taking a bunch of such feathers as you mean for the wings (cut from the stem or centre rib of the feather), lay them pointing forwards and very even at their butts, and fix them with two or three turns of your silk; now take some mohair, or if that be not attainable, some very fine lamb's wool, or rabbit fleece, or any soft substance of the colour you wish the body to be, and laying it very thinly all around your silk, twist them a little together, so that they may lie tolerably smooth. Now proceed to lap the silk so prepared round your hook very light and close, making it thicker or thinner in various parts, according to the shape of the fly you imitate. When you have made it of a due length down the shank of the hook, make two half hitches (or half knots as some call them); then having stripped off one side of the plumage from such a feather as will answer for legs, and leaving a little on both sides at the point to be tied in, wet such tip that it may be compact, and with your silk, now stripped of mohair, &c. beyond what is already done, tie the end of the hackle down close behind where it is feathered on both sides; now making a half hitch, carry the silk close under the butts of the wings with one or two turns round the body, and let it lie out of your way. Next take the hackle and carry it round the body of the fly, at first at some distance, but closer as you approach the wings where the hackle should be thickly set on; tie down the butt of the hackle, cutting away all superfluities with a pair of very sharp fine pointed scissors; then turning back the wing feathers, which should reach the whole length of the shank when thus inverted, whip them down well, either all together, if you intend to have a standing closed wing, or equally divided and spread, so as to form two separate parcels, if you mean to spread wings. Having secured the wings, carry your silk forward, well waxed, and again covered with the mohair; take two or three turns round the butt of the hook as tight as you can draw the silk with safety, and finish the bend by two half hitches well drawn, and close above the wings. In making the fly, you should observe to take as few laps of your silk as may appear indispensably requisite, for you cannot make a fly too light: you will also have occasion to make more half hitches than I have described above, which your own judgment will guide you in. When you have, at any time, put down a feather, &c. always cut away the superfluous ends before you begin to lap or tie any thing over, because you will else have a heavy, awkward, ill finished fly."

3736. "*As soon as you have completed the form of your fly*, it will be necessary to draw many of the fibres of feathers into their proper directions; thus the legs must be formed by pulling down such fibres as stand on the back of the fly, either out altogether or into places below; their length must also be regulated as well as their quantity, taking care to have more legs under the breast than under the body, the latter should be picked with a needle, &c. so as to make the mohair appear a little between the foldings of the hackle. The wings should be carefully equalised, both in length and thickness, and in direction from the body. Do not be afraid of making your wings stand rather wide; for when you draw the fly through the water they will collapse considerably, especially after being a little time in use. When you have occasion to use the hackles of common poultry, ever select such as grow on the necks (near the heads), and on the rump of game-cocks: those from barn-door fowls, especially hens' feathers, though seemingly good, do not answer; they are too pliant, and neither show nor swim well. Always get the feathers you want, such as woodcocks' partridges', starlings', &c. from the cock birds, for the above reason. In putting on hackles, &c. be careful to keep the glossy or outer side of the feather in such position, that when the fly is made it will be exteriorly brilliant; for this reason, when you whip on a hackle, advert to which side of the plumage was stripped off, and carry it round, either with or against the sun accordingly, so that the upper side of the feather, which is always the highest coloured, may be next to the head. When you have occasion to use a very large hackle, you will find it best not to take that part which remains on the stem, but that which is stripped off, as it will be more pliant and less bulky. Sometimes two hackles will be required to furnish one fly. If you think it proper to add feelers, which project from the heads of many flies, or to have single or double forked tails, they are easily added by whipping in dogs' bristles, or those from over the eyes or under the chins of horses; or, which is in general more appropriate, you can use single fibres from that feather of which the wings of your fly are made."

3737. "*The double winged fly* is generally made with either a very slender or a very full body, the former resembling that of a gnat, the latter that of a moth. It is also made on hooks of every size, from No. 4. to No. 10. both inclusive. I shall enumerate the varieties, with the most appropriate hooks, first describing the formation of the fly. Set on your gut in the manner before described, with the best silk well waxed; then take a feather properly stripped and wetted, as explained regarding the hackle for the fly No. 1., and placing it on its back, that is, the bright side next the hook, and the stem pointing forward along your gut line, whip it down firmly, and make a half hitch; then wind your feathers round the hook for about four times, keeping them as close as possible to each other, and fastening down with a half hitch, cut off the surplus stem. Now take another feather trimmed in the same way, and put it on in the very same manner, as close as possible to the first feather; cut off the superfluities as before, and make fast with a half hitch or two: if you mean to have a body of any substance, wax your silk again, and put on some of the proper coloured mohair; take a few turns down the shank, or, if the body is to be thick, as in a moth, you may lap back again, so as to double the thickness; in some the bodies are rather thicker towards the tails, in others towards the head; to this you will pay due attention; fasten off after you have doubled the body as far back as the last feather will allow."

3738. *It will be seen Captain Williamson's plan of dressing winged flies* differs considerably from all those which have already appeared; it has great simplicity to recommend it, and is not very different in construction from that of a palmer. An artificial fly so dressed, on its first appearance, bears but little resemblance to the living flies which have double wings, and still less to the *Coleoptera*, or beetle tribe; but when the water has given the wing fibres expansion the resemblance is much greater, and we have seen flies so made kill well. But on the whole we prefer the method of winging the fly with a bunch of fibres, to that of encircling the whole body with the wing feather. Many flies have diaphanous wings; none have transparent legs: most of the legs resemble the body in colour; consequently it is seldom that the same feather is proper for both legs and wings. The under wings may vary in colour from the upper, and if their colour be the same with the legs, then both the wings and legs may be equally represented by the second feather; but if this be not done, how can the fly be dressed true after this manner? If this method be persisted in (as we constantly maintain colour to be a most important consideration in fly-dressing), in such case, when the wings are similar, or when one set or both differ from the legs, let there be a small hackle added to the fly to remedy the discrepancy, and to restore the true shade of that part, which as it is the first that presents itself to the fish, so it is the more necessary to be of the true shade. This mode of dressing we think, with some modifications, may be advantageously used for the hackle, and other flies of the beetle tribe, provided the upper or the case wings are stubbed, and are very decided in their colour, and that the lower be of a thin and more transparent kind: the whole must however be dressed full and dubbed. In this way Captain Williamson dresses his moths, and as they are occasionally made to resemble palmers, and succeed, they will surely do so even better by this method. On a consideration however of all the circumstances, we are decidedly of opinion that the other mode is to be preferred.

3739. *The single winged hackle of Captain Williamson* "is dressed by lapping one feather as before described, then whipping on with or without mohair, or other body, till you come opposite to the point of the hook, or to the barb for some long bodied flies, then lapping in a hackle from the bottom of your body, and bringing it up to where the feather was ended, taking care to make the turns of the hackle sit closer as you approach the wing feather, at which you finish, and fasten off with two half hitches." We are more favourable to this mode of dressing the single winged fly (most erroneously in our opinion called a single winged hackle) than to the former. We have dressed many flies in this manner with great advantage, where the body, wings, and legs, either exhibit very striking differences of colour, or were altogether the same. It will perhaps be considered that we are now "spinning too fine," but we apprehend not, and experience has borne us out in this opinion. We conceive that when the distinction of colour between the several parts is very considerable, it will shine through the occasional openings of the wet draggling feather; but when the differences are not great, they will not become apparent, and the fish beholding no likeness will refuse it. When he is looking for a fly whose colours, like the cow-dung-fly, are all of one hue, a fly so dressed answers well, and it is in this way we account for what we have observed to occur.

SUBSECT. 4. *General Remarks connected with the Dressing of Flies.*

3740. *On the dressing of artificial flies*, a few additional remarks relative to the necessary variations in the form, and some cautions concerning the processes in the manufacture, may not be altogether irrelevant. First, with regard to the wings, concerning which it is too common to be indifferent. The placing of them has arisen from considering most flies as blown on the water, and struggling down its stream incapable of any resistance. This is the case with some, but most of the aquatic flies alight on the water, swim with unruffled wings tranquilly down it, or drop on it, and rise again in graceful motion to deposit their eggs. Is it not necessary at least that such flies should be faithfully represented? In the directions for the dressing of flies, too little stress is apt to be laid on the necessity of accuracy in the form, size, and position of the wings; thus the term of winged fly alike applied to the wide expanse of wing of the libellula or dragon-fly, the close folded wings of the phryganea or stone-fly, the semi-globular form of the coccinella or lady-cow, and the vertical sails of the ephemera or duns, is most certainly not precise. Whoever wishes to become an adept in fly-dressing ought to be aware that it is most necessary that he should attend to the colour, length, and direction, of the wings of the flies he makes. It is for this reason that we cannot prefer the palmer-hackle as a general representative of all flies as some dress them. A fancy of this kind may be entertained, and fish may be caught, because trout are fond of caterpillars of all sorts; but drop a palmer, however well dressed, to represent a dun in colour, when the duns are sailing down, and the palmer will be refused. In the same cases, a winged dun well dressed will often kill in the midst of the natural flies on the water. The effect which the water has on the direction of the wings, should be considered in their formation: thus, where they are intended to spread and stand wide, it is prudent that in the imitation they should stand rather wider than in the natural fly, as the drawing it through the water (for throw as light as you will, the fly will drag in part of its progress) will force the wings together. But at the same time that this is considered, we must carefully avoid making these wide spreading wings of too stiff a fibre, otherwise the water will be ruffled by their action. Fibres firm at their butt, but extremely thin at their points, are best for this purpose.

3741. *In every case buoyancy is an essential requisite in fly-dressing.* Even the flies which are blown on the water seldom sink; those whose habits carry them there float in security on the surface, by an admirable provision of air bubbles to their feet. A fly under the water is therefore an unnatural occurrence, and accidental only; whereas ten thousand pass down the surface of the stream in a summer's day. It is therefore of consequence that the dressed fly be specifically light, and also that the materials of which it is made do not imbibe water to add to its weight. The shape and size of the body are likewise of much importance. Were the wide spreading wing of the small but long bodied libellula dressed with the short thick body of the moth, how long might it be offered to the wary trout without effect. When the small bodied dun is on the the water, we have in vain tried every other variety of body without success. Correctness of wing here has not helped us; it must be the minute body alone that will avail. This is exemplified in the *Tipulæ* or spider-flies, which must be dressed long and thin in the body, with a few long fibres for their long legs; the wings also are long and stand wide apart, and therefore the upper staring mass of fibres of the same hackle might, by good management, be directed so as to represent them likewise with sufficient effect. Here therefore is a case where the hackle-fly, as before observed, may with great propriety be used to imitate a particular fly to advantage; but it is evident that this must be the work of an adept.

3742. *We have seen the ant-flies dressed without protuberant bodies*, but the practice is not to be recommended, as this enlargement is ovarial, and fish of every kind seek it with extraordinary avidity: it is therefore evident that the representation of it must be effective.

3743. *On the colour of flies we must again repeat*, that too much attention cannot be paid to it, particularly in the dressing of the body, because, as aquatic flies rest on the water, or hover over it, the body comes immediately into full view, and commands the first attention; after it the legs are most noticed. Many we are aware argue, that these minutiæ are unnecessary, and that a fly is fish bait, and fish will take it. Otherwise, they ask, why are they taken at all with such representations as are complained of, or with fancy dressings which represent no flies whatever. We admit all this in its full force, but we also humbly certify our conviction, that it bears nothing whatever on our argument, because we consider fly-fishing as divested of all its art and science, unless it be capable of tempting trout and grayling under almost every circumstance, perhaps under all except when they are choked with foul water, or sickened by electric clouds. It must be remembered that trout, grayling, and other fly-taking fish, look directly upward, and have to direct their vision through a medium often ruffled by breezes, or disturbed by eddies. At such times the sight may be somewhat indistinct, and the direction of the wing, the size of the body, and the exact shade of colour may not be correct; but this is not always the case: it is often necessary to fish in streams undisturbed by wind or eddies, and what then becomes of the ill-shaped type? That fish have exquisite distinctness of vision is evident from their entire refusal to rise even at any other fly (although at some times a favourite) when a still greater favourite is on the water. We have frequently changed and re-changed our flies without taking a fish when they have been fully on the feed and rising all around us, and at last have only succeeded by sitting down and making an exact imitation of the fly on the water, with the smallest increase of colour in the type. The same must have happened to hundreds of experienced fly-fishers. When trout have been long prevented from feeding, they become ravenous; and it often happens that previous to indifferent weather also, they appear to have an increase of appetite, and will take almost any imitation that is offered; but this exercise of caprice, or of a peculiar call for food, forms no argument in favour of a want of nicety in the construction of our flies. These are accidental circumstances in the habits of fish, and a pannier taken at such times is only a proof of the folly of the prey, reflecting little credit on the captor. But when food is plentiful, but little wind stirring, and the water clear and low, then the well selected and accurately coloured fly shines conspicuous, and its maker stands proud amongst his fellows. If the angling travel be extended to the northern districts, where the waters are wide and often shallow, and in fine weather as clear as crystal, it will be found that it is more necessary to be particular as to the true colour of the fly than either to its figure or neatness.

3744. *Strength in the workmanship* is a most important consideration; for a fly to be at once light, neat, and yet firmly made, is the *acme* of dressing. Much must depend on the silk, which ought to be very fine and yet sufficiently strong to bear being drawn very tight. Well waxing the silk is of great consequence to the strength of the work, but both these will avail little if the utmost care be not taken in the ties or fastenings off, and the young angler should practise the hidden or invisible knot until he be quite perfect at it. It is in this particular that the London dressed flies have too often been complained of. If they were always as strong as they are neat, it would be better for the anglers who use them, and there would be still less occasion for the domestic manufacture of them than there is at present. Every knot should be varnished.

Sect. IV. *General introductory Remarks on the Number and Arrangement of Artificial Flies, and on the Seasons of the Appearance of the Natural Flies, which they are intended to represent.*

3745. *The number of artificial flies* required for the practice of fly-fishing is very differently estimated by different writers. The angling patriarch, Walton, gives a list of *twelve* "reasonable flies," which his friend Cotton judiciously doubled. The experience of a century and a half has since greatly increased the list, as more extended observation proved the universality of appetite in fish for the insect race. It appears therefore strangely retrograding to find a writer of such credit as Salter contracting the required numbers into the confined limits of "red and black palmers, red and black hackles, ant-flies, the May-fly, stone-fly, gnats, a red spinner, and a moth." A fly-book so furnished might secure a medley of roach, dace, chub, and perchance a few unhappy trout, which had strayed out of bounds; but the exhibition of both baits and fish would not be very creditable to the professed fly-fisher. We have no doubt that many of the flies which the books of some excellent anglers contain, are seldom called into action; but as they are, when collected, not very cumbrous in carriage, eat and drink nothing, and may now and then suit the "lucky occasion," we see no disadvantage, but applaud the judgment of those anglers in being furnished with them. In our own fishing practice we have met with numerous gratifying proofs of the benefit of an ample store; but infinitely more have we felt the benefit arising from an ability to increase our stock from our own resources whenever we found occasion so to do. It is utterly impossible to pursue fly-fishing with zeal, and such success and credit as to mark the proficient, without either having the skill to dress flies, or possessing a well arranged full collection, and the skill will be more particularly necessary in angling travel, where even the greatest variety will hardly be adequate to occasions which may occur. It is not however quite the same with the angler who confines his fishings to an immediate neighbourhood. Here, a moderate share of observation made during one or two seasons, will inform him what flies are common to the waters in their different seasons, either as indigenous from aquatics, or as accidentally blown from the land.

3746. *It is said that more than a hundred artificial flies stand on our books.* We have ourselves, we believe, dressed nearly that number of varieties; but we by no means recommend so many for general use, although perhaps not one of such a list but might be usefully employed on particular occasions.

3747. *We have divided the artificial flies known among anglers*, and noticed by writers, into three lists:—*The first* is composed of such flies as are of acknowledged general use, on most of the British waters. These, as being well known to ourselves, we hope to render familiar to the angler by illustration of the figure, and by a sketch of the individual history of the originals, and the angling uses of their artificial representatives. To these are also appended a few which, although they may not have escaped being employed by anglers, yet, as far as we know, have not been noticed by any other writer, and yet from their general utility are well worthy of introduction into our books. *The second list* presents the artificial flies recommended by other writers, some of which are of arbitrary adoption; many are well known, but it is by other names; a few of them are local; and some are so obscure in name, description, and directions for making, as to leave us room only for conjecture. *The third list* is composed of such as are found useful in fishing for salmon, sea trout, and the other large varieties of this favourite of the British rivers. As the flies which compose this list are many of them the creatures of fancy, or if representatives are arbitrarily dressed, without reference to critical exactitude, we have chosen a separate niche for them. We are not so bigoted to numbers as not to consider the flies of the first list sufficient to find employ for most anglers; and we think that, with occasional modifications in the dressing of them, the variety will suit most seasons, most waters, and most of the fish which rise for flies in the British waters. As an addition to the size and colour of the insect representatives beyond what this list specifies is found to be necessary in the taking of salmon and sea trout, they are provided for distinctly.

3748. *To arrange the angler's list of artificial flies* in such a manner as would at once clear it from the confusion that now envelopes it, has long been our anxious wish. Angling, but particularly fly-angling, has been our favourite recreation; and when we engaged to write upon it, we hoped that our own notes, and the descriptions of other piscatory writers, would have made a systematic arrangement of the living objects connected with it a less difficult task than we have found it to be. The objects of capture, the fishes themselves, had most of them been well described by naturalists; the practice of angling as an art has been brought to considerable perfection; but the knowledge of the natural history of the insect baits, particularly of those connected with fly-angling, is but little more advanced than it was two hundred years ago. It is a natural inquiry, if angling be, as its advocates boast, a recreative amusement peculiarly sought for and encouraged by characters eminent for science and intellect, how is it that the living objects of it have not engaged more scientific attention? We can only suppose that this neglect has happened with them as with ourselves; and that, however each passing opportunity has been seized for observation of the works of Nature on most other occasions, such are the fascinations of the pursuit of fly-fishing, that its practice absorbs all the energies during its continuance; and that the living objects, at other times individually interesting, are now considered only as they are found conducive to the sport. Our own notes of many years present ample details of days, months, and seasons of fishings, and are most accurate on the weight, number, and variety of our captures; the baits used are also stated with precision, as hints for our future guidance. Occasional inquiries and observations are interspersed on the natural history, habits, and manners of the fishes captured, and of the worms, flies, &c. by which they were enticed; but we regret that these latter are vastly inferior in number to the others, not because the subjects did not then interest us, but because we were, as soon as we reached the water, too much absorbed to pursue any inquiry not directly connected with the sport. What we did however we hope will somewhat aid the cause, and the importance of the subject to the character and the practice of the art is now so impressed on our minds, that we venture to promise to neglect no future opportunities which may present themselves. What we have stated, however, in the way of excuse is less for ourselves than for others.

3749. *To the fascinations of the mechanical part of the pursuit* it is owing that the scientific consideration has been so much lost sight of by persons from whom so much more might have been expected. The author of *Salmonia*, who must be acknowledged as one of the greatest philosophers this country ever boasted, had been an ardent fly-fisher many years. We have seen him on the waters between Watford and St. Alban's, to which he alludes in his work, and have heard of his warm attachment to the sport from the gentleman at whose mansion he visited, and in whose waters it was that he so often fished; yet even his inquiring mind appears to have led him little farther on this subject than to convince himself that the principal flies he used were drawn from the genera *Phryganea* and *Ephemera;* and he even contents himself with a few general hints relative to the habits and metamorphoses of these alone, which apparently form the sum of his researches into the physical history of the living fly-baits, a branch of knowledge which however we make no doubt he would be the first to admit as most essential to the perfect attainment of the art, and most creditable to its possessor. In the application of our observations to dispel some of the obscurity which has so long hung around the fly-angler's vocabulary, we may assert that, with the honourable exception just alluded to, we have in vain looked to reap any material benefit from our predecessors in this pursuit. The errors of the earlier writers have been faithfully copied by those who followed; and where a gleam of originality was attempted, it seldom did more than raise our hopes, and increase the sense of our wants. Be it again remembered, that we now speak only of the natural history as connected with our art. On the practice of angling, we have works which do infinite credit to their authors, and have tended to bring the art to its present state of perfection. But that the natural history of the objects connected with angling is in a state little creditable to its professors, must be evident to those who have compared the various written accounts of the animals included in that description. Had we originally given the list of flies used by ourselves, named and arranged according to their several places in the Linnæan catalogue, with as much of their natural history as we had traced, we should have saved ourselves many weeks, nay, we may truly say, some months of labour and research; the result of which inquiry has led us to the conclusion, that for the present we must leave it, if not wholly, at least in a great measure, uncleared from its obscurity, errors, and contradictions. If it were consistent with the nature of our plan to consider our writings as wholly original, we should have also attempted a nomenclature altogether new for the living baits of the angler, at once expressive of their natural character, uses, and natural classification. But as an encyclopædian writer, it best becomes us to follow the lead of others, assisting the general cause by little more than by our incidental remarks. But that we do not without reason complain of the discordances in the accounts of the angling flies as they appear in the writings of our best authorities, or of the want of even common acquaintance with their natural history, let the following exemplifications testify: —

First with regard to the dun fly. Mr. Daniel, from whom, by the manner of getting up his work, as well as from his known attachment to rural sports, much was expected beyond mere compilation, and from whose scholastic habits we might at least have expected the detection of gross errors, is found to describe the blue dun fly as produced from a caddis, although it had long been known that all the duns belong to the *Ephemera* or day-flies, whose origin, although aquatic, is not from a cad-case. From a want of examination little creditable to such a work, and depending on sources of information grossly erroneous, he is also led to state that the cricket, or water creeper, as it is called by anglers, "cannot be the same with the stone bait, or in fact with any cased worm" (fly larva). If there wanted any proof of the necessity of our giving to the natural history connected with our art the benefit of observation and inquiry, so glaring an error as this would furnish it. Were more proofs wanting, we might cite the *North Country Angler's Own Book*, who informs us that the larvæ of the dragon-fly are leeches, and that the whirling dun springs from a cod-bait or caddis-fly, while at the same time he dresses it aright as an ephemera or spring-fly. This is so glaring, that we might have supposed it a verbal error only, had he not been so particular in describing the circumstances connected with its history. Bainbridge gives figures of what he calls gnats, which have four wings; whereas it is notorious that the *Culex* or gnat, as a dipterous insect, has two only. Even Salter, in his introductory plate to fly-fishing, presents a palmer with wings, and an ant-fly with tags to its tail. Bowlker calls the May-fly (*Ephemera vulgata*) a libellula or dragon-fly; and Taylor says the spider-fly has no wings at all.

3750. *Of the utter discordance* in the names and descriptions given by different writers to the various angling flies, many glaring instances occur. In Bainbridge the great red spinner is made a case-winged fly, and confounded with the fern-fly of others. In *Salmonia*, and in *Bowlker* also, it is justly described as a summer dun (*Ephemera*). Bowlker says that the wings of the cowdung-fly stand upright; it is one of our most common flies, and its wings lie remarkably flat on its back. Salter describes the coch-a-bonddu as the same with the early red or four-winged fly; nor are the diversities of the characteristics of this Cambrian favourite, coch-a-bonddu, confined to these discrepancies. By one author it is identified with the Marlow-buzz, by another with the fern-fly, and by a third with the Welshman's button. This name, Marlow-buzz, is also another of the stumbling-blocks to anglers, signifying with some a beetle, and with others a soft winged fly. The fern-fly of Bowlker, a small summer beetle, is with Bainbridge a fly with soft wings. The willow-fly of Sir Humphry Davy (a phryganea) is a caddis-fly with flat wings; in Bainbridge it is a yellow dun, and one of the *Ephemera* with elevated wings, the immediate precursor of the May-fly. Again, according to Bowlker, the willow-fly does not appear until September. Taylor confounds the stone-fly in its pupa state with the spider-fly (*Tipula*) and thus commits two errors at the same time, saying first that it creeps out of the sand, as authors describe the spider-flies to do, and next that it has no wings, as is the case with the pupa of the stone-fly. Of the multitudinous names by which different authors describe the same fly, many instances will appear in the numerical list which we are about to offer.

3751. *The difficulty of characterising the winged insects* used as baits by the descriptions given by authors on angling must therefore be apparent. We hope, however, that hereafter those which are in very general use, and of regular and almost universal occurrence, will be placed in their proper situations as entomological members. We cannot answer for the critical accuracy of all those we have ventured to class; but we are open to correction, and invite it. Much time will probably elapse before even the whole of the angling aquatic flies are reduced into systematic order. As to others which are occasionally taken by fish, they embrace almost the whole insecta. If a practical angler were to be accompanied through a season by a naturalist so devoted to the study of entomology as not to be diverted from research by the fascinations of the sport, much might be done; but from the angler himself, the work is likely to be effected only by slow degrees. A mite, however, from each would make a mountain in the end, as a penny contribution will raise a colossal statue to a public benefactor.

3752. *On the merits of individual flies*, as stated by writers, the young angler is to bear in mind that prejudice may occasionally appear; but it has oftener happened that locality has influenced the terms in which either the favourable or unfavourable character has been represented. The *North Country Angler*, when he first used the naked stone-fly or water cricket, was led to think he had discovered not only an inestimable *bait*, but almost an *undescribed* species. In the midland counties it is not very highly prized, and around London it is held very cheap. As a nondescript, it could only have been so to anglers of very limited observation, and of less reading; for we find it accurately described both by Walton and Cotton, and it was known long before their time. Particular flies are more common in some districts than in others; and where they are so, the representative may be expected to prove more killing, so it becomes extolled without limitation. The angler of another district finds it almost useless, because the fly itself is unknown to the fish there. Fond as the trout are of the May-fly, it is probable that he who tries the Wandle with his well trimmed drake will not raise a fish, for on this river the May-fly does not appear.

3753. *The decrease of aquatic flies* must have been observed by every angler of any standing, drainage and cultivation having proved unfavourable to their production. This is doubly to be lamented by him, for it is not enough that trout and grayling are not one-fourth as numerous as they were, except in strictly preserved waters, but even the means of taking such as do remain are lessened also. "It appears to me," says the author of *Salmonia*, "that since I have been a fisherman, which is now the best part of half a century, I have observed in some rivers where I have been accustomed to fish habitually, a diminution of the quantity of fly. There were always some seasons in which the temperature was favourable to a quantity of fly; for instance, fine warm days in spring for the grannam or brown fly, and like days in May and June for the alder-fly, May-fly, and stone-fly: but I should say that within these last twenty years I have observed a general diminution of the spring and autumnal flies, except in those rivers which are fed from sources that run from chalk, and which are almost perennial, such as the Wandle and the Hampshire and Buckinghamshire rivers: in these streams the temperature is more uniform, and the quantity of water does not vary much. I attribute the change of the quantity of flies in the rivers to the cultivation of the country. Most of the bogs or marshes, which fed many considerable streams, are drained; and the consequence is, that they are more likely to be affected by severe droughts and great floods — the first killing, and the second washing away the larvæ and aurelias. May-flies, thirty years ago, were abundant in the upper part of the Teme river in Herefordshire, where it receives the Clun: they are now rare and seldom seen. It may be observed, that most of the rivers of that part of England, as well as of the West, with the exception of those which rise in the still uncultivated parts of Dartmoor and Exmoor, become after heavy rain rapid and unfordable torrents, while in dry summers they are little more than scanty rills. Exmoor and Dartmoor, almost the only great remains of those moist, spongy, or peaty soils, which once covered the greatest part of the high lands of England, are becoming cultivated, and their sources will gradually gain the same character as those of our midland and highly improved counties."

CHAP. XI.

LISTS OF ARTIFICIAL FLIES.

3754. *The time of the year for fly-fishing*, like the number and variety of the flies to be used, is not limited to any fixed period. Salmon, trout, grayling, and all those fish which take winged insects, may be occasionally caught even in the winter months by them; but these are accidental circumstances. In January even, gnats (*Culices*) and some other minute flies (*Tipulæ* and *Muscæ*) are seen playing over the water in bright open weather. The observant angler must have remarked that the winged insects of the winter months are minute, and usually very dark in colour. The author of *Salmonia* attributes this to a preservative intention of Nature, and supposes that they escape the influence of frost by the effects of light on their black bodies. In their hovering over the surface of the water, which being liquid is above the freezing point, they must also be secured from destructive cold. The minute flies hinted at, if the angler be disposed to throw his line at this inauspicious time, may be traced in the practical directions for dressing *duns* for early spring.

3755. *In February* the same flies continue to appear, and the meagre list is now somewhat augmented if the weather is very open, and gives promise of an early spring. The dark fly, a phryganea of the next month, and one or two varieties of dark olive *Neuroptera*, are now seen on the water for two or three hours in the middle of the day. The *cowdung*, (*stercoraria*) is also sometimes seen towards the last week. All these will be found among the flies of March; but such is the state of the trout at this early season, that they yield little pleasure in the taking, and seldom rise at the fly.

3756. *March* is generally considered as the commencement of the fly-fishing season for salmon, trout, and grayling; but unless the spring be very forward, little sport may be expected until towards the middle of the month, and not even then in most waters. But generally speaking, from the middle of March until August, salmon and trout may be fished for with the fly with every prospect of success. As regards grayling, although they begin to rise at the same time with the trout, their best season does not commence until late in the summer. In the hot months fly-fishing is principally confined to the mornings and evenings, except on cloudy and windy days, when it may be practised throughout. In September and October, the chance of sport with salmon and trout lessen every succeeding day, but with grayling it rather increases until November.

3757. *The difficulty of presenting* a satisfactory catalogue of flies dressed to ensnare fish is very great, as will be apparent when we consider that of these there are upwards of a hundred which enter the list of various writers of different localities; and as the fly of one author bears a different name, according to the locality he lives in, from that of most other authors, so it is most likely that neither the names nor the descriptions agree, and thus endless error is propagated. Although we have in the list we offer endeavoured by adding to each fly the different names it is known by, yet we are by no means assured that we also have not unintentionally increased the mystification. It has been our wish and our endeavour to present a tolerably clear *exposé* of the most popular flies in use among anglers throughout the United Kingdom, with the various names under which each passes in different places. We have also figured the *dressed* representatives of the most popular and important flies which should garnish the angler's fly-book when he goes abroad on his sporting travels, be it in England, Ireland, Scotland, or Wales; all of which are such as we feel assured, as well from our own experience as from the accounts of others, are calculated to take every variety of *fly-taking* fish, from the noble salmon to the humble and diminutive bleak.

Sect. I. *Monthly List of Artificial Flies.*

3758. *This list* embraces all the flies of acknowledged general use in the waters of England, Ireland, Scotland, and Wales, which can be characterised with precision. We have to observe on it that the times of the appearance of the natural flies, as stated by us, are not always in agreement with the authorities whose method of dressing or whose remarks we may quote; but they are given as the results of our own observation principally, for we find the accounts of writers to be so much at variance with each other, that we are convinced they have been given, not as the effect of a general accumulation of facts, but as the result of observation in one or two instances, influenced as these are likely to have been by accidental agencies. The temperature of the atmosphere, the winds, the moisture, or the dryness of the air, will hasten or retard the appearance of winged insects, which consequently must be very variable; and those causes are likely to operate differently in different districts. We have drawn our conclusions on the contrary from notes made during a series of years, which have enabled us to form a moderately correct average of the time of the *coming* of each fly *on the water*, allowing for contingencies of season, which often makes not less than a fortnight's difference in their evolution; and as we have not been confined to locality but have extended our fishings widely, so our statements may be supposed to be tolerably correct. We have likewise to a certain degree endeavoured to place these insect baits in the order of their succession in our tables.

3759. *To each month we have appended a summary table*, by turning to which the angler may at once see what flies are proper for the different times of day, the various alternations in weather, and for the altered states of the water.

SUBSECT. 1. *Artificial Flies for March.*

No. 1. Black gnat.
2. Early small black fly.
3. Alder, or red fly.
4. Cowdung-fly.
5. Dark dun.
6. March brown.
No. 7. Blue dun.
8. Early dark bodied willow-fly.
9. Black palmer-hackle.
10. Brown palmer-hackle.
No. 11. Red palmer-hackle.
12. Golden palmer-hackle.
13. Peacock palmer-hackle.
14. Golden peacock palmer-hackle.

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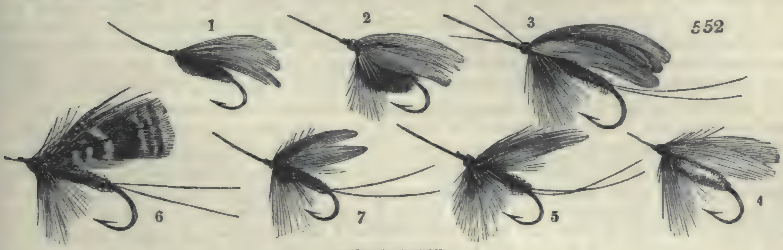


FLIES FOR MARCH.

No. 1. *Black Gnat* (*Empidæ*).

Wings. — Light part of the wing feather of any darkish dun coloured bird, those of the starling or hen blackbird being as good as any. To lie flat.

Body. — Dressed minute, rather short, with a small black ostrich harl, or in lieu of it black mohair. Hook, No. 9 or 10.

3760. *The black gnat*, dressed as above, is one of the earliest flies, but is so minute that it can scarcely be imitated of too small a size, or dubbed too thin and fine. As it will hardly admit of any thing being added for legs, we have sometimes found it convenient to dress it as a simple hackle-fly with a dark grizzle feather. The reason for this instruction is, that a reference to the natural history of this fly in our entomological detail will show, that its legs are barred with white, which the grizzled hackle will represent well. We have used it both as a winged fly and as a hackle with success in February from eleven to two o'clock, and in March from ten to four. In the summer months it will also kill when the water is fine and low. In gloomy weather it may be used the whole day through, but in bright days in the morning and evening only. After a shower it sometimes proves very killing for an hour or two, until other flies begin to show themselves and supersede it. Grayling, as well as trout, will occasionally rise to it at this early time of the year, and as long as it lasts. Successions of this fly appear throughout the whole season, but what is often dressed as a gnat is a minute *Tipula*, which being also aquatic, is as readily taken by trout and grayling as the other, and is dressed like it also, but on a hook one size larger, as No. 8. The *midge* is the smallest variety of gnat, and must be dressed on a hook, No. 11 or 12. The London fly-dressers are apt to call every small fancy dressed fly by the name of midge. The starling's breast feather, wound on as a hackle, dresses the above fly well.

No. 2. *Early small Black Fly.*

Wings. — Starling or hen blackbird's wing feather. To lie flat on the back.

Body. — Dressed rather full and short with the same materials as the last fly, except that the silk used in this should be of an iron blue colour

Legs. — A very minute dark hackle of a copperish hue. Hook, No. 10.

3761. *The early small black fly* is a novelty to the list, as we have never seen it described before. Its habits lead it to damp marshy situations, and it is therefore sometimes to be seen on the water in very open weather, towards the latter end of February; but its usual time of appearance is in March, during which month, and April also, it is not uncommon, and is often freely taken, but it afterwards becomes scarce: we have, however, occasionally met with it in the summer months in our rambles in the woods, and in moist and close copses. Its principal value consists in its early appearance, when our choice of flies is not great. Grayling, particularly the smaller ones, take it more readily than trout; but the latter likewise will rise freely to it in some gloomy days, and more readily when a mild warm breeze curls the water: we have not found it so successful when dressed as a hackle.

No. 3. *The Early Red Fly* (*Perlidæ*).

Wings. — Red feathers of the landrail's wing, or the red tail feathers of the partridge for the upper wings; the starling's wing will furnish the lower. To lie flat.

Body. — Any dark claret coloured fur, as that which a brindle cow yields, and that of a copperish hue from a dark brindled pig, or a brown red spaniel's ears: mix any of these with camlet, if the exact colour cannot be obtained.

Legs. — Of a dark red hackle, stained claret.

Antennæ. — The *antennæ*, or horns, and the *whisks* also, should be of any firm tapering hair of the colour of the legs, the first shorter, and the last longer, than the body. Hook, No. 9.

3762. *The Early Red* or *Old Joan* is also known as the orange tawny or orange brown, camlet-fly, withy-fly, and bastard caddis. It has likewise other names. Taylor calls it the dark claret, and in dressing it uses the darkish fur of the hare's ear mixed with any claret coloured dubbing for the body, the upper wings from the partridge's red tail feathers, the lower from the starling. "It is in season," he says, "from the latter end of February to about a week in April, and is the first fly that begins the diversion of fly-fishing. Some call it a red fly, and make it so, but they are mistaken: it is best as a dropper, where you fish with two or more flies." Bainbridge calls it a dark fly which appears early in March, and sometimes in February, when it is used all day with great success, and often for grayling as well as for trout. He uses fur from a black spaniel, with a small quantity of claret coloured camlet for the body; wing feather of a fieldfare or hen blackbird, and a dusky hackle for legs. Mr. Lascelles calls it erroneously a red dun; but his mode of dressing it for some waters, particularly the Welsh rivers, is good:—"The body is of copper coloured hog's fur from near the tail, and the wings either of a dark mottled red feather of a mallard, and the same coloured hackle for legs, or a dark grizzle cock's hackle, simply over the whole, on a hook, No. 6. His wings lie close on his back; and from twelve till one, upon rapid streams, he will show good sport." Cotton calls this the spring black, and describes two of them, one of which he dresses with black wool from a sheep's face, with or without a greenish peacock's harl for a body. The wings, he directs to be made of the grey feather of a mallard. For the other variety, he uses the very blackest part of a hare's scut, with or without a peacock's greenish harl for a body, and a fieldfare's feather for wings. He observes also of them, that they are best taken in bright weather.

3763. *A caddis-fly* of the same description appears again in September, but in the spring very great numbers are seen flying about the alders and willows which overhang the water, on the leaves of which they deposit their eggs: these eggs becoming hatched, the young larvæ fall into the water, to which they immediately become naturalised, and set about framing themselves each a protecting case.

No. 4. *The Cowdung-fly* (*Scatophaga stercoraria*, *&c.*).

Wings. — The landrail's feather dressed a little longer than the body. To lie flat on the back.

Body. — Yellow mohair, with a little brown fur to take off the bright glare, and give the whole a dirty orange tinge: the body should be dressed tolerably full.

Legs. — A ginger hackle, of a similar colour with the body. Hook, No. 7, 8, or 9.

3764. *The cowdung-fly* is justly prized for its qualities, which are such as deserve the highest commendation as a standard and almost universal fly. The female is of an *olive* hue. If the weather be open it appears very early in this month; and as there are some 20 species, it is to be seen of all sizes. This proves advantageous to the angler, for if the water be fine and low, he can use them as small as he pleases without outraging nature. It is to be observed, that as they are not aquatic, they are not often seen on the water but when blown there; and consequently they are most successfully used in blustering weather, and in the rivers of midland counties in particular, which are usually skirted by grass fields, they are taken with great eagerness at all hours throughout the whole fishing season; but, as might be expected in situations where they are less indigenous, the imitation is less freely taken. As they are so valuable, it is of consequence to dress them true to colour and shape. The original may be seen in clusters on every cow dropping, when it will be observed that their *wings* are very transparent, which should be carefully imitated by a thin almost diaphanous feather, with a glossy reflection from it. The *body* should be rather full, and rough with its dubbing, the colour of which should be of that tawny hue seen in the majority of these flies, but which is not, however, always imitated well by the fly-dressers: and for this reason we have usually preferred to make our own cowdung-flies from some wool which we dyed ourselves for the express purpose; for we consider that there is no fly in the whole catalogue which demands for its imitation exactness, both in shape and colour, more than this. By some extraordinary mistake, Bowlker describes this fly as having upright wings; and as many of the London fly-makers dress their flies by his directions, we need not wonder that they are often bought with their wings unnaturally staring outwards. We have killed grayling with it as well as trout; but for the latter it is in the midland counties a most killing bait. The extreme eagerness with which almost all the fly-taking fish rush on the cowdung-fly is a proof that it is not essential to their ardour in taking flies, that the origin of such flies should be aquatic, as some have asserted. Few winged insects, if we except the May-flies, are so acceptable to them as this cowdung-fly, which we know is found on the excrement of animals, particularly on that of the bovine kind; and hence its characteristic and universally acknowledged cognomen of *cowdung-fly*. It is therefore a deserved favourite with most early fly-fishers. In windy weather at this season the observant angler will see the fish congregating towards the surface, as though waiting to give them a cordial reception, which it cannot be denied they do, when they receive them into their bosoms. As anglers we are therefore much indebted to these flies, for they are certain in their appearance throughout the whole of the spring, the summer, and the autumn months, and they are fortunately very hardy, and hence are equally common in foul or in fair weather; nor is it only a favourite at the times we hint, but is acceptable in all, for we have seen them pursued with avidity, when other favourites were neglected; indeed, we hardly know one, with the exception of the above named, that may compete with them. This fly is also easily dressed, and will be found equally killing, either with or without whisks, so that the orange of the body be sufficiently striking.

No. 5. *The Dark Drone* (*Dolerus niger*).

Wings. — An old cock starling's wing feather.

Body. — Dark mole or dark rabbit fur, or, in default of these, that of the water rat may be substituted; in which latter case a little deep coloured mohair will be required to produce the proper hue, but in the former mix a little reddish brown mohair with either of the furs used. The silk employed in forming this fly should be orange colour. Hook, No. 8. or 9.

Legs. — A minute, dark, dun hackle.

Tail whisks. — Any two minute tapering hairs of a proper length, and deep brown colour.

3765. *The dark drone* is called also the great dark dun. By Taylor, whose method we think good, it is named the blow-fox. He uses the starling's feather for *wings*; the *body* he makes of fox fur, collected close to the skin of the shoulder, mixed with some from the black tail of a rabbit, and a little pale straw coloured mohair. He directs to proceed with the wings and body in the usual manner, until the dressing is carried low enough to put in the fork, which he recommends to be of two fine hairs that grow next the skin of a monkey, where the outer ends are yellowish. These, he remarks, are of a fine colour, and nothing can be found so good a match for the body of the fly. We have found it in season from the latter end of February till the end of April.

The Dun Flies (*Ephemeridæ*).

3766. *The small ephemeral flies*, called *duns* in the angler's vocabulary, are very important to his practice: the entomological outline will show that they are very numerous also. A few, as the May-fly, the March-brown, and the August dun, are large; most of the remainder are very small, but are yet so attractive to fish, particularly to the trout, that in the counties which are favourable to their propagation and increase they form the sheet anchor of the trout fly-fisher's practice. It would be difficult in the extreme for the most attentive, either angler or naturalist, to designate or characterise them individually, from their numbers and varieties. The short period of their existence, limited to a few days in most, and in some to a few hours only, renders a constant succession necessary to fill up the void. They have been grouped under the comprehensive term of *duns*, which has become so conventional, that it would be extremely difficult to disjoin them; although, whoever examines the yellow and the orange varieties, which equally pass under the same name, will find they have little of a dun hue about them. These are, however, extreme exceptions; for it is very certain that, in most of the other varieties, there is a predominating *blueish grey* tint. Were it not for the successional changes which take place in their tribes, they might perhaps be conveniently and appropriately divided into brown, red, and yellow ephemera; of each of these the modifications are almost innumerable.

3767. *Of the brown ephemeridæ or duns*, some are very dark, approaching a claret colour, which is best imitated by a dark blue mixed with a reddish brown. These are usually found in the earliest part of the fly-fishing season, and to them usually succeeds a mixture of red and ash coloured varieties, followed by new series, which are gradually softened into the different hues of dun, orange, or yellowish ash. Of the true *dun ephemeral flies*, the variety is equally endless, from the early blue dun, which may be considered as the *type*, through all the gradations of iron blue, violet blue, ashy grey, and pale blue. The yellow ephemeral duns are still more difficult to define, as there are few even of the former but what exhibit a yellowish intermixing tinge about some parts of their little frame. Often it appears in exquisite orange bars over the abdomen; but they derive their character from the yellow being more strictly predominant. In some may be perceived a slight mixture of bright yellow, with a larger of ashy dun. When both colours are bright, an elegant tint of green is produced. In others, again, as the little yellow May-fly, bright yellow prevails without mixture. Of all these the series are wonderfully varied, some having orange bodies and dun wings, while in others the orange is shed over the wings, and the dun body serves as a foil to them.

3768. *The successional change of colour* which takes place in the species of *Ephemeridæ* as they advance from the spring to summer, and as they retrograde again towards autumn, has not escaped the notice of anglers; and we find in most of the directions for fly-dressing the subject practically glanced at; but no systematic arrangement of the series has been attempted. All that has been hitherto noted is, that in the early spring months the predominating colours of the winged insects which are seen near the water is almost black. The early duns are of a very dark olive, whose successional varieties, as the season advances, assume a lighter brown, while others shine in a heavy blue, until at length yellow, orange, or cinnamon, decks the former, and pale blue the latter, intermixed with others apparently compounded between these. With one exception, that of the blue-blow, the ephemera appear invariably to become of a lighter hue as warmth and light increase; and we see the summer duns dressed in bright yellow, orange, red, and cinnamon. From these fresh relays appear; and as the season advances, they again assume the varying shades of red, brown, violet, and claret colour. *Males and females* often differ widely in the same species.

3769. *The daily appearance of the Ephemeridæ*, as well as the colours they shine in, are also under the influence of times and seasons. Excess of cold, as well as of heat, is unfavourable to them: thus in the depths of winter they are not seen at all; in spring they do not show themselves until towards noon; while in the meridian splendour of the summer days they (to avoid the heat) come out in the mornings and evenings principally, and are hardly seen in midday. A kind and provident Nature so suits the supply of her creatures, that her economy may never be disturbed. If these ephemeral flies appeared all of them at one time, the air would be vitiated, and the birds and the fishes which live on them would be glutted to satiety and fatal repletion at one time, and at another might want the necessary support. But we see species after species arrive in succession to fill up the breaks made by the last; and that no considerable interruption may occur by variation in temperature and changes in weather, some are destined to appear when cold and storms prevail, while others require cloudless skies and genial warmth to draw them from their seclusion. The whirling dun thus frolics in the gale, the red spinner dances in the sunny beam, and the blue-blow braves the chilling day. The observant angler makes a practical use of this, and frames his mimic art accordingly. The males appear a few days *before* the females.

3770. *The older writers* generally characterised these flies by arbitrary names, and these were unfortunately absurd and unmeaning. Later authors have named them more according to their own view of their colours, in which, as they have been no less arbitrary than their predecessors, each naming them according to his own fancy or opinion of shade, so between the one and the other there are not less than fifty names, and twice as many or more dun types. In the formation of our catalogue, we have therefore found some difficulty in designating these tribes. We regret to call them by such trivial appellations, but we do not at present think ourselves authorised in rejecting the names in common use: we however, in selecting from the popular nomenclature, have endeavoured to choose those which best characterise the insects, and are best known.

No. 6. *Large March-brown Dun* (*Bætis longicauda*).

Wings.—Mottled feather from the tail of a partridge, or hen pheasant. Set upright.
Body.—Light fur and red squirrel's fur mixed, and ribbed with yellow silk.
Legs.—A grizzled dun hackle for legs. Hook, No. 6.
Tail whisks.—Two fibres of the feather the wings are made of.

3771. *The March-brown* is the cob-fly of the Welsh anglers, the turkey-fly of Walton, the dun-drake or brown caughlan of Taylor, and the March-brown of Bainbridge, who recommends the mottled feather from the ptarmigan or partridge, in its summer plumage, for *wings*; the *body* of hare's ear, with yellow worsted. He also says it may be dressed as a hackle, in which we agree with him, particularly when the exact partridge feather is not at hand; for it is only by this mottling that any just representation of the fly can be made. Walton's dressing is, "Body, brown foal's hair; tops of the wings of a woodcock, some ruddy, others grey, well mixed together; warp with pink and yellow, or pink and light coloured brown silk, twisted together; wings, of cock pheasant's feather." Bowlker observes on this fly, that it continues to the end of April. Its mottled wings stand full as much, and we think rather more upright than as seen in the figure offered of it; and no feather suits the purpose better than those above noted; although Bowlker recommends the pheasant's wing, which is not equally characteristic with either the wing feather of the partridge or ptarmigan, particularly the former; and as this fly is a very important one to the angler's success, we think he cannot be too particular in his dressings of it. The tail whisks, also, we were always very solicitous to dress with three mottled fibres. It is, we repeat, an important fly to the angler. The female is much lighter, with a *greenish* tint.

3772. *We have known the dappled hen pheasant's* wing feather successfully substituted for *wings;* but nothing is equal to the partridge feather. During five successive years, fishing in a branch of the Colne, this fly appeared, on an average, two days before the middle of March; but not in any great numbers, for it is a tender fly, and is not seen at all thus early in the season if the days be cold. Bainbridge's account is so much in accordance with our own observations, that we transcribe it: — " This very excellent fly generally appears about the middle of March, and is strongly recommended as a good killer from eleven until three o'clock. Large quantities of these beautiful insects sail down the streams in succession, and invite the trout to action. Their wings are upright on the body, as shown in the plate; and whilst they are on the water, it is almost in vain to attempt the use of any other fly. Therefore, as they vary in the shade of the body, it is advised to use *three* flies of this form, but of different sizes and colours, at the same time, which will insure success to the angler." In Wales, it is found to be one of their most killing flies, and to take the largest fish. In fact, it appears to large rivers what the green drake is to small ones.

No. 7. *The Blue Dun* (*Ephemeridæ*).

Wings. — From the tit-mouse tail-feather, or the blue part under the male widgeon's wing. To stand erect.

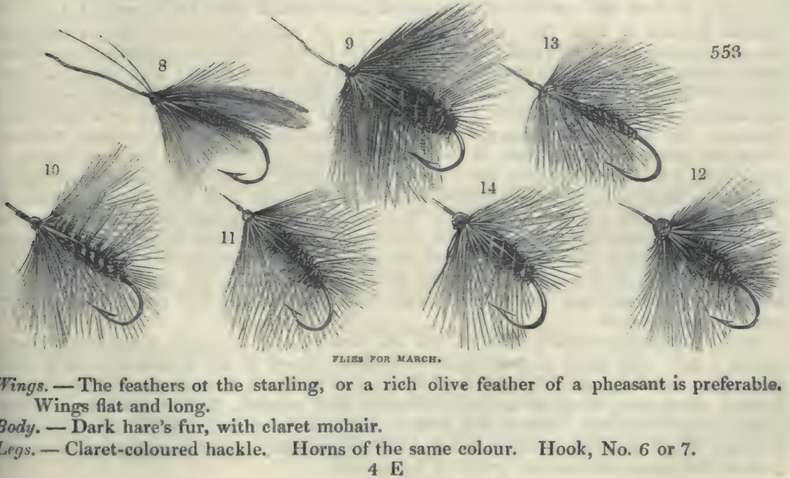
Body. — Fur from the water rat or hare's ear. Yellow silk may be used for whipping, if the exact shade of the natural fly cannot be obtained.

Legs. — A very fine hackle, as near the colour of the other parts as it can be procured.

Tail whisks. — Two blue hairs. Hook, No. 9 or 10.

3773. *The blue dun* is the blue fox of Taylor, and the bloa watchet of Cotton. Bainbridge observes with great truth that it is extremely difficult to find a feather of the exact shade, or sufficiently delicate in its fibre for the wings of this minute fly. It was for this reason we always ourselves dressed it with the tail feather of the tom-tit, until we obtained some fine blue coloured feathers from a West Indian creeper, which answered our purpose better than any feather we had before or since met with. Bainbridge, to obviate the difficulty of finding the proper tint, recommends to make it of a pale dun hackle, and to employ it as a dropper; but as it is principally useful in cold days, what is to be made as the stretcher to it? It is true that in the season of the great whirling dun, or in situations where the cow-dung is a favourite, either of these may be advantageously used for that purpose; and we wonder that the acuteness of Bainbridge had not led him to a similar conclusion. It is a singular but a fortunate circumstance for the angler, that this fly and the dark should delight to appear on cold windy days, and that it should be seldom seen on warm ones, which are the principal times when the other varieties of the dun are on the water in numbers. It comes on early in March and continues through April, when it is succeeded by a race of flies in which the blue dun tinge predominates in various proportions. It is well therefore to be prepared with gradations of this fly, of which the ashy dun appears the first: these the angler's sagacity will prompt him to look for in the original fly, and afterwards to make his representatives accordingly. In favourable days, the blue dun will kill in all the fishing hours, particularly in April, but best towards mid-day. It is likewise almost universal on the British waters.

No. 8. *The early dark-bodied Willow-fly* (*Perlidæ*).



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FLIES FOR MARCH.

Wings. — The feathers of the starling, or a rich olive feather of a pheasant is preferable. Wings flat and long.

Body. — Dark hare's fur, with claret mohair.

Legs. — Claret-coloured hackle. Horns of the same colour. Hook, No. 6 or 7.

3774. *The early dark-bodied willow-fly* is the willow-fly of *Salmonia*, and the second spring black of Cotton. Like the other early red fly it is seen hovering about the willows, withies, and alders. It is also like that *neuropterous*, appearing on the water if the season be open early in this month, and very soon after the red-fly. Another variety shows itself in the next month, nearly of the same size, but of a lighter and more dirty yellow, No. 25. It is the fly intended by *Salmonia* as the yellow willow phryganea, and is by some mistaken for the Yellow Sally; but this is certainly a distinct insect. The early dark-bodied willow-fly is best taken in bright days, but it seldom proves a very tempting bait; we have, however, occasionally had an hour or two of sport with it in an uncertain day, when the sun has shone brightly at intervals, and has as suddenly been obscured by clouds.

No. 9. *The Black Palmer-hackle* (*Arctia caja*, &c).

Body. — A fibre from a black ostrich feather, ribbed with gold tinsel.

Hackle. — Black, wrapped over the whole body with black silk for fastenings. Hook, No. 4, 5, 6, or 7.

No. 10. *The Brown Palmer-hackle.*

Body. — Brown fur, or mohair of a deep amber, or otherwise a rich brown fibre of ostrich feather, ribbed alternately with gold and silver tinsel.

Hackle. — Of the red cock, worked with orange coloured silk. Hook, No. 4, 5, 6, or 7.

No. 11. *The Red Palmer-hackle.*

Body. — Dark red coloured mohair, with a little rich tinted red fur intermixed. The ribbing of either gold or silver tinsel; occasionally of bright yellow and green silk twist together.

Hackle. — Of a blood red cock, worked with red silk. It makes a good variation to use bright yellow silk on some occasions. Hook, No. 4, 5, 6, 7.

No. 12. *The Golden Palmer-hackle.*

Body. — Green and gold colour peacock harl ribbed with gold twist.

Hackle. — Of a bright red cock, worked with a rich green silk. Hook, No. 4, 5, 6, 7.

No. 13. *The Peacock Palmer-hackle.*

Body. — A rich full fibre of peacock harl, ribbed wide with silver tinsel, in preference to wire or twist. Form a head of this palmer with a bit of scarlet mohair.

Hackle. — A dark grizzle hackle worked with red silk. Hook, No. 5 or 6.

No. 14. *The Golden Peacock Palmer-hackle.*

Body. — The same as the last, except that it should be ribbed with gold tinsel, and worked with green silk, instead of silver platting and red silk.

Hackle. — A dark blood red. Hook, No. 4, 5, or 6.

3775. *As palmer-hackles* are meant to represent the larvæ or caterpillars of moths, as well as some of the insects themselves, it is very evident that their sizes and colours may be varied indefinitely. If our experience did not inform us that they are very effective in taking fish, we should be naturally led to expect it: for as every tree, bush, and plant, which overhangs the water is food for one or more species of larva, which must be constantly liable to fall into it; and as from their natural plumpness of figure they must form a delicious morsel, we need not wonder that the fish are always ready to receive them, unless something more tempting (as when particularly favourite flies are on the water) is at hand to attract their attention. As these larvæ are continually appearing in endless succession, so palmers are used to advantage from March until the the latest period of fly-fishing, or at least until October. In May, June, July, and August, they are however in the greatest request. When the innumerable variations in the size, form, and colours of the larvæ of insects is considered, it is evident that the directions in our angling books to confine the number of palmers to three, four, or five, is limited in the extreme; but it is still more erroneous to confine their size to a No. 6. hook. On the contrary, there is such an endless number of them, each different from the other, that the dresser may vary them in any way he pleases with effect; keeping these general principles in view, that when the water is fine and low, they should be dressed small, and sober in their tone of colour; but when used on waters which are disturbed and the day is dark, such as are larger and more conspicuously coloured are required.

3776. *The palmer-hackles*, Nos. 24, 25, 26, and 27., are those in general use among anglers; and with some they are great favourites, almost to the exclusion of other flies. No angler, certainly, should be without them; but we must remark, that on swift trout streams, particularly such as are wide, shallow, and exposed, they are not very effective. In rivers more sheltered by trees and bushes, and whose deep pools are formed by eddies, they are found to kill very heavy trout, but more certainly in the morning and evening. The red and black are excellent grayling killers also.

3777. *The peacock palmer-hackles*, Nos. 13 and 14, are of our own dressing, nor have we ever met with them in any other collection. For chub they are very valuable varieties. On the Wye and the Severn they have also killed trout in abundance; and we can safely recommend them to the notice of anglers. Some other varieties of the palmer-hackle there are. Those of Ronalds on *double hooks* are excellent.

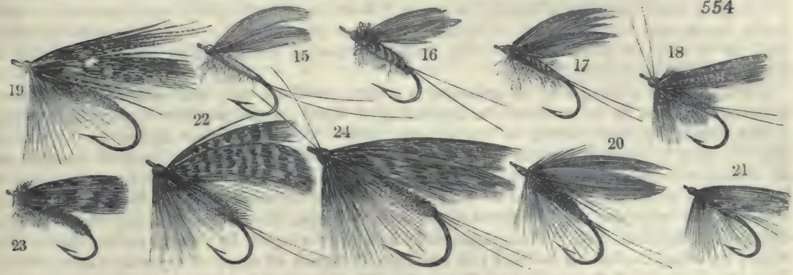
SUBSECT. 2. *Artificial Flies for April.*

3778. *The flies*, Nos. 1. to 7. inclusive, of the last month will be taken during this also. The palmers, Nos. 9. to 14. inclusive will be still more in request this month than in the last.

No. 15. Red dun or golden dun.
16. Orange bodied dun.
17. Ashy dun.
18. Grannam or green tail.

No. 19. Large spider or crane-fly.
20. Middling spider-fly.
21. Little spider-fly.

No. 22. Great whirling dun.
23. Oak-fly.
24. Stone-fly.



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FLIES FOR APRIL.

No. 15. *The Red Dun or Spinner* (*Ephemeridæ*).

Wings. — Starling or hen blackbird. To stand upright.

Body. — Dark fur of a hare's ear mixed with a little yellow from the same part. It must be dressed fine, as the body is small.

Legs. — Or dress the body with a small piece of a reddish brown coloured camlet, and pick it out rather rough on the under side to represent legs.

Tail whisks. — Two taper hairs. Hook, No. 7.

3779. *The red dun*, called by Taylor the *hare's ear and yellow*, is sometimes greedily taken by both trout and grayling. It was a great hobby with him, and, like most hobbies, was over ridden: it is however a good spring dun, lasting through the month, and appearing again in September. The *pseudimago* is the hare's ear and yellow.

No. 16. *Whirling Blue Dun* (*Ephemeridæ*).

Wings. — Of starling's feather. To stand erect.

Body. — Hare's mixed fur, with a little orange coloured mohair wrapped with orange silk, and forked.

Legs. — Picked out of the dubbing at the shoulder. Hook, No. 7 or 8.

3780. *The whirling blue dun* is seen about the middle of this month, and lasts until the middle of the next, when it is succeeded by other races, which should be dressed of a more brilliant yellow. It is a good midday fly, and visits us again in September.

No. 17. *The Ashy Dun* (*Ephemeridæ*).

Wings. — Of the hen blackbird or bunting wing feather. To stand upright.

Body. — The fur of a water rat or light part of a mole's skin, with a little orange coloured mohair: add a fork, and pick legs out of the dubbing. Hook, No. 9 or 10.

3781. *The ashy dun*, the ash fox of Taylor, bears a strong resemblance to some light varieties of the blue dun. It is a good fly for this month, and will kill through the whole of a gloomy day. These duns are all of them taken by grayling as well as trout, and on their second appearance in September and October they commit great havoc among them.

No. 18. *The Grannam* (*Phryganeidæ*).

Wings. — Hen pheasant's wing.

Body. — Dark fur of a hare's ear finished with a small wrapping of bright green floss silk.

Legs. — Grizzle hackle. Horns, the length of the body. Hook, No. 7.

3782. *The grannam*, which is also called the green tail, from its ovarial enlargement at the hinder parts, is one of the flies produced from a caddis, with moth-like wings, which lie flat on the back. While it lasts it is a killing fly; and as it always obtains a considerable notice in our angling books, we shall add the mode of dressing it adopted by others. Taylor's method is thus given: — "The wings are from a feather out of a pheasant's wing, which has a fine shade that exhibits the very resemblance of those of the real fly: the body, the black part of hare's fur, a brown strip of a feather from a peacock's tail, and a very small bit of a green one with a grizzle cock's hackle; whip in the ends of the peacock's feathers both together at bottom, lapping the green one only once round below the silk; then, sloping it a little upwards, fasten it and cut away what remains, leaving it to be about as large as the head of a largish pin; twist the fur on your silk, lap it a little thinnish up to the feather for the wings, and there fasten in the point of the hackle; then, with the brown peacock that was fastened below, rib it all the way up, and fasten that; now let the hackle be lapped twice round, fastened, and what remains cut away; then finish the wings (taking care that no other part be tied in with them), and fasten off."

3783. *Bainbridge makes the wings of the grannam* from "the shaded feather of a partridge or hen pheasant; the body, of the dark fur from a hare's ear, mixed with a little blue fur; and for the tail, the green harl from the eye of a peacock's tail is the most showy material, although a small quantity of *bright green wax* (*about the size of a pin's head*), attached to the hook, is the best representation of nature; a yellow grizzle hackle should be used for the legs, or it may be dressed as a hackle, with the shaded feather from under a woodcock's wing over the same body."

3784. *Bowlker's account of the grannam* is a very excellent one, and describes "the first appearance of the fly to be about the beginning of April (if the weather is warm), it being a very tender fly, and unable to endure the cold. When they first appear on the water, they are seen in great quantities: on bright mornings you may begin to fish with them from six o'clock till eleven; then you will find the browns come on, which you must use, as the fish will not touch the grannams as long as the brown continue: about five o'clock in the evening you may use the grannams again with success, the browns having then totally disappeared for that day. The grannam-fly is a four winged fly; as it swims down the water, its wings lie flat on its back; it has a small bunch of eggs, of a green colour, which gives it the name of the green tail fly; as soon as it lights on the water, it drops its eggs; it is of short duration, not lasting above a week, after which it totally disappears for that year. The wings are made from a feather out of the wing of a partridge or pheasant, which is shaded like the wing of a fly; the body is made of the fur from a hare's face or ear, and a grizzled hackle of a cock wrapt under the butt of the wings. The hook, No. 8." Sir Humphry Davy notes this as a good grayling fly. As regards our own opinion, we never considered it such; but as we have little doubt that he wrote from experience, we recommend it for trial, and it may very probably take with them better in some waters than in others.

No. 19. *The large Spider-fly or Crane-fly* (*T. rivosa*).

Wings. — The mottled feather of a partridge. To be dressed thin, as well as rather long and extended.

Body. — Brown fur, with any dun mixture, dressed long, and not too full, according to the figure.

Legs. — A thin but long fibred hackle. Hook, No. 4.

No. 20. *The middling Spider-fly* (*T. hortorum*).

Wings. — Starling or hen blackbird's wing feathers. To be dressed rather long and extended.

Body. — Rather darker than the former; in figure the same.

Legs. — The same as the last. Hook, No. 5 or 6.

No. 21. *The small Spider or Gravel-fly* (*T. aquatica*).

Wings. — Snipe, woodcock, grouse, or hen blackbird's transparent feather. To be nearly close and flat.

Body. — Lead coloured silk, only without dubbing; rather long.

Legs. — A minute portion of a long fine fibred brown feather. Hook, No. 8, 9, or 10.

3785. *The natural history of the genus Tipula* will correct many erroneous suppositions relative to these flies; and the figure and descriptions there given of the varieties will further instruct the angler how to imitate them.

3786. *Of the Tipulæ, or crane-flies*, the two first kinds are met with in our meadows and gardens, the first being very common to the former; and the second is so common around us, that at the very moment when some angler is reading this account, after the fatigues of a fishing day, he probably may meet with an exemplification of its intruding familiarity by its entering his apartment and putting out his candle. It is this variety which Bainbridge figures as the Harry-long-legs, with *upright* wings and *four* legs. The wings of the *Tipulæ*, popularly known as the Harry-long-legs, are *horizontally* expanded, in which way, of course, they ought to be dressed to attract the fish by their natural appearance; and that they have all *six legs*, instead of four. Their origin is not aquatic, but they are bred from larvæ or grubs which have been deposited, some under grass roots, and some within decayed willows and other trees; they are hence strictly terrestrial animals. It is therefore to be expected that when they are found on the water it must be by the force of the wind, and consequently that, like the cowdung, they are best taken by both trout and grayling in windy and blustering weather, as is actually the case. At such times our experience coincides with that of Bainbridge, who says that their merits have been underrated by many anglers, and that on the contrary they will be found good killers on cloudy days. The largest tipulæ or crane-flies may be met with early in the spring; they increase in plenty during the summer, and only leave us with the winter's cold. This fly is to be regarded therefore as a general occupant of the annual catalogue.

3787. *There is another variety* (*Tipula crocata*) noticed in the entomology of angling, less common than the former, but much more lively in its colours, having a brilliant black body barred with bright yellow. Its wings are extended like the others, and the general size is the same with No. 20., but the circumference of the body is considerably larger. A clever representative of this would make a very showy and tempting artificial fly for water clearing after a flood.

3788. *The small spider or gravel-flies* (as they are called by some, from their being supposed to spring out of the gravel, as they are named by others spider-flies, from the fancied resemblance of the insect to a spider), unlike the larger varieties, have close incumbent wings, and the artificial fly must be consequently so dressed. Taylor's account of the spider fly runs thus: — "It is made after this manner: when you have got about a quarter of the way down in whipping on the hook, put in the points of the woodcock's feather (having it properly prepared as before directed), and fasten it with the silk, going on till you come nearly opposite the point of the hook; there, with your silk (which must be of a lead colour, and not waxed), begin to form the body, leaving it pretty thick at the tail, and allowing it to go thinner upwards, like the ant: when you come near to where the feather is fastened, put in the point of the black hackle, and lapping up your silk a little to be out of the way, take the black hackle, and lap it two or three times round close to where the other feather is tied in; if any more fibres remain, strip them off, and fasten with two laps, and passing the first feather put in, lap your silk very thin up to nearly the top of the shank, and wax it; then taking the woodcock's feather, work it round pretty thick up to where you fasten off, and so finish. This fly is in season from about a week in April till a week or ten days in May, and is best as a dropper. They appear most in bright and warm days, when you may see them come out of beds of sand by the water; but they disappear when the days become cold and stormy."

3789. *Bainbridge says,* "*The gravel or spider-fly is first seen about the middle of April*, at which time the gravel, in which these animals are bred, is literally covered by incalculable numbers of them. They are extremely delicate, and not often visible on cold days; at which times, however, success is more probable with this fly than when they are to be found in such great numbers. They may be used from morning until evening; and the trout are so passionately fond of them, that they gorge themselves with their favourite food, and retire to their secret haunts, thereby disappointing the most skilful endeavours of the angler. It is probably owing to the short duration of these flies, that the fish are so greedy in devouring them, as they are seldom to be found at the expiration of about three weeks from their first appearance. The wings are made of the feather from the wing of the cuckoo's mate, the goatsucker, or, in the absence of the preceding two, from the woodcock; the body, of lead coloured silk for the lower and middle parts, and a strip of black ostrich harl for the thick part near the shoulders, round which a small dark grizzled hackle should be twisted twice, and the fly is completed."

3790. *These minute tipulæ* are strictly aquatic, being bred from larvæ which inhabit our rivers and lakes. These are of various colours and sizes, some of which may be dressed on a No. 7. hook; others are of about the bigness of gnats; and it may be remarked, that many of those flies described as gnats by anglers are small varieties of the tipulæ. When the young tipulæ have escaped from the pupa or grub state, their wings are not fully expanded, and they hide themselves under the stones, or bask in the gravel, until warmth and light have developed all their powers. It is in this helpless state that they have been considered as wingless insects by Taylor, and have been supposed to be engendered in the gravel or sand. The aquatic tipulæ are met with in the greatest numbers from the middle of April to the first week or to the middle of May, because this is the time of the great larvæ change of one of the principal varieties. Others succeed to them through the subsequent months, but comparatively in small numbers only; hence the accounts of their appearance in our angling books have been confined to a fortnight of April.

No. 22. *Great Whirling Dun* (*Neuroptera*).

Wings. — Feather of a cock starling's wing, or the pale grey from a mallard's wing. To be dressed erect.

Body. — Blue, squirrel and yellow martin's fur mixed, or otherwise dark mole and bright yellow mohair, or mix with two-thirds light hare's fur, one-third of claret coloured mohair.

Legs. — Blue dun hackle; tail forked with two dun hairs. Hook, No. 6 or 7.

3791. *The great whirling dun* is a valuable fly. In Best's respectable compilation, we find the following directions for dressing it: — "Dubbed with the fur from the bottom of a squirrel's tail, and the wings of the grey feather of a drake, or dubbed with squirrel's fur, mixed with about a sixth part of fine hog's down; the wings of a pale orange colour, taken from the quill feather off a ruddy hen; the head to be fastened with ash coloured silk, and a red unbarred cock's hackle may be wrapped under the wings, and a turn or two lower towards his tail."

3792. *This fly appears early in the month,* and continues through the whole of it in tolerable plenty; it is also seen, but less abundantly, through May and June. In very warm days it is taken principally in the morning and evening. In cold days it will raise trout all day long, but more particularly in a brisk blustering wind, when it proves usually very killing. In our own practice, we found it in all the waters of the midland counties a most excellent fly, but less so in the northern districts; it must, however, be remarked, that we were always furnished with two or three varieties. In very cold windy days, we found a large-sized imitation, in colour almost a pure dun, to be very killing. It may be observed, that the body of the natural fly varies much, but the wings are always the same.

No. 23. *Oak-fly* (*Leptis scolopacea, &c.*).

Wings. — Partridge's mottled wing feather dressed of a full size. To lie flat.

Body. — Yellow mohair, ribbed regularly with dark brown silk, and to be tipped with pale gold twist; make a large head of the brown fur of the hare.

Legs. — A honey-dun hackle wound twice under the wings. Hook, No. 9 or 10.

3793. *The oak-fly* has several synonymes, as ash, woodcock, downhill, and cannon-fly. It is also very often confounded with the hawthorn-fly, but having names enough of its own need not claim this. Walton says, and with truth, that the hawthorn is altogether a different fly. Bainbridge has likewise figured the hawthorn as a distinct species; and without doubt (although it is not so considered) the oak-fly is the same with the Downlooker. On all the waters we have tried it, it has raised many trout, and taken still more. "The oak-fly" (Cotton says) "is by some called the ash-fly, by others (but erroneously) the hawthorn-fly." The head, which is large, is of an ash colour; the upper part of the body should be greyish, with two or three hairs of bright brown mixed, and a very little light blue, and sometimes a hair or two of light green; the tail part is greyish, mixed with orange; wing of a mottled brown feather of a woodcock, partridge, or brown hen. Hook, No. 8 or 9.

3794. *This is the fly* which is seen much in March, April, May, and June, on the body of ash trees, oaks, willows, and thorns, growing near the water, standing with its head downwards; it is an excellent fly, but difficult to imitate, being of many colours, unequally mixed. It takes morning and mid-day, and does not seem to come from any caddis, for it never drops in great numbers on the water; the wings are short, and lie flat on the back, like the bluebottle, or large flesh-fly. Bowlker says that two living oak-flies put on a hook form an excellent bait to dape with for trout. Bainbridge also gives this fly an excellent character; but as his account agrees with the above, we forbear farther quotation from him than that he dresses the head from the fur of the hare's ear; body, under the wings, dun fur, in the middle orange and yellow, and towards the tail a brownish dun; the wings from the feather of a yellowish brown hen, or it may be made with a bittern's hackle only, without wings. It is said to be excellent both for dibbing in the natural state, and using artificially." We are open to conviction, and the fly is open for the angler's trial; we recommend him to try it; we have killed well with it both trout and chub.

No. 24. *The Stone-fly* (*Perla bicaudata, &c.*).

Wings. — A mottled feather of the hen pheasant, or the dark grey feather of a mallard, rather inclining to red. To be dressed large, long, and flat.

Body. — Yellow brown mohair, mixed with light hare's ear fur, and ribbed with yellow silk, so distributed that the under and hinder parts of the body may exhibit most yellow to the fish. The body must be long and full.

Antennæ. — In the finishing, add two dark hairs from the beard or whiskers of a cat or dog, or from any other skin, setting them out wide.

Legs. — Two laps of a grizzled cock's hackle. Hook, No. 4.

3795. *The Stone-fly,* called also the cad or caddis-fly, Bainbridge says, may be dressed by means of a long fibred grizzled hackle from a cock's back, without wings; and this, he states, is a very general mode of making it, which we were not aware of, and confess we should not expect much success with it so dressed. On the contrary, we think this is one of those flies that cannot be well represented by any thing but a regular wing and body, as will be evident by a reference to its natural history, and by an observation of its figure in the *Flyfisher's Entomology*, p. 76.

3796. *The angling history of this neuropterous insect* shows that it usually makes its appearance about the middle of April, although sometimes it is to be met with much earlier. It continues throughout the whole of June, and now and then later, and may be considered as a good morning and evening fly, and will be also taken during the whole of a warm gloomy day, particularly if there be wind. It is, however, much more killing when dipped with as a natural fly. Cotton's account of it is interesting and instructive: — "This same stone-fly has not the patience to continue in his crust or husk till his wings be full grown; but so soon as ever they begin to put out, that he feels himself strong — at which time we call him a *jack* — squeezes himself out of prison, and crawls to the top of some stone, where, if he can find a chink that will receive him, or can creep betwixt two stones, the one lying hollow upon the other — which, by the way, we also lay so purposely to find them — he there lurks till his wings be full grown, and there is your only place to find him, and from thence doubtless he derives his name; though, for want of such convenience, he will make shift with the hollow of a bank, or any other place where the wind cannot come to fetch him off. His body is long, and pretty thick, and as broad at the tail almost as in the middle; his colour is a very fine brown, ribbed with yellow, and much yellower on the belly than the back; he has two or three whisks also at the tag of his tail, and two little horns upon his head; his wings, when full grown, are double, and flat down his back, of the same colour but rather darker than his body, and longer than it, though he makes but little use of them, for you shall rarely see him flying, though often swimming and paddling with several feet he has under his belly, upon the water, without stirring a wing." (*Walton and Cotton*, Major's ed. 1823, p. 352.)

3797. *On the stone-fly* the *North Country Angler*, after giving some good remarks on its qualities in natural fly-fishing, finishes by the following sketch of its history, which is so much at variance not only with the experience of all anglers, but also with his own account, that we cannot but wonder at the discrepancy. He says, "It makes its appearance about the middle of May, and continues till the middle of June. It is called in some places the stone-fly and the trout-fly, and everywhere the May-fly. It is bred much in the same manner as the cod-bait fly, only the whirling dun fixes her eggs to the stone, and the May-fly lays hers among the sand under a stone: the first is bred in little becks or burns, the other in rivers. The eruca of the first is a cod-bait; the eruca of the other is the creeper, or water cricket, of which I shall here give my reader a full account." Here he evidently admits it as "bred in rivers," whereas, after having treated of it in its pupa or half winged state, he proceeds: — "As this bait lasts so short a time, you may use it in the heat of the day in shade or bush fishing, though the May-fly will do better at that time, and also at the top of the water of any strong stream, especially where it runs close to bushes that hang over the water. The May-fly lives but a little while after she is full winged, and leaves the water not three weeks just to engender, which they do in such a manner that the wind will carry the couple a great way, whilst they fly, as it were, the contrary way to each other, till both fall together on some pool, where they make a delicious morsel for the first fish that sees them. If they escape being taken, she lays her eggs, seventy or eighty, under or by the side of a stone, where the sand and gravel will soon cover them; here they grow till the spring, creeping and feeding among the gravel and under stones, till they change their larva, and become flies." It was most unfortunate for the reputation of that part of Mr. Daniel's great work on sporting which treated on fishing, that the writings of this singular author formed his principal oracle. In the *original* the numerous errors excite a smile; but where copied as authority into such a work as that of Mr. Daniel, we feel regret that the keen sportsman should not also be more of the naturalist.

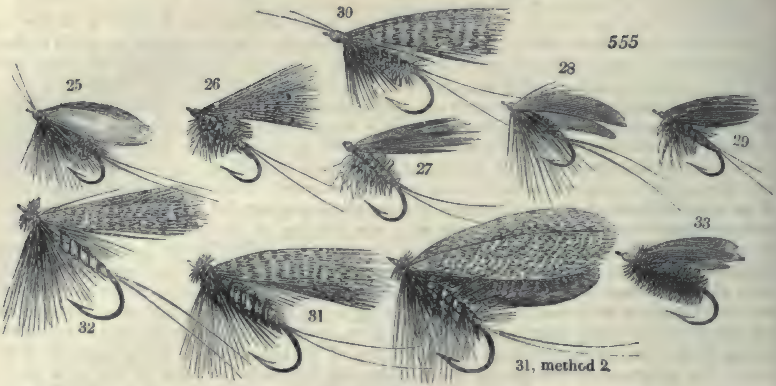
Subsect. 3. *Artificial Flies for May.*

3798. *The palmers* may be used throughout the month: Nos. 16, 17. 24. to the middle of it; No. 1. 4. 7, 8. 19, 20, 21, 22, 23. may be used throughout. No. 16. should after the first week be dressed of a more bright yellow, which will carry it through the whole of this and part of the next month: it also appears again in September.

No. 25. Later willow-fly.
26. Bright yellow dun.
27. Cream coloured dun.
28. Little whirling dun.
29. Iron blue dun.
30. Dun cut.
31. Green drake, or May-fly.
No. 32. Grey drake, or May-fly.
33. Shorn-fly.
34. Black caterpillar-fly.
35. Sand-fly.
36. Bluebottle-fly.
37. Wasp-fly.
No. 38. Case winged orange-fly.
39. White moth.
40. Cream coloured moth.
41. Brown moth.
42. Evening white winged harl-fly.

May must be considered a very busy month with the angler, little less so with the fish, and very important to the favourite flies which are entombed in myriads within the stomachs of the fly-taking tribes. It is, however, the fly-fisher's *Gala:* nature smiles on him; the beauteous winged insects hover over him; and Heaven's choristers pour forth their melody to cheer him and congratulate him.

No. 25. *Later Willow-fly* (*Phryganea*).



555

FLIES FOR MAY.

Wings. — Of the dirty white cock's hackle. To lie flat.

Body. — Camel's hair and yellow fur mixed, or cloudy yellow mohair.

Legs. — A few fibres of a grizzled hackle, two of which may be so managed as to form the horns; otherwise, add two grey hairs for the purpose. Dress with a bright yellow silk. Hook, No. 8 or 9.

3799. *The later willow-fly* is apt to be confounded with the little yellow May-dun, because both come on a short time before the green drake. These discrepancies arise from want of a due observance of the essential characteristics between the *Ephemeridæ* or day-flies, in angling language known as duns, green and grey drakes, May-flies, red spinners, &c.; and the other important class of aquatic flies, known as caddis flies, or *Phryganeidæ*. This later willow-fly is of the class *Phryganea*, but the L. May-dun, with which it is apt to be confounded, is an *Ephemera* of a very bright yellow colour, with erect wings; whereas the later willow has, in common with its congeners, four moth-like wings, which lie flat on the back. Its appearance is confined to about a fortnight or three weeks of this month, during which time in the middle of the day it is well taken by both trout and grayling.

No. 26. *Bright Yellow Dun* (*Ephemeridæ*).

Wings. — The yellow feather under the thrush's wing. To stand erect.

Body. — Bright yellow wool or mohair. To be forked with two hairs.

Legs. — A small yellow dun hackle. Hook, No. 10.

3800. *The bright yellow dun*, known by some anglers as the silk-fly, and by others as the little yellow May-dun, is certainly a minute representation of the green drake, to which it acts the part of an avant courier, by regularly appearing a few days previous to it. This beautiful insect may be dressed as a hackle-fly, with a dyed yellow hackle. It is a midday bait, but as far as our experience goes is not very tempting, and when the May-fly appears is no longer noticed, and itself soon disappears.

No. 27. *Cream-coloured Dun* (*Ephemeridæ*).

Wings. — Light part of the landrail's feather. To stand erect.

Body. — Cream coloured mohair, wrapped with orange coloured silk. Forked with two yellow hairs.

Legs. — Picked out from the dubbing. Hook, No. 8 or 9.

3801. *The cream coloured dun* appears about the middle of this month, lasts until the middle of July, and is taken by trout all day in warm weather, particularly when the day is overcast without tempest. We were once very successful with this fly on the Lugg, in fishing for the grayling of that river.

No. 28. *Little Whirling Dun* (*Ephemeridæ*).

Wings. — Starling's wing feather.

Body. — Ash coloured fur, enlivened with a little light brown mohair, the whole worked with a light orange silk.

Legs. — A minute portion of landrail feather, with two strands or fibres of the same for forking. Hook, No. 9.

3802. *The little whirling dun*, like the larger, takes its name from the whirling manner of its flight: it appears on the water about the middle of the month, and remains with us through June, and sometimes until the first fortnight of July. In moderately warm weather it may be used all day long, and in sultry seasons, when accompanied with wind, it is very successful about mid-day. In colder weather, singular as the fact may seem, it is taken best in the mornings and evenings; but as to its general character it is most killing in all cases when a breeze is stirring. It appears again about the middle of August, when grayling will take it as well as trout.

No. 29. *Little Iron-blue* (*Ephemeridæ*).

Wings. — From a tomtit's tail, or cormorant, or merlin hawk's wing.
Body. — Pale blue fur wrapt with purple silk, and forked.
Legs. — Picked from out of the fur. Hook, No. 12.

3803. *The little iron-blue* is, with the exception of the gnat, the smallest fly that is imitated by the angler; yet its apparent insignificance is no bar to the admiration of the fish; and as the angler must study their taste and not his own, so he would do well on a cold windy day, when the trout, like ourselves, are apt to be fastidious, to furnish himself with these little gentry, which he may use with great advantage from ten or eleven o'clock in the forenoon until three or four in the afternoon from the first week in this month until the middle of the next: and where grayling are to be found, it will prove an excellent lure for them also.

No. 30. *The Dun-cut* (*Phryganeidæ*).

Wings. — Yellowish green feather of a landrail, to be dressed rather longer than the body To lie flat.
Body. — Bear's hair with brown and yellow crewel or mohair mixed. After this is applied in the usual manner, rib the body with bright orange silk.
Legs. — Picked out from the fur, or added by a very minute ginger hackle, two fibres of which may be carried forwards to represent the horns or antennæ. Hook, No. 8, 9, or 10., for it will bear all these varieties to suit it to the occasional alterations in the state of the water.

3804. *The dun-cut* proves in many cases a very killing caddis-fly. It regularly appears in this month, but at an uncertain period of it, and seldom lasts longer than the middle of June. It will take fish on gloomy days the whole day through, but best of all in warm sultry evenings, when its execution is often very great, particularly with trout, being, according to our observations, less greedily sought by grayling.

No. 31. *The Green Drake or May-fly* (*Ephemera vulgata*), *dressed after two Methods.*

FIRST METHOD.

Wings. — The mottled feather of the mallard dyed a pale yellow green. To stand erect, and to be slightly divided.
Body. — Bright yellow mohair, ribbed with light bronze peacock's harl.
Legs. — A red ginger hackle, forked with two hairs. Hook, No. 5 or 6.

3805. *The green drake*, to be well dressed after the following method, requires skill; but if our judgment has not greatly deceived us, it deserves a place in every angler's collection, though we never saw it in any other than our own, or in such as had been made from specimens obtained from us. Our method was as follows:—Having first dubbed the shank of a gut-armed hook, from below to the setting on of the wings, with bright yellow mohair spun over orange coloured silk, carried round the shank in rather open turns so as to represent ribs, we secured the silk by a half hitch. At this time the wings were attached in the usual manner, and under the last lappings made to secure them was laid in a long and fine peacock's harl, which being made fast, was then, both silk and harl, lightly twisted together, and both were carried upwards to form the head, when returning to the setting on of the wings, both harl and silk were passed between them to assist in the proper division of the wings. This done, we found it better to make a momentary separation of the silk from the harl, in order to wind two firm turns of the bare silk around the butt of the hackle now laid in for the legs, which having firmly fastened off, a slight twisting of the silk and harl were again made, and for two or three turns more were carried over or rather between the ribbings of the yellow dubbing below the wings, where, making another momentary separation of the silk and dubbing, and having secured the work by a half hitch, the hackle was passed two or three turns very close under the butt of the wings, and fastened off. This done, the remainder of the hackle was trimmed away, and the silk and the harl being lightly twisted together, were again continued to form alternate dark and light ribs, by interposing each lap between those laps previously made with the yellow dubbing, which being well done, the variegated abdominal rings of the fly show remarkably well, and being held together by the silk, they invariably remained permanent. Thus, having carried the body within nearly a turn or two of the requisite length, again disunite the silk and harl, and under the same wraps which secured the harl introduce two sable or fitchett hairs for forkings, so lapped as to point rather upwards. The finishing off wraps will form the last abdominal ring of the fly, and leave it complete. The usual dressing of this fly is with three whisks, but we prefer two, from observing that when three were used, unless they were too coarse to be natural, they were apt to unite and form a ripple as well as an unsightly appearance.

SECOND METHOD.

Wings. — The ends of two dyed mallard feathers placed very erect, one for each wing, the points being directed towards each other, but as a whole forming an arch over the body.

Body. — A thin dubbing of very light green mohair ribbed with fine gold twist, forked as the first.

Legs. — A full red hackle dressed over the whole, somewhat after the manner of a palmer. Hook, No. 5.

3806. *This variety in the manufacture of the May-fly*, at least so much of it as regards the wings, is said to have originated among the Hampshire dressers. A fly *tied* after this fashion is however now common in the London shops, but is there usually, as far as we have observed, made more in the nature of a hackle-fly, having neither dubbing nor whisks. Occasionally we have seen it forked, but seldom dubbed. We have however to observe, that in this form these flies are sometimes taken freely, but we think by no means equally so as when dressed according to our method. The figure, we hope, will represent that it is not a stripping of fibre which forms the wing of the fly in this variety, but the fibrous end of an individual feather is employed for each wing, stem and all; and for rapid streams or eddies it certainly proves very killing, and it was principally invented for their use, but is less adapted to moderate waters. The wings being supported by the stem of the feather, and being also arched, present such a resistance to currents that they do not get clubbed or drawn into a shapeless mass like those dressed in the ordinary manner, but show themselves like the wings of the natural fly, which, it is to be observed, is not blown on the water by accident as some flies are, neither does it rise and fall on the water like the grey drake, but alights on it with unruffled wings while it deposits its eggs. For the same reasons the stiff resistance made by the upright feather makes this variety scarce and ripples still water too much.

3807. *The use of the May-fly* is by no means so unlimited as is supposed. In some rivers it is not bred at all, and consequently, as being there unnatural, will not readily raise fish by its artificial representations. The Wandle is an instance of this, and several other English rivers to be noted hereafter. Neither is the May-fly often found on very large rivers, but is more usually bred in shaded brooks and rivulets, such as the Colne, the rivers and streams of Hampshire, Derbyshire, &c.

3808. *Wherever the Ephemera vulgata*, or May-fly of anglers, is bred, its attractive qualities to fish is surprising. Trout, by their avidity, would seem to seek it instinctively, not only as the most luxurious food, but as the most sanative also; for during the time it is on the water they lose their remaining emaciation, and thrive amazingly; their muscles become deeply tinged with red blood, and their vigour is so increased, that the young angler who plays a trout of a pound in this season is often led to suspect that he is encountering a fish of double the weight. We remember, in the Colne, to have heard the outcries of a young friend but recently initiated, who being at some distance from ourselves called out lustily for help, he having, as he said, "hooked so large a fish that he was afraid his tackle would give way." *Our united efforts* (!) landed this leviathan, whose weight was exactly three-quarters of a pound, very much to the chagrin of our friend. A similar disappointment occurred to a fly-fisher in the Thames, near Marlow. After having all the line run out, &c. he landed a trout of two pounds only, but *hooked foul!*

3809. *The time of the appearance of the yellow green May-fly* is very much regulated by season. It however seldom departs from its old custom of showing some of its tribes between the 18th and 22d of May; but the grand show is advanced or protracted by the advance or tardiness of summer heats. The appearance is almost simultaneous in all the midland counties. Cotton says, "the *green drake* comes in about the 20th of this month, or betwixt that and the latter end; for they are sometimes sooner and sometimes later, according to the quality of the year, but never well taken till towards the end of this month and the beginning of June." If we except the error of considering the May-fly as a phryganea or caddis-fly, instead of an ephemera or day-fly, we cannot fail to be pleased with his accurate description of its habits and manners in his continuation of this subject: — "The stone-fly comes much sooner, so early as the middle of April; but is never well taken till towards the middle of May, and continues to kill much longer than the green drake stays with us, so long as to the end almost of June, and indeed so long as there are any of them to be seen upon the water; and sometimes in an artificial fly, and late at night, or before sunrise in a morning, longer. Now both these flies, and I believe many others, though I think not all, are certainly and demonstratively bred in the very rivers where they are taken, our caddis or cod-bait, which lie under stones in the bottom of the water, most of them turning into those two flies, and being gathered in the husk, or crust, near the time of their maturity, are very easily known and distinguished, and are of all other the most remarkable, both for their size as being of all other the biggest — the shortest of them being a full inch long or more — and for the execution they do, the trout and grayling being much more greedy of them than of any others; and indeed the trout never feeds fat, nor comes into his perfect season, till these flies come in. Of these, the green drake never discloses from his husk till he be first there grown to full maturity, body, wings, and all; and then he creeps out of his cell, but with his wings so crimped and ruffled, by being pressed together in that narrow room, that they are, for some hours, totally useless to him; by which means he is compelled either to creep upon the flags, sedges, and blades of grass, if his first rising from the bottom of the water be near the banks of the river, till the air and sun stiffen and smooth them; or if his first appearance above water happen to be in the middle, he then lies upon the surface of the water like a ship at hull, for his feet are totally useless to him there, and he cannot creep upon the water as the stone-fly can, until his wings have got stiffness to fly with, if by some trout or grayling he be not taken in the interim, which ten to one he is, and then his wings stand high, and closed exact upon his back, like the butterfly, and his motion in flying is the same. The body is in some of a paler, in others of a darker yellow, for they are not all exactly of a colour, ribbed with rows of green, long, slender, and growing sharp towards the tail, at the end of which he has three long small whisks of a very dark colour, almost black, and his tail turns up towards his back like a mallard; from whence, questionless, he has his name of the green drake."

3810. *Bainbridge's account of the May-fly* is also well worthy of notice: — "They appear about the 20th of May, and continue for nearly a month. The wings stand erect upon the back, and vary, in the tints of yellow, in different flies. The body is long, slender, and taper towards the tail, from the end of which spring the forked whisks, which, turning upwards towards the back, give the name of green drake to this fly. The body is made of hog's down, or light bear's hair intermixed with yellow mohair, or of barber's yellow silk only, warped with pale floss silk, and a small strip of peacock's harl for the head. A bittern's hackle is acknowledged to be the best imitation of the legs and dark stripes of the body, and for the tail the long hairs of sable or fitchet are most appropriate." Bainbridge gives the two following methods of dressing the May-fly as handed to him by an ingenious friend: — For the drake flies — "White, or pale straw coloured floss silk, ribbed with very fine silk, either black, brown, or copper coloured, and goldbeater's skin neatly worked over the whole, which, being transparent, gives the body a rich cream coloured appearance, such as is to be observed in the natural fly." The other — "White India Rubber, properly shaped, and introduced on to the shank, through a hole previously pierced in it, with a needle sufficiently large to admit the shank and gut, when whipped together, to pass through. This has a very natural appearance, if delicately coated with copal varnish. The wings and legs are put on afterwards."

No. 32. *The Grey Drake* (*Ephemera vulgata.* Imago).

Wings. — The grey feather of a mallard, or of a teal, if not too dark. To stand erect.
Head. — A morsel of peacock's harl.
Body. — Fine down, from a white pig; light grey camlet, or whitish grey; ostrich harl, striped with deep moroon silk, and forked with two or three grey hairs.
Legs. — A grizzled hackle. Hook, No. 5 or 6.

Or,

Wings. — Grey mallard's feather.
Body. — Dressed long, with white ostrich and peacock's harls, in alternate ribs: make a head with the harl of the peacock and tip with fine silver wire, forked with sable.
Legs. — A grizzled cock's hackle, but not carried further than usual. Hook, No. 5 or 6.

3811. *The grey drake May-fly*, called by some anglers the grey caughlan, is the *imago* of the green drake, but its colours are different, and its habits also vary. It is of a light dirty yellow, with dark stripings and darker wings than those of the green drake, but more glossy. It disports itself, not in the same manner as the green drake, by seating itself on the water, but by graceful alternate risings and sinkings over it, when a momentary pause expels an egg, which immediately falls to the bottom of the water. The grey drake ephemera has erroneously been supposed to be the female of the green, which, if there wanted other proof to the contrary, would be apparent from the different times at which they appear, the grey always coming on a few days after the green. It is likewise less limited in its localities, for it is found on the largest waters, and rather oftener there than on the smaller. It usually shows itself on the water at a later hour in the day than the green, being most prevalent from 3 P. M. until sunset. When an unfavourable day has prevented the green May-fly from appearing in sufficient numbers, the grey will commit vast havoc among the trout in the evening. From the difference in the manner of its alighting, or rather from its momentary rest only on the water, it must, if possible, be thrown directly over the fish at once: any drawing of it from above downwards must evidently be more unnatural than in the other case. Taylor gives the following practical remarks on both these stages of this insect: —

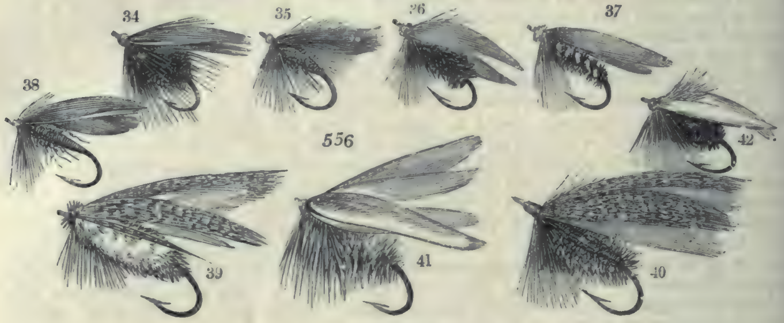
3812. *The males and females of these flies differ much*, the wings of the former are the grey spotted part of a mallard's feather, mixed with that of a widgeon; the body, light camel's hair, and a dark bittern's hackle; the fork has three fangs, and are the hairs from a fitch's tail; and the head a bit of a brown peacock's feather from the tail. The wings of the latter are the grey mallard only; the body, part of a fine oaten straw, and a cuckoo-cock's hackle. They are in season with the preceding fly (the yellow cadew), only not so forward by a few days. The yellows are on the water earlier in the day; but when the grey ones appear, the fish leave the former, and take the latter. During the continuance of these flies they are excellent, and may be termed the trout's delight. The female of the greys is deemed more killing than the male, which is accounted for by their frequenting the water in much greater numbers to deposit their ova; and probably these may render them more tasteful to the fish, particularly before they drop them. They are large flies, and are best made on a large No. 5. hook. In making the male, let the three hairs for the fork be near an inch and a half long, and made to stand open; after carrying up the camel's hair, beginning with it rougher at bottom, and leaving it smoother towards the wings, take a bittern's hackle, and rib it very thick, nearly to the tail, leaving the body clear towards the wings. The fork of the female is the same as that of the male; the straw must be whipped in at bottom, lapped neatly up to the wings, and ribbed with the cuckoo hackle, in the same way as that of the male fly. Finish both as directed in the foregoing ones. After these flies disappear, the trout for some time become very shy: most anglers are at a loss what flies to use after the greys; but the wren's tail and grouse hackle, two of the standards before mentioned, are flies which the fish will not refuse, even when the former ones are on the water in the height of their perfection."

No. 33. *Shorn-fly* (*Melolonthidæ*).

Upper wings. — Landrail's red feather. To be dressed short.
Under wings. — Starling's wing feather, or a dun hackle.
Body. — Peacock's harl. Hook, No. 6.

3813. *The shorn-fly* is one of the stumbling-blocks to the learner, who is continually breaking his shins over one obscurity or another in perusing the accounts of flies as we meet with them in our angling books, and in no class of flies is this more observed than in the case-winged or beetle tribes; and this confusion ceases to surprise us, when we find that beetles or *Coleoptera* comprise more than a third of British insects: for among many thousand species, it is hardly probable that different anglers should have in view the same, when they come to select a type for imitation. Neither is it desirable they should: for different localities give different insects. When we add that the males often differ from the females, a still greater latitude must be allowed. The angling imitations, then, like the one at the head of this paragraph, must be considered as standing for several species, out of which one may sometimes be selected as common and widely dispersed: but Nature is a wide field, and has many more insects than science has names for, or has yet described. When therefore the angler's names differ, it is frequently from the abundance of species he has to select out of: and this especially in the *Coleoptera*. While one angler, with Bainbridge, imitates one of the *Coccinellidæ*, or lady-birds, of which Stephens enumerates 49 British species, another may take the *Melolonthidæ*, with Ronalds, and still have 12 species to choose from, out of which to fashion his Shorn-fly. And thus, much as imitations differ, the originals are still more inexhaustible in their variety; and the angler's ingenuity will still find abundant matter on which to employ itself. The imitation of various water-beetles has been humorously treated by Mr. Wheatley, in that excellent and original little work entitled *The Rod and Line*, published by the Messrs. Longman. He observes:—"If the fly-fisher will take the trouble to open the stomachs of trout, almost at every season, he will very often find part of their contents to consist of one or other of the beetle tribe: a lesson, I imagine, well worth the learning." And he complains with much reason that the only beetles in vogue with most anglers are the Peacock Fly and the Marlow Buzz. The description of his capture of an old wary trout with an imitation of the Froghopper must make every flyfisher *jealous*. How just, too, is his remark, that many of the so-called fancy flies have their prototypes in nature. The term fancy-fly is often vulgarly applied to all flies whose original is unknown to the angler. Much do we desire to see more common amongst us the observant practice of what he well calls the *naturalist angler*.

No. 34. *Black Caterpillar-fly* (*Bibio Marci*).



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FLIES FOR MAY.

Wings. — From a feather of a jay's or starling's wing. To lie like those of the house-fly.
Body. — Ostrich harl, dressed full.
Legs. — Very dark hackle. Hook, No. 7.

3814. *The black caterpillar-fly* also comes to us under a very questionable name; there is about this time a very dark phryganea, known among anglers by various names: there are varieties of beetles, and musca also, very dark in colour, which are found on the water during this month of the size specified. There is likewise the true hawthorn-fly, which we suppose is the one meant by Bowlker. This fly we have successfully imitated in the above manner, and with it we have killed fish. We have also in our collection both winged flies and hackles thus dressed (purchased of regular fly-venders), which, in cloudy days, have been well taken. Grayling will likewise rise to a hackle-fly of this kind, dressed with one, or at most two, laps of fine silver twist. It is said to succeed best on small waters, which we rather agree with, for we have killed many trout with it in the Colne, and both trout and grayling in the Dove; but have been less successful when using it either in the Wye or Severn. It is a good fly for trout in pools.

No. 35. *The Sand-fly* (*Phryganea*).

Wings. — The sandy coloured feather from the landrail's wing.
Body. — Sandy red fur of the hare's neck, with a very small quantity of orange coloured mohair, worked with the same coloured silk.
Legs. — A ginger hackle. Hook, No. 7.

3815. *The sand-fly* has been eulogised by Bainbridge, to whom we are indebted for our knowledge of it. He directs us, if it be dressed as a hackle, to use the feathers from under the throstle's wing which is nearest to the colour of the fly, We have, however, dressed it with a few fibres from a turkey's wing, which, though too coarse, yet afforded such an excellent colour, that we found a compensation in the change. We have also tried it with the red partridge feather; and we find that, provided all the feathers are of one hue, wings, body, and legs, the bird employed is not of consequence. The sheldrake (*Tadorna vulpanser*) yields a feather which we have used with much satisfaction for this purpose. We first met with the account of this fly in Bainbridge's excellent work, when fishing in the Colne at Iver; our success made us immediately adopt it, and we have continued to use it, with various modifications, ever since. This author says it is as alluring to grayling as to trout, and our fishings in the Dove bear testimony to this. We have taken grayling likewise with it in the Lug, near Hereford. It will kill throughout the angling months, but best, according to our experience, towards the middle hours of the day. Cotton has also a sand-fly, but it is evidently distinct from this: we should conjecture it to be a *Tipula* or *Phryganea*, which is found about shores among the sand and gravel.

No. 36. *The Bluebottle-fly* (*Sarcophaga striata, &c.*).

Wings of the snipe, starling, or any small bird of the colour, to represent two transparent wings. To lie flat, but slightly pointed outwards.
Body. — Stone blue floss silk, tipped with gold. Head, bronze peacock's harl.
Legs. — A very fine black hackle. Hook, No. 7 or 8.

3816. *The bluebottle-fly is called an April fly,* and we do not deny that it may be met with at that time, and even in March; but its numbers are comparatively few, unless the weather be very propitious to its appearance. In May it is more frequently seen, and will, in warm evenings, and during warm breezes on a cloudy day, kill trout and grayling. Dace and chub, but particularly the former, will take it greedily whenever offered, except in the middle of a very bright day.

No. 37. *The Wasp-fly* (*Allantus vespiformis, &c.*).

Wings. — Mottled mallard or light blue partridge hackle. To be dressed flat.
Body. — Orange coloured mohair, dubbed in very thin ribs, and alternated with black ostrich harl, very fine. Carry the orange dubbing upwards to form the head.
Legs. — A light brown red hackle: make two turns only. Hook, No. 7.

3817. *The wasp-fly* is an old selection of Walton and Cotton almost lost from our books, which, though not a certain killer, is frequently well received. It is one of the common fly tribe, and bears nothing of the wasp about it but the name. It is a good bait for a clearing water not over thick, in which we have been successful with it both with trout and grayling. In fly-fishing for chub, roach, and dace, it is a most excellent fly; but when we have purposely *dressed* it for chub, we have added gold twist to the ribbing: trout take it best without. It continues to be met with during all the summer months; and though it appears about the end of May, it is most frequent in June and July.

No. 38. *The Case-winged Orange-fly* (*Telephorus lividus*).

Upper wings. — Red partridge's tail feather.
Under wings. — Hen blackbird's feather, or any other dun transparent-looking feather.
Body. — Red brown mohair, &c. &c. dressed long.
Legs. — Two-turns of a small red hackle. Hook, No. 7.

3818. *The case winged orange-fly,* called by Bainbridge the red spinner, by others the fern fly, is made with a starling's feather and a red hackle for wings, and with seal's fur or hog's down, dyed red, and mixed with brown mohair for the body. We have stated as our opinion of many of the case-winged flies, that they are far from killing baits, to use the angler's language; but the red spinner is certainly an exception, particularly in hot summer weather. It appears in May, remains with us till the end of August, and is an all-day fly. It is of more consequence for angling in countries subjected to heavy floods than in waters less subjected to these changes; for in the former the disturbed volume of water sweeps away myriads of aquatic insects, and leaves the fish more ready to take those furnished from hedges, trees, and meadows. It is thus probably that this fly proves so excellent when the water is clearing after a flood, its bright hue showing well through the turbid stream.

SUBSECT. 4. *The Night-flies.*

3819. *Some anglers* are particularly partial to night fishing, and during the hot months evening fly-fishing is very pleasant, and very productive also; but to pursue it through the night is not to our taste, as it seems to savour too much of poaching, and can hardly be called fair play towards the fish. The natural history of the *Phalænæ* will show that there are very many of both sphinges and moths that must fall in the way of all the fly-taking fish; and the soft mucilaginous mass they present probably makes them delicious morsels for such fish. The usual angling lists furnish only three moths — the common large white moth or owlet, the common brown, and the cream coloured moth. To these is added in the practice of some anglers of Hertfordshire, Buckinghamshire, and Hampshire, a moth-like artificial representation, known in the former county as Harding's or the coachman's fly, from a stage-coach driver of that name who was an excellent fly-fisher, and introduced it there, probably from Hampshire, where it has been longer known.

No. 39. *The Mealy-white Moth* (*Liparis auriflua, &c.*).

Upper wings. — The dappled light feather of the mallard, or any very light clear coloured feather.

Under wings. — The soft mealy feather of a white owl, or, in default, any soft white feather.

Body — White rabbit's fur, or white ostrich harl, dressed full, and exhibiting a brown head.

Legs. — A white cock's hackle, carried two or three turns only behind the wings. Hook, No. 3, 4, or 5.

No. 40. *The Mealy-brown Moth* (*Odonestis potatoria, &c.*).

Upper wings. — The dappled feather of a mallard, dyed a reddish brown.

Under wings. — The soft feather of a brown owl, or a soft reddish feather or two from the landrail.

Body. — Any soft brown fur, as of the hare, brown hog's down, bear's fur, and the nearest the shade is to tan the better. To be dressed moderately full and long.

Legs. — A brown cock's hackle carried one turn beyond that of the preceding fly. Hook, No. 3, 4, or 5.

No. 41. *The Mealy-cream Moth* (*Phragmatobia lubricepeda, &c.*).

Upper wings. — The cream coloured feather of the grey owl.

Under wings. — The soft feathers of the same, but a shade lighter.

Body. — Any dubbing or fur of a cream colour.

Legs. — A ginger hackle wrapt three turns. Hook, No. 4, 5, or 6.

3820. We are not very favourable to night angling, regarding it as neither very healthy, nor sportsmanlike: however, it is said that if a gentle be added to the white moth, and a caddis to the brown, it will increase the chances of success: we have never tried this plan, but we think it extremely likely to prove a valuable auxiliary. The moth practice may be thus sketched: — as soon as the sun is down, for half an hour the white winged harl-fly, or coachman, No. 42., may be tried; for the next hour the moths, Nos. 39, 40, or 41., dressed on hooks No. 5 or 6., or sometimes even No. 7., where the trout run very small and the water is fine. After that time *night fishing* commences, and the heaviest trout are then taken, when of course hooks, No. 3, 4, or 5., are more appropriate, and occasionally No. 2. is not too large. In dark nights use none but the mealy white.

3821. "*The mealy white.* The wings, the soft mealy feathers of a white owl; the body, the white fur of a rabbit, with a soft downy white hackle. In making it take the feathers (for there must be two both alike, broadish at the points, and large enough to form a pair of full wings), and lap them in, as done in the stripped feather for the wings of other flies, and at the bottom fasten in the point of the hackle; then twisting the fin on the silk, make the body as thick as a very large straw, until near the wings; there lap it thicker, and bringing up the hackle thinly, lap it twice or thrice round at top, and divide the wings so as to have the whole of each feather for the separate wings, and finish as in other flies that have their wings divided." The hook should be No. 4.

3822. "*The mealy cream.* There are feathers on a yellow owl of a deep cream colour, of these make the wings; the body, of soft fur of the same colour, and a very pale yellow hackle. It is made on the same sized hook, and finished and fished with the same way as the former."

3823. "*The mealy brown.* The wings are the soft brown feathers of an owl; the body (which should be long, and of equal thickness with the two preceding flies), the fine lightish brown fur of a hare or rabbit, with a light brown bittern's hackle, twice round under the wings; it is finished and fished with in the same way as the two first, which are, however, considered the best. They are most killing in gloomy nights, after sultry days; and when angling in this manner, the line ought to be but a little longer than the rod. The fish may be heard to rise at the fly as in the daytime, and be felt when they take it. Another method, successfully used by a gentleman, is, to make the fly in imitation of the large moth or owl flies, which come abroad in evenings; he dressed his to six hairs, with light mottled large wings, sometimes double; the body of the whitish stuffing of an old saddle, or such dubbing as may be got in a tanner's yard, and over all a large white or yellow cock's hackle; the body of the fly was at least as thick as a goose quill, and rather more than an inch long, with a great rough head; the line used was a yard longer than the rod. After throwing it out to its full extent, he drew it back at several pulls, about a yard at a time, which made it swim as if alive: when a fish was heard to break the water, and the line was felt to stop, he generally struck, though great fish hook themselves by closing their mouths and turning their heads. When the night was not very dark, he had a link with a fly of the same size as the former, but a little darker; and when it was so clear that he could discern his line, he used one half the bigness, having a mottled wing, brown body, and a black hackle with red points."

No. 42. *The Evening White-winged Harl-fly, or The Coachman.*

FIRST METHOD.

Wings. — Of a white fowl's feather.

Body. — Peacock's harl, dressed full and short.

Legs. — A few turns of a red hackle, clipped short above. Hook, No. 5, 6, 7, or 8.

SECOND METHOD.

Wings. — Of a white fowl's feather.

Body. — Peacock's harl, dressed rather less full and rather longer.

Legs. — A full sized brown hackle, dressed over the whole. Hook, No. 5, 6, or 7.

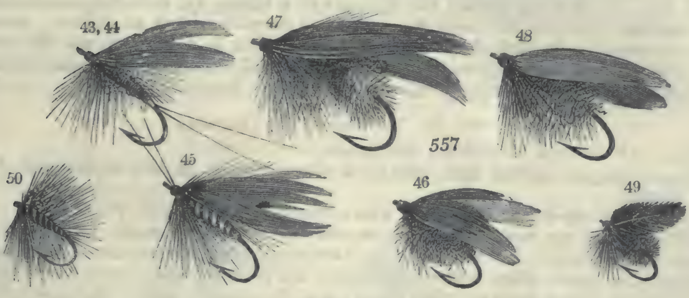
3824. *The evening white-winged harl-fly*, as before observed, is also known by the names Harding's, Watford Coachman, and the Hampshire fly. Unquestionably trout consider these artificial flies as representatives of some insect, which they are in the habit of taking, or this bait would not so very generally deceive them as it does; but we have failed to detect the original, nor are we aware that it has been discovered by any other angler. Throughout the summer months as an early evening fly, and until twilight, it proves most valuable in the midland counties and the bordering ones within eighty miles of the metropolis. On the Colne, and throughout its course, in the Hampshire, Dorsetshire, and Devonshire waters, where we have for many years been in the habit of using it, in our opinion there is no fly at all equal to it. We know it will kill in distant waters also, as the Severn, the Wye, the Usk, and Eden; but respecting these, as our experience on them has been usually that of a tourist, since fishing has been a favourite pursuit, we speak less decidedly. On the Tyne, where we continued to fish for a whole season, it was likewise a killing fly, but less so than in more southern waters. From this month till September we have found it no less successful as an evening fly; but we have not had reason to consider it equally so early in the morning, as might be expected from its moth-like character. As to the two different methods of dressing it, we believe that when the water is fine and low the first is the most killing, and that the smaller size is the best. In deeper waters, and where heavy fish have been sporting at the tail of a pool or the extreme of an eddy, we have used the latter method, when dressed on a No. 5 or 6. hook, with much success.

SUBSECT. 5. *Artificial Flies for June.*

3825. *The palmer-hackles*, and the moths of last month, Nos. 1. 4. 7. 19. to 28. inclusive, and 36. 39, 40, 41, 42. of the last months, throughout this. Nos. 29 and 30. last to the middle of this month.

No. 43, 44. Ephemeral red spinners.
45. Orl-fly.
No. 46. Hazle-fly.
47. Humble bee.
48. Large blow-fly.
No. 49. House-fly.
50. Blue gnat.

Nos. 43 and 44. *Ephemeral Red Spinners (Ephemeridæ).*



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FLIES FOR JUNE.

Wings.— Landrail's wing feather. To be dressed erect.

Body.— Brown red hog's down, ribbed with gold twist, and forked with fibres of mallard.

Legs. — A small fine red hackle carried three turns around the body. Hook, No. 7 or 8.

3826. *Of the red spinners* there are many species, which are all summer *Ephemeridæ;* they differ but very little in themselves, and prove excellent evening flies towards the end of this month and during July. Our books present us with spinners of opposite qualities; and we believe, that where the great red spinner and little red spinner occur in the accounts, the authors mean by the great red spinner the perfect *Imago* of the March Brown, and by the smaller is meant a dun; but where one only of these is mentioned, it is more difficult to decipher which is intended. These descriptions have been so often copied from each other, that it is probable the authors themselves are not always sure of their own meaning.

3827. *Taylor's method of dressing the red spinner* is applicable to the second of them; but we think for quiet waters the first is to be preferred. In disturbed waters and cloudy weather, we would recommend the second, which Taylor dresses as follows: —" The wings are of the greyish feather of a drake tinged with a kind of reddish yellow, which is not to be found on every drake; the body, gold twist, with a red hackle over it. In making it, whip in the ends of the twist and hackle together at bottom, and lap your silk back again up to the feather for the wings; then take the twist, and lap it close all the way up as high as the silk, and fasten it, cutting away what remains of the twist; with the hackle rib it neatly until you come up to the wings, and there lap it twice or thrice round; then fasten, and, dividing the wings, finish the fly. This is chiefly an evening fly in the month of July only, and is best used as a dropper. It is taken very eagerly by the chub."

No. 45. *The Orl-fly* (*Sialis lutarius*).

Wings. — A brown hen or a landrail's ruddy feather. To be dressed long and close to the back.

Body. — Ribbed alternately with dark brown and claret dubbing, adding two antennæ, or horns.

Legs. — A sooty black hackle. Hook, No. 6 or 7.

3828. *The Orl* is a handsome looking fly when well dressed, and will kill from the beginning of June till the end of July, there being successional supplies from caddies of this species. It is, however, only an occasional killer; but when it is taken it may be used at all hours. We have found it on some waters a favourite; but on others, trout would not even rise to it. It is too large and showy to be used when the water is low, but we have employed it with advantage when it has been clearing after a flood. We have seldom stirred a grayling with it; but the salmon trout will often take it, particularly if dressed on a No. 4. hook. It is also called the Alder-fly.

No. 46. *The Hazle-fly, or Ladybird* (*Coccinellidæ*).

The Elytra. — A small stumpy portion of the red feather of a partridge's tail, or hen's wing. To be dressed as shown in Wheatley's *Rod and Line*, p. 76.

Under wing. — Transparent looking feather of a hen blackbird, rather longer than the former, or a dark dun hackle.

Body. — Dubbed thick and round with dark purple mohair and a small quantity of brown fur intermixed, which when picked out form the legs. Hook, No. 7 or 8.

3829. *The hazle or ladybird-fly*, known also as the Welshman's button, and by some called a buzz-fly, may likewise be dressed as a hackle-fly by making a short thick body of peacock's harl, with a very fine bluish hackle dressed round two-thirds of it, and a bright red hackle dressed full in front of this. This method is very well received by trout, and particularly so by grayling, when they are in the humour to take these hard winged flies. The original appears in this, and lasts through the two next months: it is taken through the day; but though it has gained the character of a killing fly, it is only occasionally that it proves so. Like all the beetle flies, it forms a stumbling-block to anglers. Bainbridge does not consider the hazle-fly as the cow-lady; neither is it, he says, the Marlow-buzz. On a reference to the "Flyfisher's Entomology," it will be seen that these discrepancies can be reconciled. Mr. Wheatley's beetles are novelties. See above.

No. 47. *The Humble Bee* (*Bombus*).

Wings. — Of the cock blackbird. To lie flat.

Body. — Fore part dubbed thick with black glossy mohair, or fur; hinder part of a deep orange.

Legs. — Dress two-thirds of the body with a brown hackle. Hook, No. 3 or 4.

3830. *This proves during the summer months* a killing bait for chub: for trout it is more uncertain; but that it will take them, we have had many opportunities of witnessing. In deep pools, or under alders, willows, &c. where old roots and water worn banks have occasioned gentle eddies, chub are often found; and they usually occupy the more quiet parts of such situations where also trout frequently lie in ambush, not however in the direct still water, but a little removed in the line of the curling stream; and it is no uncommon circumstance for the angler when intending the capture of a chub, to raise a trout by means of this fly instead. It is therefore always well to be prepared with some varieties of this humble bee, but dressed on a No. 5. hook, as our southern trouts' mouths, thanks to poachers! are not often capacious enough to take in one dressed two or three sizes larger. This bee may likewise be represented by a hackle-fly dressing, and we have frequently seen it with its body dubbed as directed; and the dark red striped cock's hackle dressed over the whole palmer-like. It will kill trout very late in the evening of a hot summer day in sheltered deeps, and is perhaps then no less likely to prove successful as a trout fly than most others, particularly if it be ribbed with some very fine gold twist.

No. 48. *The large Blow or Flesh-fly* (*Musca carnaria, &c.*).

Wings. — A starling's or snipe's feather. To be dressed flat.

Body. — Dubbed with black bear's fur, and a very small portion of glossy purple mohair with it, and tied with light brown silk. Dress the body full, and pick out the dubbing to make it look rough. Head large, of brown silk.

Legs. — A very dark brown or black hackle, dressed two turns only behind the wings. Hook, No. 5 or 6.

3831. *There are others of the muscidæ*, still larger than the *carnaria*, as *striata*, *vomitoria*, *&c.* The wings of our large fly are tipped with orange at the base, and it may be imitated by a black harl for its body; the wings of a hen blackbird's feather, with a bright ginger hackle wound around nearly the whole of the body to serve for legs, as well as to add to the fulness of the body. Hook, No. 4 or 5.

No. 49. *The House-fly* (*Musca domestica*).

Body. — Black ostrich harl, dressed moderately thick and full.

Wings. — A lark's wing-feather. To lie flat and extended.

Legs. — A dark dun hackle. No. 9 or 10. Some have recommended a feather hacklewise from a starling dressed with brown silk, the legs and wings both formed of the same.

3832. *The house flies and the flesh-flies* every angler knows will kill coarse fish, and there are times when even trout and grayling, in the absence of aquatic insects, will readily take them. Even when the former are on the water, they will sometimes by a sort of capriciousness of appetite rise for these in preference to the usual favourites. This is particularly the case at all hours throughout gloomy days, and in the evenings after bright ones. Later in the evening in deep water the larger of these flies will often prove successful, while the smaller will kill when the water is fine and low; in cold blustering weather these varieties will often succeed also. For chub they are very killing, and to the amateur whipper for dace they offer by far the most tempting bait we know of, particularly for those numbered 36 and 48. Roach are likewise enticed by them, and in autumn, if to the tail of one be added a small gentle, the temptation to the roach proves irresistible.

No. 50. *The Blue Gnat* (*Culex pipiens*).

Body. — Bluish dun mohair, with a small dash of orange coloured floss silk mixed with it; or otherwise use all dun dubbing and whipped with orange silk.

Wings and *legs.* — Formed by dressing over the whole a minute dun hackle. Hook, No. 10.

3833. *The blue gnat* will be well received by both trout and grayling towards the latter end of this month, when the water is very fine and low. In the summer tours of the angler, if he be not a dresser himself, he should never go without these — the black gnat, the blue-blow, and the small house-fly, as he may expect summer droughts in the waters he visits. In August and September the blue gnat is more acceptable to grayling than it is to trout.

3834. *The midge* (*Culex pulicaris*) is a small variety of gnat, and if a dressed bait of the kind be attempted, it should be done with darker materials, and on a hook, No. 11 or 12., when it will prove an excellent killer, particularly of the grayling of the Wye and Lug.

Subsect. 6. *Artificial Flies for July.*

3835. *All the palmer-hackles of last month* are proper for this also: the same may be said of moths likewise. The flies, Nos. 1. 4. 7. 19, 20. continue throughout; Nos. 26, 27, 28, 29. to the middle of the month only. The June flies, Nos. 35, 36. 38. 43, 44. 47, 48, 49, 50. continue through the whole of it. Towards the end of the month the general hue of the duns begins to exhibit somewhat of a change.

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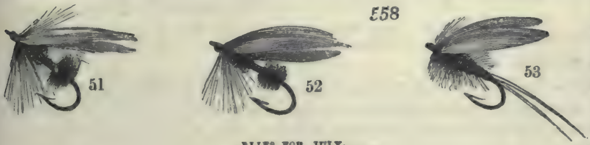

FLIES FOR JULY.

No. 51. Large black ant-fly. No. 52. Large red ant-fly. No. 53. Blue-blow.

No. 51. *Large Black Ant-fly* (*Formica fuliginosa*).

Wings. — A clear sky-blue feather from the seagull, pigeon, or tom-tit's tail, with a very fine glossy fibre.

Body. — Black ostrich harl, dressed thick at the thorax or chest, then very thin, and again thick behind (*fig.* 558.).

Legs. — A deep brown hackle carried round two turns only, close to the wings. Hook, No. 7 or 8.

No. 52. *Large Red Ant-fly* (*Myrmica rubra*).

Wings. — A starling's or snipe's wing.

Body. — Copper coloured peacock's harl, dressed as the preceding.

Legs. — A ginger hackle of two turns only behind the wings. Hook, No. 7 or 8.

3836. *The large ant-flies* are said to appear about the latter end of June, yet they certainly are not worthy of notice until towards the second week of July in most seasons, and sometimes even later than this. Very hot early summers may hasten their evolution, and we have observed them even before the earliest time ordinarily mentioned for their appearance: but the more general time, gained from near twenty years' observation, is that which we have given above. In very warm weather, particularly when it is gloomy without electric clouds, ant-flies are most killing baits during the principal part of the day; but they cannot be said to be good baits either for morning or evening. The originals are not aquatic insects, but they are so generally distributed about, and so helpless on the wing, that they are constantly falling into the water by accident; and as this is as likely to happen on both still and stream, so to that is attributable their valuable property as baits of killing on either. In the entomology of angling, the natural history of this interesting race of insects is sketched.

No. 53. *The Blue-blow.*

Wings. — Any small fine-fibred blue feather, as of the tom-tit's tail; a wing feather of a Merlin hawk, &c. To stand erect.

Body. — Blue water rat's or mole's fur: the *legs* a fine light blue hackle, with two fine hairs for a fork. Hook, No. 10, 11, or 12.

3837. *The blue-blow,* in the original, is so small that it requires to be dressed extremely fine. On the water it looks like a black morsel of wool, or, as has been observed, like a lump of soot. Minuter inspection will find it animated and floating down the stream, with its tiny wings erect, and intent on continuing its existence by proxy, or, in other words, employed in depositing its eggs on the liquid surface. It is first met with in July, but not in very great quantities; by degrees, however, the numbers augment until the water is covered with them, towards noon, during the hot days of August. When the water is so fine and low that hardly any other deception can tempt the wary trout, the blue-blow will succeed if used alone; at other times it is best employed as a dropper.

Subsect. 7. *Artificial Flies for August.*

3838. *The palmer-hackles* are still effective throughout the whole of this month. The moths also will yet be found killing in the evenings of warm days; but towards the end of the month they can seldom be used for night-long fishing, unless the weather be unusually mild. The earth is now parting with its heat, and its chilly inhabitants retire to recesses. The duns of the last month are all of them partially taken during this; but it is to be observed, that towards the latter part of it the lighter varieties (with the exception of the spinners) give place to others of deeper tones of brown and blue, which increase in their intensity as the season advances, much in the same manner as their various shades lighten progressively during the summer. The flies, Nos. 1. 4. 7. 19. 35, 36. 38. 43, 44. 46. 48, 49, 50. may likewise be used throughout; some with the usual success, and others with a limited prospect of it at this advanced season. The large ant-flies, Nos. 51 and 52. are sometimes continued through the first week of this month. The blue-blow, No. 53. is an important bait in the early and middle parts of the month, or as long as it continues sultry.

No. 16. Orange bodied dun.
7. Blue dun.
43, 44. Ephemeral red spinners.
No. 28. Little whirling dun.
54. Little black ant.
No. 55. Little red ant.
15. Red dun.

3839. No. 16. *The orange bodied dun.* Our former remarks on the aquatics, particularly of the ephemeræ, have pointed out the autumnal succession of a new race, which in appearance and habits so nearly resemble those of the early months, that the artificial representatives formed on the same principles are readily taken by the trout. These later ephemeræ are singularly effective in capturing grayling, for which they are most killing baits. The orange bodied dun of this month is a sort of herald to the approaching autumnal season, and appears about the beginning of it, alternating with the others for a few weeks. It is, like its congener, a midday fly.

3840. No. 7. *The blue dun of this month* (p. 1149.) is essentially the same as that of the last, and is most effective when dressed of different shades of colour; by which means, whatever variety appears on the water, may be successfully represented, and will kill all day. This is a most excellent grayling fly, and varieties of it are met with in fine seasons until November, as may be seen under grayling fishing.

3841. Nos. 43 and 44. *The ephemeral red spinners* are both valuable flies during the hot mornings and evenings of bright days in August, and throughout the whole day in gloomy weather: they are also killing flies for grayling.

3842. No. 28. *The little whirling dun* (p. 1160.) of August is the whirling blue of Bowlker, and the representative of the whirling dun of June. It is indeed probable that there is a scanty supply of them during the whole of July, and of the beginning of this month also, but about the middle it appears again in considerable numbers, so as to merit the character of an August fly, when it proves, like the former whirling dun, a good killer in brisk breezes, and in such weather as will not allow some of the more tender duns to come on the water. It is equally taken by both trout and grayling.

No. 54. *The little Black Ant* (*Formica fusca*).

Wings. — Any fine fibred feather of a dun tinge.
Body. — A little black harl, dressed with the projecting parts like No. 51.
Legs. — In the finishing of the body wrap one turn of a black cock's hackle under the wings, or otherwise introduce a small piece of dark fur, which, when picked out, will furnish the legs. Hook, No. 9 or 10.

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FLIES FOR AUGUST.

No. 55. *The little Red Ant* (*Formica flava*).

Wings. — Part of any small warm tinted feather of the landrail.
Body. — Any warm red fur or mohair, or bright brown peacock harl, dressed to represent the large red ant in appearance.
Legs. — If the body be of harl, add a few turns of a small red hackle. If of fur or mohair, minute hairs from it may be picked out for the legs. Hook, No. 9 or 10.

3843. *The lesser ant-flies*, as the entomology of angling will show, are the females of the busy ants, whose protuberant bodies bear about them the supplies for future generations. They appear towards the middle of the month, and, like the larger species, are killing in the daytime to both trout and grayling throughout August and great part of September.

3844. No. 15. *The red dun* (p. 1155.) of April is represented in a new series in August, with little or no difference in size or colour. The active and observant fly-dresser will be always on the look-out to watch the changes in the shade of the successional supplies, which vary every few days by certain but by imperceptible degrees. These changes must either be met by a large supply of varieties, or they must be provided for on the spot by the nimble fingers of the artist; for however ample our list, and however full our directions, unless the nice shades of alteration in the living flies, corresponding with the growing or declining season, be watched by the angler himself, and provided for by similar alterations in his representatives, they will be of little use. The red dun of August continues through this month and the next: it is also, in some seasons and some waters, to be met with in October, and then is a very killing grayling fly. In our opinion, the zealous angler is more likely to become the subject of mortification in October than in any other month, if grayling be excepted. We were once localised in Wales during this month, and principally to enjoy the fishing which that autumn afforded. Two or three cold days prevented the trout race from showing any sport, and the local anglers, one and all, averred there would be no more sport that year. We therefore returned to England for cock shooting, which did not turn out so favourable as we expected; and what made our ill luck doubly mortifying was, the accounts which we continued to receive of the sport which each individual of the party met with. Unless you are actually glutted with sport, therefore, never leave even in autumn for the mishap of two or three blank days.

Subsect. 8. *Artificial Flies for September.*

3845. *The palmer-hackles may still be successfully tried*, and indeed they will be taken as long as the insects they represent are to be found on the trees and hedges. Nos. 1. 4. 15, 16. 36. 47, 48, 49, and 50. are yet in occasional request by fly-taking fish; but the autumn succession of the duns, similar to those of the early spring months, are now most to be depended on, particularly for grayling. This month draws off the attention of many a fly-fisher to partridge shooting, and although we are enthusiastically fond of fly-fishing, we cannot wonder at it, when we consider that salmon and trout fishing are now lamentably on the wane. Some sport may yet be obtained, however, in favourable seasons through the whole of the month, and for grayling it is yet excellent. The orange bodied dun will be taken in bright days for a week, and occasionally a little longer; and the little whirling dun may be seen in limited numbers until the middle of the month.

No. 7. Golden dun.
5. Dark dun.
3. Alder or red fly.
No. 56. Late dark bodied willow-fly.
No 57. Cinnamon-fly, or fetid brown.

3846. *The golden or blue dun* still appears in fresh supplies, which seem to ramify into varieties in September. One of these is of a more intense violet dun, and the other of a paler hue. This last is eagerly taken by grayling, when the weather is very open, in which case this fly is sometimes continued to the third week; if otherwise, seldom beyond the second, and on many waters not even so long. It is, however, succeeded by another variety of a still duller hue, which is to be met with in October, in very open seasons in November also, and which is well taken by grayling.

3847. No. 5. *The dark dun of September* is to be dressed in the same manner with the fly so called of March. It is likewise to be fished with at the same times, and is in other respects similar.

No. 56. *The late Dark bodied Willow-fly.*

3848. *This fly* is in appearance the same with the early dark-bodied willow-fly of March. It is to be dressed after a similar manner, and is taken in this and the next month under the same circumstances with that. This fly forms the chief dependence of the grayling angler on some waters, for this and the next month; such trout also as are on the feed prove that they are not yet tired of it.

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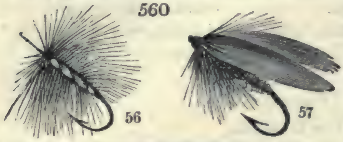

FLIES FOR SEPTEMBER.

3849. No. 3. *The Early Red-fly* of the spring months appears again, or at least there is a later species of it, which comes on in September and October. The artificial fly differs little or nothing in size, dressing, or mode of using, from that which is described in the March list. This forms now the sheet anchor of the grayling angler's hopes; and we have taken these fish with it as late as the first week in November in the western counties.

No. 57. *Cinnamon-fly, or Fetid light-brown* (*Phryganeidæ*).

Wings. — Of a ruddy cream colour, from a feather of the landrail, or of the woodcock's wing-feather. To be dressed long, large, and flat.
Body. — Cinnamon brown mohair.
Legs. — A red brown hackle. Hook, No. 6.

3850. *This fly, called the cinnamon* from its colour, and fetid brown from both its colour and smell (which is strong and unpleasant when pressed between the fingers), is of the nature of the stone-fly, being bred from a caddis. It is rather an uncertain fly; but when it is found in great numbers, it proves occasionally very killing to trout, especially in the forenoon. Of the natural history of this fly, Mr. Daniel says, — "The ruff-coat is a caddis inclosed in a husk about an inch long, surrounded by bits of stone, &c. almost equal in their size, and curiously compacted together like *mosaic*. From one of these insects found in the river Wandle in Surrey, and put into a small box with sand, and wetted frequently for two days, at the expiration of that time a large fly was produced, smaller than a common white butterfly, but somewhat resembling it in shape, with two pair of cloak wings, and of a light cinnamon colour." The author of *Salmonia* also alludes to this fly, and to No. 56., or the late dark bodied willow-fly, when enumerating a few of the principal flies which are found on the Colne. He observes, "There are two other flies which appear in the end of September, and continue during October if the weather be mild; a large yellow fly, with a fleshy body and wings like a moth; and a small fly with four wings, with a dark or claret coloured body, which, when it falls on the water, has its wings like the great yellow fly, flat on its back."

3851. *With September* we close our monthly list of flies. The races of winged insects which now appear are fewer, less varied; and most of the fly-taking fish, following the course of Nature, retire to deep waters, and seek other food. With trout, the chances of sport lessen every day; with salmon it is the same; and were it not that grayling are yet inclined to take the autumn duns, a blank almost would present itself to the fly-fisher.

3852. *October fly-fishing* is in this month likely to be even less productive than in the last. The ardent lover of the sport, however, will probably try; and he may perchance occasionally, for a few hours in a bright day, or in a warm gloomy one, by means of those flies which made their appearance in September, raise trout. Both varieties of the blue dun are yet to be seen on the water; these, the dark dun and the late dark bodied willow-fly, with the alder or red, may be all considered as proper flies for this season. The cowdung has not yet wholly disappeared, and therefore its representative may still be used on a blustering day, as well as the gnats for a bright one. Grayling form now the principal ground of hope for sport, and they fortunately continue to be successfully tempted in this month by the whirling blue duns in fine weather; when it is otherwise, the under water fishing suits them best, with gentles for the bait.

3853. *November fly-fishing* will afford exercise, and seldom much beyond it as regards trout, which are now getting completely out of season, and have retired to the deeps. Grayling are however yet to be occasionally taken, as some winged insects, particularly late duns and spider-flies, are still on the water, though it is probable that a hook with a pair of wings and a gentle at the point will more certainly tempt them, particularly if sunk four or five inches below the surface. A few gnats also, and other small flies, still hover about the edges and over the streams, and with representations of these sometimes amusement may be gained in fine mild days without strong night frosts.

3854. *December fly-fishing* is what we know little of. We can hardly venture even to counsel the trial, and certainly we shall not accompany the tyro at this season. We have heard of whipping with gnats and other small dark minute flies, and, as an amusement, the water may as well be flogged as the boy's top; but we expect the gain (which is exercise) is usually the same in the one case as in the other. Fish however, like ourselves, are liable to fits of caprice, and will sometimes defy all rule: even a December day may therefore yield an *unexpected* prize: it may also yield, what might be *expected*, rheumatism. We would therefore recommend this month's fishing to be accompanied with a mailing of flannel next the skin — and with this warning we conclude our season.

SECT. II. *Artificial Flies used in Salmon Fishing.*

3855. *On the subject of artificial flies for the taking of salmon.* If we were to say, that in this place we had any thing very novel to offer, we should be guilty of angling quackery; for although we have dressed many salmon flies, yet we never did it on any particular principle except custom or local usage, because we think these fish are influenced by caprice or a love of play as much as by any choice in the nature of their insect food. They certainly rise to the artificial bee, wasp, tenthredines, &c.; but they do it just as readily, and even more so, to a jumble of gaudy feathers representing every thing and nothing. We shall therefore select from different writers, either such flies as they themselves particularly recommend, or such as we can recommend from having successfully used them; and elsewhere we shall offer some engravings of the most killing salmon flies now used by our most successful salmon anglers.

SUBSECT. 1. *Salmon Flies of Bainbridge.*

3856. *The flies which follow* are principally derived from the directions of accredited northern salmon fishers, collected either from their writings, or gained by their personal communications, as we met with them in our travels. Whenever we have been fortunate enough to make a favourable addition to one of usual repute, or have actually invented a successful one, we have, as may be supposed, noted it. Although we have taken salmon in England, Wales, Scotland, and Ireland, yet we are too well aware of our comparative inefficiency to treat of them as we wish. Large salmon flies should be dressed upon two or three lengths of gut twisted together; and it is necessary that the silk in dressing should be brought beyond the shank of the hook, and wrapped four or five times round the gut, so that the sharpness of the steel may not easily cut it. In dressing the gaudy flies for salmon, the maker may freely exercise his fancy, for it is impossible for him to be too extravagant. The only caution necessary to be given is, that he should avoid introducing too great a weight of gold or silver wire, which will prevent the fly from being thrown neatly, and will cause it to sink too much under the water. For the same reason beads, which are sometimes used to represent the prominent eyes of the dragon-fly, are reprehensible.

3857. No. 1. *is a spring fly of Bainbridge.* Its *wings* are made of a dark brown mottled turkey feather: the *body* of orange camlet and mohair, with a bright brown cock's long fibred hackle for legs. Hook, No. 2 or 3. As the season advances, it is recommended to add a little tinsel or wire to the body to render it more showy.

3858. No. 2. *is called a quaker fly* from its sober colours, and is dressed of any copper or dirty yellow feather proper for *wings*, with lemon coloured mohair, and a little brown fur or camlet for a *body*: a dusky ginger hackle over the whole will furnish legs. Hook, No. 3.

3859. No. 3. *Wings* from the cormorant, or mottled feather of the mallard, with a *body* of dark sable ribbed with gold wire, and forked with two dark fibres and a small yellow patch of floss silk at their setting on: wind around the whole a dusky red hackle for legs.

3860. No. 4. *is a gaudy fly*, having the wings formed from the extreme end of the feather of a guineafowl, which should not be stripped but left entire: a blood red hackle from the dyed feathers used in the wings should be so placed as to show itself beyond the guineafowl's feather: dub the body with red harl, and over it wrap a bright yellow hackle: the head may be made of the green feather which forms the eye of the ostrich's tail, and a few fibres of the same may be added as tail whisks.

SUBSECT. 2. *Salmon Flies from Salmonia.*

3861. No. 5. *A jay's hackle*, a kingfisher's feather under the wing, and a portion of the golden pheasant's tail feather for the body: for wings, the eye part of the Argus pheasant's tail.

3862. No. 6. *A bright Java dove's hackle*, blue feather of a kingfisher, and the red feathers of a parroquet for a body, with the golden pheasant's feathers for wings.

Subsect. 3. *Salmon Flies of Taylor.*

3863. No. 7. *The salmon flies of the spring season* must be made much larger, and more gaudy, than those used in summer: use the hook No. 1.: the feathers for the wings, the darkish brown speckled part of a bittern's wing stripped off from the stem: the mixture for the body, the reddish brown part of hare's fur and deep copper coloured mohair: the tail forked with two single strips of the same feather as the wings: a bittern's hackle over the body for legs; and the head the same colour as the body.

3864. No. 8. *Let the hook be of the same size as the former:* the wings, the mottled feather of a peacock's wing intermixed with that of any fine plain dusky red: the mixture for the body, the light brown hair or fur of a bear next the skin, sable fur, and gold coloured mohair, gold twist, a large black cock's hackle, and a red one a little larger; and for the head, a bit of deep red mohair.

3865. No. 9. *For this fly use a hook,* No. 1.: the wings, the blue feather of a heron intermixed with the spotted reddish part of that of a mallard: for the body, lead coloured mohair, small gold twist, a large white hackle dyed a deepish blue: a bit of the same feather as the wings for the tail: the head the same colour as the body; and your silk a lead colour.

Subsect. 4. *Salmon Flies of Captain Williamson.*

3866. No. 10. *Wings.* — Of the reddish brown feather on the turkey-cock's wing, cut from the stem.
Body. — Straw or auburn coloured mohair, yellow silk. Hook, No. 2 or 3.
Legs. — A grizzle, or ginger hackle, from a game-cock.

3867. No. 11. *Wings.* — From a grey gander's broad rump feather, cut from the stem.
Body. — Grey or light brown mohair, light brown silk. Hook, No. 1 or 2.
Legs. — A dirty grizzled hackle from a game-cock, or a bittern's hackle.

3868. No. 12. *Wings.* — The rich brown part of a heron's wing cut off from the stem, or the speckled feather from a peacock's wing, or that from a guinea-fowl's back.
Body. — Drab coloured or olive coloured mohair, pale olive silk. Hook, No. 3 or 4.
Legs. — A small bittern's hackle, lapped only near the wings; forked tail.

3869. No. 13. *Wings.* — From the eye of a peacock's tail, cut from the stem.
Body. — Deep green mohair, light green silk. Hook, No. 2 or 3.
Legs. — A white cock's hackle dyed pale dirty green, or jay's striped blue and white.

3870. No. 14. *Wings.* — A rich dark brown speckled feather from a bittern's wing.
Body. — Coffee coloured mohair or the fur from a hare, coffee coloured silk. Hook, No. 1.
Legs. — A bittern's hackle, or a ginger game-cock's; tail forked.

3871. No. 15. *Wings.* — The greenish dark shining feather from a drake's wing cut off.
Body. — Bottle coloured mohair, silk deep chocolate. Hook, No. 3.
Legs. — A black cock's hackle, or a deep coloured one; tail forked.

3872. *These are all killing flies,* as we are informed by the author, who instances Nos. 10, 11. 14. as in common use in the Highlands of Scotland. The others he considers as more appropriate to warmer waters. To these we shall add two fancy flies of our own recommendation.

3873. No. 16. *The jay.* Dub with green ostrich harl, and rib with gold twist, adding a head of scarlet. Use the barred blue feathers of the jay for wings, and wrap a hackle of bright orange colour over the upper half of the body.

3874. No. 17. *The peacock.* Dub with orange mohair, and rib with silver, adding two green strands of a peacock's eye feather for tail whisks. For wings add two eyes of a small tail feather, or the topping feather of the peacock: for legs, wrap two turns of a dark hackle under the wings. Hook, No. 1.

Subsect. 5. *Salmon Flies of Mr. Lascelles.*

3875. *The Rev. R. Lascelles* was a gentleman known to us as a proficient in fly-making, and a travelled angler, both in the northern and southern districts; but we believe that Wales was the scene of most of his piscatory wanderings. He observes in his *Letters on Sporting,* that all the salmon flies of North Wales, except the wasp and hornet, should be made to imitate dragon-flies, being the only large ones that are seen playing about the rivers there. " Their bodies should be long and slender, made of floss silk, of blue, black, claret, and in short of various colours, some ribbed with black, and all with gold or silver plated *wire* not *twist,* for this is not sufficiently predominant in the water. As these flies have very long bodies, it is frequently better to extend the silk to the upper part of the hook, to make them appear longer than it would otherwise admit. The wings of all should not have too much feather in them, and those of most of them should be of various colours; as, for instance, a few fibres of the most close and fine feathers of the cock pheasant's tail, a little blue, purple, yellow, or gaudy colours of foreign birds, and some fibres of the grey feathers of a mallard. In order that the wings may lie flat on the back of the fly, when drawn through the water, you should not, in the making, extend them too far apart. The hackles for the legs should be black, red, or dun, or those that are red and black at the root; but the preference is generally given to the feathers from the saddle of the cock, because the fibres are stiffer and the feather longer, which will enable you to make the body to any fulness you may desire.

3876. " *At the latter end of the season*, when salmon make up the rivers for spawning, the wasp or hornet is a capital fly. The wings are made from the fine fibres of the cock pheasant's tail (I mention the word *fine*, because some of them are so wiry that they will not tie well together); the body of yellow worsted, dyed fine wool, or floss silk, ribbed with black and made full and a large red cock's hackle or saddle feather, black at the roots, wrapped several times under the butt of the wings, for legs. This is the method of making salmon flies in North Wales; but as the Dee is the favourite river in that part of the country, and as it has a fine gravelly bed, probably the method is adapted for that river alone.

3877. " *In South Wales*, on the Wye, they chiefly use the bittern's hackle for wings, which consist of four, those near the head being somewhat longer and placed at a very small distance from the others; the bodies, which are forked with four dark fibres of a mallard's feather, are of fine wool, dyed various colours, and mixed to please the fancy; the legs always of the dun cock's saddle feather in the early part of the season: but towards the latter end they wing with the feather of a fork, or salmon tailed kite, and the dark mottled red feather of a turkey, the body yellow, and a ginger saddle feather for legs.

3878. " *In Scotland is used a fly called the tartan*, which is made, the wings of the dark speckled brown of a turkey's tail, mixed with twelve harls from the peacock's tail, six in each wing; the body, a mixture of every colour you can imagine, forked with the dark fibres of a mallard's feather, and a blood red cock's hackle over the whole: this is an extraordinary fly, and the body must be made with each colour separate, beginning with bright yellow and ending with black, neatly ribbed with gold twist, and the head of copper coloured mohair.

3879. " *A second fly* has the same feather for wings, only of a reddish cast; the body bright brown hair, or fur of a bear, mixed with gold coloured mohair, and ribbed with gold; and two hackles, a black and a red one, a little larger, for legs, and the head of deep red mohair.

3880. " *A third fly*, called the black dog, and the most killing of all, has its wings of a blue heron's feather, mixed with red turkey; the body of lead coloured mohair, ribbed with gold, and a large black cock's hackle or saddle feather for legs; the head, a little dark green mohair and green silk. These flies are all made on a hook (No. 1.), but decreasing in their full size regularly as they are placed. In making this last fly, take care to divide the wings with the gold twist, bringing it backwards and forwards three or four times betwixt them, and making it appear as much as possible about the head.

3881. " *A fourth fly* has its wings of the speckled feather of a kite or buzzard's wing; the body light blue hog's wool, and a little lead coloured mohair mixed, forked with four strips of the copper coloured feather of a mallard; a dark blue hackle for legs, and the head of the same colour.

3882. " *A fifth fly* has its wings of the mottled grey feather of a turkey's tail; the body, a copper coloured peacock's harl, and green plover's topping, ribbed with silver, forked with too long fibres of the tail feather of a cock pheasant; a dark grizzled hackle for legs, and made with dark red silk: these two flies are made on a hook (No. 2.).

3883. " *A sixth*, called the golden fly, has its wings made from the feathers of the golden pheasant, the common pheasant, the parrot, peacock's harl from the tail, the turkey's mottled feather from the tail, and two blue mottled feathers from the jay, one placed on each side of the wings, with the mottled part downwards; the other feathers should be mixed equally, forming altogether a moderate sized wing: the body should be made of green silk ribbed with gold, and a strong red cock's hackle, or saddle feather, for legs, with the head of green mohair.

3884. " *A seventh*, called the silver fly, is made in the same way, only ribbed with silver, and a dun hackle for the legs: these last are made on a hook (No. 3.), and are taken from the middle of June till the latter end of August in a fine clear water. After this period you must return to the former flies, which, by making a little variation in their size, will never fail affording you diversion."

3885. *Notwithstanding any confidence* in the effective killing properties of the salmon flies we have here enumerated, as well from our own experience as the acknowledged reputation of each author they are derived from, yet we shall, in treating of the methods of fishing practised in the different portions of the United Kingdom, under the head *Localities of Fishing*, p. 1191. be enabled to append thereto a more modern list of the effective flies now used by the best fly-fishers for the salmon and its varieties. These have been engraved from very accurately dressed flies by Mr. G. Bowness, jun., 33. Bell-yard, Temple-bar, of whose abilities, both as an angler and fly-dresser, we have already at p. 1129. had occasion to make mention, and from whom any of these flies, by notification of the number and the locality they are wanted for, can be had. The most popular of these flies will be figured in the various localities yet to be treated of. Those appropriate to England may be gained from the salmon flies already enumerated. A few of those appropriated to Wales will appear on two cuts, as will those of Scotland also. We shall give a list of the best general flies for all the principal rivers in Ireland.

CHAP. XII.

THE PRACTICAL PART OF FLY-FISHING.

3886. *The various implements employed in fly-fishing have already been described*, generally and individually. We have also treated circumstantially on the baits used, both natural and artificial. A reference to the index will direct the reader where to find almost every article, however minute, connected with the one or the other. At present we shall principally confine ourselves to a detail of the best methods of placing before the objects of our sport the several natural and artificial fly baits we have described. We have already recommended the use of the single-handed rod in fly-fishing (p. 965.), and we have given our reasons why we think this practice to be the most graceful, the most scientific, and, as we believe, the most successful also. A double-handed rod is, in our opinion, admissible only on some extraordinary occasions, where a more than usual length and strength of both rod and line may be peremptorily required. We admit that such occasions do occur, particularly in salmon fishing, where the extent of the water, and the probable size and strength of the fish, render these means indispensable. It may also happen that the trout-haunts can only be reached by a rod and line of unusual dimensions.

SECT. I. *The Practice of Throwing the Fly.*

3887. *We sometimes find this called whipping*, as well as throwing; but as regards the higher walks of the practice of fly-fishing, the term is a misnomer; for he who flogs the water will never catch any such fish as are the usual objects of the professed fly-fisher's pursuit. An artificial fly can only be exhibited to these quick-sighted and wary tribes by lightly and delicately placing or delivering it on the surface, which is effected by an action but little resembling that of a coach whip, from whence probably it derived its name. "He who throws his line back as a coachman does his whip, will, like him, make it crack when it gets to its full extent behind his back, losing many a good fly, and coming forward again with such violence as, instead of alluring, will scare the fish."

3888. *Whipping*, however, as being a term almost conventional for the minor fly anglings of bleak, dace, and other small fish, practised only by *whipsters* who *flog* the water abundantly, may be retained in our vocabulary without breach of piscatory propriety; but as here used, it can only express those minor fly-fishings: the exhibiting of the natural flies, likewise, is sometimes called whipping, but with little more propriety.

3889. *To throw a fly* with accuracy, and yet with such delicacy that it shall rather seem to alight than to be forced on the water, is acknowledged essentially necessary to constitute not only the accomplished, but also the successful, fly-fisher. The art of doing this is not altogether an easy one, and is only to be acquired by much attention and considerable practice. Few actions call forth more admiration than that of throwing a fly handsomely on the water; the attitudes in which it places the operator are manly and graceful in the extreme; and when it is considered that in the hands of a master, a line of great extent appended to a long rod is made to place a mimic insect at will on a spot a few inches in circumference which is many yards distant (and this any expert thrower can do), we are equally struck with the effect produced as with the dexterity exhibited.

3890. *The first lesson in fly-throwing* should be taken by the learner with a rod which he can manage in his hand with perfect ease, by holding it by such part as will give him an equal command of both ends. The exact spot at which this may be done will depend on the weight and resistance of the butt to the action and elasticity of the other joints; but in a justly proportioned rod, this point of counterpoise should fall somewhere between twelve and eighteen inches from the butt, and the reel should be placed just below it; which matters having before been dilated on (p. 965.), need not further occupy our attention here.

3891. *Throwing with either hand* is also essential to perfection in the art; it greatly lessens fatigue, and the change of hands is of consequence likewise under some circumstances of situation, and under some changes of the wind; as, for instance, when it blows from the right directly across the angler; in which case throwing with the left hand is the best means to be employed. Changing hands also prevents blisters from forming.

From the very commencement, this practice of using either hand should be adopted, and the throwing should be made alternately with each in equal degree, until either can be used with similar dexterity. This we cannot insist on too strongly, as being of much importance in the art. Long continued throwing with one hand always tires, and very often even strains the wrist; and it will be found that a slight wrist strain only will wholly incapacitate the angler from throwing for the remainder of the season. But he who can make use of either hand has the remedy before him; nay, he has what is better, he has the prevention; for the ambi-dexter seldom fatigues himself to this extent. A powerful arm, with a strong but pliant wrist, are great advantages in this art; for although dexterity is the principal requisite, the evolutions of the rod require the arm of an athlete to continue them through a full day's fishing.

3892. *The initiatory practice is now directed to the conducting of the line;* and this is properly commenced with a tapered one, very little if any more being drawn from the reel than the length of the rod, having at the end a full sized fly with its hook broken off at the bend to prevent its catching in the matters it passes over; for we should strongly recommend the practice to be first pursued on a newly mown grass plot, the thrower being elevated a little, as if on the banks of a stream, that he may command a more perfect view of his throw. It is not of material consequence whether there be wind or not in this stage of the practice, but it is important that what wind there may be should blow from behind. And as throwing with the wind is more easy than without, we should rather prefer the early lessons to be conducted in a perfect calm. Having placed some pieces of board, card, or tile, about six inches square, in various directions around him to the extent of his reach of line, it should be his endeavour in throwing to place his fly directly on these pieces alternately, doing all in his power to make his fly drop on them at once and as lightly as possible. When this has become an easy practice, lengthen the line a little from time to time, until an extent of many yards can be managed with ease; for he who can throw the longest line of course greatly increases his sphere of action and his chances of success, particularly when the action is accompanied by a quick sight and a ready hand for striking.

3893. *The practical directions* of Captain Williamson on throwing are so good, that we cannot, in justice both to him and the learner, omit making an extract or two from them. "Take hold," he says, "of the bend of the hook between the forefinger and thumb of your left hand, holding the rod in your right hand at its balance, that is to say, where you have a command over it, the same as you would over a well balanced whip. Let the rod point a little forward, straight before the left shoulder, the elbow being kept close to your ribs, but without the smallest constraint. First, turn your rod with a light graceful motion to the left (still the point a little lowered), and wave it back again in a similar manner, from the left to the right, carrying the point of it backward at the same time, and quitting your hold of the hook, which by this means will go far behind your back; but as your next turn of the rod is forward, and as the point is then considerably lowered, your line will double back and take a new direction, so that your fly will at length be carried completely before you, and give the lead to your line. I am induced to repeat that *the elbow must be kept down* until the line is getting before the rod; that it is then to be raised gradually, so as to throw forward the arm to its full length, the hand coming to a level with the shoulder; and that this motion must be completely accordant with the fall of the fly, so that it may never be checked, but only guided to its destination; for whenever a check takes place, the fly will descend suddenly, and cause more or less agitation on the surface. As you feel the line getting into its proper direction, carry forward your arm with an easy movement, until your hand is on a level with your shoulder. By this means, the little inclination the fly might have to tug, and consequently to be checked short when the line acquires its full extent, will be totally prevented, especially if you yield a trifle more by lowering your hand and arm *a little*, keeping them in a straight line up to the shoulder: this is the *double turn*. Thus you will cause your fly to light so very gently on the water, as often to leave you in doubt as to the precise spot where it fell, but which is frequently pointed out by the rising of a fish, deceived equally with yourself by the sleight you have attained."

3894. *Snapping off flies.* A difficulty which will take the learner longer to conquer than any other, is the repeated loss of his fly, particularly in a brisk wind, which is occasioned by the return of the line being attempted before it has been fully unfolded behind, when the sudden resistance offered by the hook, which has not yet reached its destination, ruptures the gut immediately where it unites with it. The force applied is exemplified by what occurs in using a long coach-whip: here the thong is thrown forward with great impetus, and before it has reached its full unfolding, the hand is purposely employed in checking it; when the hard twisted whipcord at the end, acting suddenly and violently on the air, produces the sharp cracking vibration so well known. The same is heard, but in a minor degree, with the fly; and we have here a full confirmation that the very excellence of the *whip throw*, is the very bane of the *fly throw*: Colonel Hawker observes on this with his usual acumen:—"Do not draw the fly too near, or you lose your purchase for sending it back, and therefore require an extra sweep in the air, before you can get it into play again.

If after sending it back, you make the counter-spring *a moment too soon*, you will *whip off your tail fly;* and if *a moment too late*, your *line will fall in a slovenly manner.* The knack of catching *this* time is, therefore, the whole art of throwing well."

3895. "*Another mode of throwing*," says Captain Williamson, "is with the *single turn*, and commences with the rod pointing to the left, the hook as before: first, bring the point of the rod gradually round to the right side, then making a sweep over the right shoulder, and casting forward, as in the *double turn:* this appears more easy than the *double turn*, but is not so, because it is far more difficult to make the fly light gently when the hand has so little preparation." This mode, and the former one described by Captain W., requires to be well practised to the right and to the left, with and against the wind; and with the wind on the right and left sides alternately: the learner will find many streams which, by their windings, will afford all the desired positions within a very short distance. We will now suppose the fly delivered or thrown so lightly on the surface of the water by the learner, as to raise no more disturbance in it than would be occasioned by the settling or dropping of a living fly. Having so done, it next follows, that he should begin to raise the point of his rod, by gradually dropping the elbow joint and elevating his hand, which will draw the fly on the water towards him. But this should not be done exactly in one uniform drawing; on the contrary, it must be a part of his lesson to learn to do it with a tremulous motion of the wrist, which, acting on the rod and line, will be imparted to the fly. These minute jerking motions of the fly bait will assist the angler's views in two or three ways: first, by representing the natural flutters of such insects as are blown on the water; it also puts the fish more on the alert to seize the bait, fearful that its apparent attempts to escape may snatch the morsel from them: when, on the contrary, a fly moves uniformly down the stream, the fish are often content to watch it, which is usually fatal to the angler's hopes, as during a regular progress they discover the deception, and refuse it.

3896. *Striking the fish* is to the full as important a part of the rod and line management as any. Many strike too slow, many too quick, and a correct few strike at the critical moment. The first lose their object, the second often lose both the object and their bait, while the third secure all. When a fish seizes the natural fly, his jaws find no resistance; he consequently keeps them closed until deglutition follows; and thus it is that in natural fly-fishing it is not found so necessary to be instantaneous in striking: but with the artificial fly the instant the fish seizes it he is apt to find the deception, either by its want of taste, or by feeling the point of the hook, or by discovering the unyielding nature of the material of which it is composed, and he therefore, as soon as may be, *blows* it out again; and thus we constantly observe, when a timid irresolute learner has raised a fish, and hesitates in striking it, fearful of being too quick, or otherwise so paralysed with the sudden attack, that he cannot collect himself for a second or two, and half that time is all that ought to be allowed for the seizure of the bait and the stroke of the angler.

3897. *The striking must be instantaneous* to be successful; for when it is considered that the impulsive effort which is to fix the hook in the mouth of the fish (which has but that instant closed it on the bait), is first to be taken cognisance of by the angler, and then is to be acted on by him through a solid line of communication of many yards in length, it will be evident that a rapidity of action is required almost equal to the thought which willed it; for, as already observed, unless the stroke reaches the mouth of the fish before he has discovered the deception, it is generally too late: fortunately for awkward anglers it is not always so, as the act of ejecting the bait being at the moment of the turning round of fish in their retreat, it happens that they occasionally at the same time hook themselves.

3898. *It is possible, however, to strike too quick;* and this is frequently done by those who are very ardent, as well as by those who, having been convicted of being too slow, attempt to amend by the contrary extreme. We have fished with many young hands, who have struck the instant they saw a fish rise even; and consequently, although the bait might have been struck at, the mouth had never received it, or, if it had, the mouth had not had time to close on it. Striking a fish should be done with a smart, but not with a violent effort. The ardent angler will often strike with such force as to either tear away his hold on the fish, or to become minus by gut and fly, which snap by the sudden jerk. There is nothing better calculated to cure a young practitioner who strikes too forcibly, than to oblige him to whip for bleak, and to pay forfeit for every one he raises above the surface of the water, receiving forfeit for every one he hooks without showing it. The forcible stroke that wholly misses its object often throws the bait out of the water by the violence of the effort; the moderate stroke that misses will not displace the hook more than a foot or two. The critical fish-stroke is made by a very quick but very gentle wrist motion, by which the hand is canted upwards, being displaced about two inches only. Such a stroke made instantly the fish actually reaches the fly (which is learned by habit), at the moment he has closed his mouth on it, and before he has time to throw it out again, is sure to secure the entrance of the hook within the substance of the mouth, without causing great alarm to the fish by any unnecessary violence, for it cannot have escaped the observant angler, that when a trout has been harshly tugged in striking, he commences at once a more determined resistance than when the stroke has been less violent, and his alarm less sudden. Neither can we wonder that his efforts should be extreme, when he is made sensible of his situation by a stab and a drag which has half pulled him out of the water.

3899. *If such critical nicety be required in striking*, it may be here asked, How is it that fish are ever taken by novices? Such a question is reasonable, for such is the fact; but on the grounds we have already gone over, the discordance can be readily explained. Many eager and hungry fish hook themselves, in taking any bait, without hesitation: their seizure of the fly, their closing their mouth on it, and the passing it backwards, are all one instantaneous effort; and on examination, such fish will be often found to have partially gorged the bait. But if the number of fish so taken were arranged against the number of those lost by a defect in striking, the difference would be as five to one of small fish, and as ten to one of those of mature growth.

3900. *The after-management of a fish which has been successfully struck* has been already dilated on (p. 1037.), and to those directions we would refer the learner. Here we must content ourselves with a general hint or two. If the fish be of a tolerable size, immediately throw up the point of the rod, and if the fish give signs of being a very heavy one, then actually force the butt of it so forward as to carry the point over the shoulder, which will transfer the strain on the line to the elasticities of the joints of the rod; and this indication must be pursued until the fish be sufficiently exhausted for landing: we may also take occasion to caution the angler never to let a fish strike towards the weeds, nor up nor across the stream; but, if possible, down the stream only, keeping his head high up in the current to tire and drown him. Likewise avoid letting yourself or your shadow, as well as that of your rod, fall on the water when fishing.

3901. *The wind is greatly assistant to the fly-thrower's practice;* for it takes much of the trouble from off his hands, and does his work also much better than he can do it. When he has learned to take advantage of the breeze, he will allow it to carry his fly to the surface, with no other effort than the simple unfolding of the line; and in the wind, his errors and those in his tackle will be more readily concealed by the ripple which it makes on the water. Without a breeze the novice seldom catches fish; with one, particularly with a warm brisk one, almost any body, with almost any bait, will take them. But in a brisk wind it behoves the young angler to remember, that unless he yields his line (particularly if he have much out) to the action of the wind more than to his own, he will snap off a fly at every other or every third throw. Unless the wind be very strong, prefer casting the line rather obliquely than directly down the wind, as the fly will descend more naturally by remaining suspended for a moment in the wind before it fall; thus thrown, it likewise occasions no disturbance in the water.

3902. *The beginner should also practise throwing against the wind,* which, when attained, often proves very convenient, as to fish with the wind is not always in our power, and it is not unfrequent that the sheltered bank is the favourite resort of the trout. When the gale is very boisterous, it is a good practice for the angler, instead of having to open the fly-book for the selection of his flies, either to have such as are likely to be wanted well hooked into his hat, which we will suppose, in accordance with a former recommendation, to be a drab beaver, as the least conspicuous, p. 998. It would prove still more convenient, where the angler uses more than one fly, that is, where droppers are added to the end fly, to have *two or three foot-lengths* of gut or hair, as the case may require, with the proper flies affixed. Two or three such foot-lengths may be wound round the bole of the hat, one above the other. Of the advantages and disadvantages of using more than one fly at a time, we have already treated (p. 974.). It will be evident to the most experienced, that more than one cannot be used without great inconvenience in weedy as well as in narrow waters; but that in wide stony streams one or two droppers add much to the chances of sport.

3903. *A knowledge of what are called standard flies* will often prove a considerable assistance to the tyro, who may be at a loss with what to commence his practice; we therefore offer him the excellent hints of Bainbridge, on what that author considers, in our opinion justly, as standard flies, or such as are suited to most waters and to most seasons: — "Two or three lines may be in readiness with three flies affixed to each. For the first attempt he may use the March brown (or, later in the season, a reduced fly of the same form and materials) at the point, with a dun hackle, having the body light or dark to suit the day, for the first dropper; the second dropper a red hackle, with peacock body. If these flies do not raise fish, after trying two or three streams, it will be advisable to change them, and put on the following, viz. at the point the sand-fly; first dropper, grouse hackle or wren's tail, with orange body; second dropper, a pale yellow or cream coloured hackle over a bluish body, or one of the ant-flies, as a variety from the preceding five. The bodies of the hackles are to be dressed large or small, in proportion to the water. With some of these flies an experienced angler will take abundance of fish all the year round; and it will be time enough for him to change them when he shall have correctly ascertained which fly is the favourite of the fish for the time being." Coiled foot-lines thus furnished may, it is evident, be kept ready by the angler to any extent, so as to correspond to days, seasons, and waters. In pursuance of a former notice, we introduce a copy of our monitory card-list of indispensables for fly-fishing; and appended to the trout-fishing practice will be introduced a diary table of sport, p. 1185.

FLY-FISHING CARD.

Rod, reel, and line, each in order.

Fly book — duplicates or triplicates of every *seasonable* fly, on stained and unstained gut and hair; occasional ditto, as palmers, moths, &c.

Or otherwise,

Foot-lengths of seasonable flies, not less than three, varied, with stretchers and droppers wound on your hat. The coils being large, the line is thus readier for use.

Fly-dressing book; see that it is complete with hackles, feathers, dubbings, furs, silks, wax, and spring-pliers. Hooks, *gut-* and *hair-*mounted and naked; gut and horse-hair lengths, stained and unstained; spare foot-lengths; reel line ditto; gold and silver twist; knife; scissors; disgorger; drag-hook; landing hook or net; pannier, &c.

Occasional,

Spare rod; minnow spinning tackle; devil-bait; fly-minnow; line for live bait; trolling tackle; bait-box, &c. &c.; nor must tying silk for rod mending be forgotten.

Sect. II. *Fly-fishing or Whipping for the coarse and white Fish.*

3904. *To the fish which are likely to take the fly* we must now introduce the angler, having, as we hope, brought him to some dexterity in throwing it. But that we may not scare him with early difficulties, we will first show him such as require little skill to ensnare. It must however be observed of these *white* or *coarse fish*, as bleak, roach, dace, chub, &c. that, as they are considered to be out of the orthodox pale of the fly-fishing catalogue, and as those who pursue them, though not regular fly-fishers, yet often attack them by whipping and dipping, so it will be found, on turning to our chapter on bottom fishing, that the flies employed, both artificial and natural, and the times of using them, as there noted, make the anglings for these particular fish complete in one view. This we have done to fulfil a necessary intention, as many anglers get a habit of confining themselves almost exclusively to the pursuit of one or two particular fishes; and with such it is of consequence that all the methods of capture be brought together. We however hope that our own experience, and what we derive from others (and who among us is too old to learn?) will afford the means of offering something new and something instructive in both places; and, as regards ourselves, we are by this means enabled to preserve an appearance of systematic consistency.

3905. *As we consider the fly practice for the white fish* as initiatory to that to be employed against the more active members of the salmon genus, as grayling, trout, and salmon, so we recommend to the young angler, in his pursuit of it, even if he whip for bleak only, still to do it systematically with the true fly gear, and with a due attention to a critical throwing of his fly; we would have him use the same fly-rod, with its full apparatus of running line and butt-spike, for bleak and dace, as he will employ in his future attacks on the larger and nobler finny game. A good method is as easily learned as a bad one; one method is more easily learned than two, and it is more difficult to unlearn than to learn; and with these hints we will leave the matter to his own discretion, venturing however to assure him, that he will have no reason to repent his adoption of them. The natural history of each of the fly-taking fish which will fall under our consideration, has been fully detailed under their respective heads in the chapter on bottom fishing. Here we propose to consider only the means and methods employed in taking them by fly-fishing, artificial and natural.

Subsect. 1. *Fly-fishing or Whipping for Bleak.*

3906. *The bleak* (*fig.* 519. p. 1044.) is so lively and sportive a fish as to be called the water-swallow, and consequently is well fitted for initiating the young angler in fly-throwing. Any small artificial fly will raise bleak, as the gnats, Nos. 1 and 50.; the little red and black ant, Nos. 54 and 55.; also the bluebottle, No. 36. when dressed on a No. 10 or 11. hook: and a very minute dark hackle-fly, with a gentle on the point, is likewise a most killing bait. They rise all day in summer, but best in the mornings and evenings of sultry days. (See *Bleak Fishing*, p. 1045., where the matter is also touched on.) In the New River, the young London angler may practise his lessons with convenience and much advantage, as their risings are quick, and therefore they accustom the hand to strike as quickly. We have met with them in almost all our inland rivers, and very amusing little skip-jacks they are, and well calculated to initiate the young fly-fisher.

Subsect. 2. *Fly-fishing for Roach.*

3907. *The roach* hardly deserves mention here, as his fly-taking propensities, such as they are, have been noted elsewhere (*fig.* 521. p. 1048.); but for the sake of system and regularity we have given him a subsectional niche. He will, indeed, suck down several varieties of flies on, or a very little below the surface, at such times as numbers of them are congregated together in still water, at the sides of rivers and near rush and sedge pools. A red palmer or winged fly on a hook, No. 6., during the spring and early summer months, and the same fly at a later period, and in autumn, with a gentle at the end thrown amongst them, will very often take one after another of this assembly. In the evenings of very hot days that have been accompanied with showers, the blue-blow, the ant-flies, and a small red palmer-hackle, will often commit havoc among them. If the light be strong, they will take it best six inches below the surface; if the sun be down, they will take it on the surface. As in these cases they commonly get to the extreme limits of a pool, where they fancy they can bask in security, the extensive throws that are required to reach them, make good practice for the young angler.

Subsect. 3. *Fly-fishing or Whipping for Dace.*

3908. *The dace* in our opinion is not sufficiently estimated, and although, as professors of the art, we are aware we ought to blush at owning it, yet candour obliges us to the avowal that we have passed many delightful hours in dace whipping; and we even think it, when trout are not within reach, a very fair sporting-like and amusing fish; and as for initiatory practice also it stands pre-eminent. Captain Williamson says, " The young angler cannot do better than devote one summer entirely to whipping for dace; he will thereby acquire many excellent qualifications, for his hand will move very lightly, so as to cause his fly to light imperceptibly on the surface, which is an object of the greatest moment. He will learn to direct his line correctly to any particular spot; and as he will at times be attacked by fishes of a superior class, he will acquire a knowledge in respect to playing of fishes, and be ultimately convinced that fine tackle is not only the most attractive, but in good hands is generally equal to the subduing of such fishes as the bad angler could never manage, even with stouter apparatus. I lay some stress on this point, being thoroughly satisfied as to both its utility and the indispensable necessity of such an opinion being inculcated and received before the learner can be said to have made any proficiency. In a word, throwing the fly for *dace* may be considered as the best school to which the angler can resort."

3909. *The fly baits for dace* are either palmers or artificial varieties of the house and flesh-flies. Gnats, duns, and ant-flies, are also taken by them in every mode of dressing. When the angler is fishing for instruction, and we think likewise for *true fly-throwing* pastime, he should use one fly only on his line, which it would be well to have of hair for one-third of its foot-length. If he fish for numbers, it is better to use a line wholly of gut, but extremely fine towards its extremity, which may be tipped with a stretcher, dressed on a hook, No. 8. Two droppers, one on a No. 9., and the other on a No. 10. hook may be added, and all three should be on hair. For early summer, let the stretcher be a bluebottle dressed as a palmer-hackle, with a peacock's harl; the lower dropper may be any dark dun, and the upper a gnat. In the autumn use a black or red ant-fly for a stretcher, a minute house-fly for one dropper, and a gnat or spider-fly for the other. The dace-whipper is referred to the chapter on bottom fishing for further information on this branch also, p. 1046. The black gnat is a general dace-fly. The sand-fly is also deadly.

Subsect. 4. *Fly-fishing for Chub.*

3910. *These fish are more readily taken by other means* than the artificial fly: the natural fly is, however, sufficiently successful. Chub will nevertheless rise freely to the palmer hackles, Nos. 9, 10, 11.; to the domestic flies, Nos. 36, 48, 49., and to the humble bee, No. 47., as well as to other showy flies. In the Wye, the Thames, the Trent, and the Lea, we have often thrown, by means of a long line, either a roughly-dressed palmer-hackle ribbed with silver, or a humble bee palmer-hackle, during the heat of a summer's day, when no other fish would rise under shady bushes, and by this means have taken very large chub, which have shown excellent sport. Of all these rivers the Lea and the Wye afford the best chub fishing with the artificial fly. We have thought that on both they take the made fly better than elsewhere. Captain Williamson says, "When you use the fly for chub, you cannot have too fine tackle; that is, in proportion to the size of the fishes. The best mode is, to whip from the head of a boat, which should be allowed to drop very slowly down the stream, by what seamen call 'kedging;' that is, with a very light anchor, or stone, out astern, with just sufficient rope to allow the anchor to trip over the bottom, occasionally checking the progress, so as to go rather slower than the current. In this manner stand in the forepart of the boat, and throw before you down the stream, using either a very nice red spinner on No. 4 or 5. hook, or a large sized oak-fly on No. 5., for at such they will rise well, and afford good sport.

3911. *It is necessary for the angler* to be aware of the strength and determination of these fish, when they are large, and particularly such as are bred in powerful streams, for though they will not continue a vigorous defence for a great length of time, they will struggle most violently at first, and endanger even strong tackle by their extraordinary boundings. We hardly know a better fish to inure a young angler to more powerful game than chub, for they are at once wary and strong.

3912. *Taylor says of chub*, "They are often caught by the common way of fly-fishing with a long line and artificial fly, particularly the red spinner, and they are often taken also when sporting for other kinds of fish. Their biting times are chiefly from before sunrise until eight or ten o'clock in the morning, and from four till sunset in the evening in the summer (though some will take by chance at any time of the day), and in the middle of the day in winter." Salter observes likewise, that "Some anglers, when whipping for chub and dace in the same stream, confine themselves to the red spinner, the oak-fly, and a fly of a dusky or dun colour, all on No. 9. hooks. In the river Lea these flies answer well."

3913. *Night fly-fishing for chub* is pursued in the summer months with the moths, Nos. 39 and 40.; and some of the largest fish are then taken; but the angler must not deceive himself, and suppose he can, because it is night, approach them without caution; on the contrary, little less is necessary at this time than during the day. Something further on this subject appears in our account of the habits and form of this fish, and on the other fishings for it, p. 1054.

Sect. III. *Fly-fishing for Grayling.*

3914. *As the grayling is not common* to every river, and as it shows much sport by its readiness to take artificial as well as living flies, it is much sought after by sportsmen. The natural history of the grayling generally, and the methods of taking it below the surface of the water, are fully detailed in the subsection on bottom fishing (p. 1087.). We shall here consider it only as a subject of the fly-angler's sport. The grayling is more truly insectivorous than the trout, its principal food being derived either from insect larvæ or winged flies produced from them; and it will take both indiscriminately at all seasons when they are to be found. The dissimilarities between the habits of trout and grayling make a considerable difference between them as objects of the angler's pursuit, both with regard to the methods he employs, and the seasons he is engaged in them. Trout as a fly-taking fish is confined within the limits of a few months. Grayling, on the contrary, will seldom refuse them altogether at any season. But notwithstanding their readiness to rise to the surface, from the early spring to the late autumn months, it is yet usual to consider the true grayling fly-fishing season as being from July to the second week in November. This is partly dependent on the circumstance, that during such period this fish is in its greatest perfection, and that from the decline of summer, and through the autumn, it will take flies with great eagerness. It is also perhaps not unlikely, that the secession of the trout from the angling scene about this time has much to do with this exclusive season attributed to grayling fly-fishing; for in some rivers it is common to leave off attempting them with a fly at this time, and to use only gentles or grasshoppers under the water. As far as our experience goes, at all times, and in all waters, more fish may be taken by the methods practised under the surface, than by those practised on it. It is no wonder, therefore, if the pot-fisher in every country is more favourable to the worm, gentle, cad bait, and grasshopper practices, than to the more elegant but less productive method of well using the artificial fly.

3915. *The identities of character between trout and grayling*, one might be led to suppose, from what we meet with in some angling works, to be uniform; and might conclude that in the same rivers they may always be found; also that the same baits and the same tackle will take either. But the analogies are by no means so close as this; and not only are their habitations, food, and angling seasons different, but their methods of taking a bait and yielding to its force are likewise different.

3916. *On the localities of the grayling*, it is well observed, that "they do not dwell, like trout, in rapid shallow torrents; nor, like char or chub, in deep pools or lakes. They require a combination of stream and pool; they like a deep still pool for rest, a rapid stream above, a gradually declining shallow below, and a bottom where marl or loam is mixed with gravel; and they are not found abundant except in rivers that have these characters." (*Salmonia*, p. 167.) The grayling is more simple, and consequently less wary than the trout; it may be approached nearer, and its voracity prompts it to rise many times to the same fly, and even sometimes after it has been once or even twice pricked; and yet, strange to say, though the fact is well known to experienced fishers, the tackle employed can hardly be too fine for them; and particularly it is necessary to success that the gut be not only of the finest kind, but that it be tinted to the hue of the water also; and for this reason many excellent anglers use hair instead of gut.

3917. *The mode of rising of a grayling* is somewhat different from that of the trout, and may in general be readily distinguished from it, particularly between the risings of those of moderate size. The grayling, it may be observed, shoots upwards from the bottom, the trout lies hidden usually at no great depth, and is ready prepared to elevate itself to take the flies one after another as they sail over it. It is also familiar to us, that grayling will rise oftener to a fly, and yet refuse it oftener than a trout; but they will on the other hand, after a throw or two, again rise, and eventually take it, which a trout seldom will. Sir Humphry Davy thinks grayling altogether more choice in their flies than trout,—an opinion in which we can hardly agree: he allows, that as regards colours they are less particular; and in proof, we have in our own practice taken them with a fancy fly much oftener than the trout. During rain, grayling do not take flies so well as trout; neither after a flood do they come on the feed so soon as trout, which is attributed by anglers to their lying at greater depths; but we rather ascribe it, either to the circumstance of their being gorged with the larvæ stirred up at such times, or they may also be sickened with the mixtures which come down. We are led to this opinion from having observed, that even for some days afterwards they have not been so much on the alert at rising as before. Grayling, however, are more ready to rise than trout in very bright weather, particularly the smaller ones; but, like trout in warm cloudy weather, they are by far the most eager; and though we think the wind is altogether less absolutely necessary to grayling fishing than to trout, yet grayling fishing is most successful with a moderate breeze. A cold easterly or north wind is commonly fatal to the sport.

3918. *In striking the grayling* it is necessary for the young angler to be aware that its mouth is smaller and less membranous than that of the trout, and consequently does not present so good a hold for the hook, which without delicate handling, both in striking and playing, is apt to break away. The struggles of the grayling are sufficiently violent at first, but they do not usually remain so long, though a large one is not always so "dead hearted," to use the fisherman's term, as is commonly considered. The first struggles of the grayling should therefore be yielded to without restraining him, until it is found that the hold is sufficiently secure.

3919. *The flies for grayling* are commonly stated to be the same with those of trout, and the statement as a general rule is just; but there are some trout flies which are not relished by grayling. Our own observation also coincides with those authorities which state that the flies for them should be dressed smaller than those for trout. We should seldom in our own practice offer grayling of the ordinary sizes, which are from one pound to two, any fly larger than one on a No. 6. hook, which as a stretcher may be accompanied by a dropper or droppers of No. 7, 8, or 9. In the Hampshire streams and other waters, where these fish run larger, they will readily take the May-fly and stone-fly of the largest sizes, and also the larger moths. We, however, recommend the grayling fisher to dress even these purposely smaller, and in general to make use of small rather than of large flies, convinced as we are that they will best fill his basket. The favourite flies of the grayling are found among the *Ephemera* and the *Phryganea*, but principally the former, there being but few of the small duns that are not killing baits for them. Gnats and spider-flies, or tipulæ, they likewise take greedily, and the varieties of the house-fly are seldom refused.

3920. *In February* grayling have been killed with the representations of gnats, No. 1., and the early small black fly, No. 2.; but this can by no means be considered as part of the grayling fly-fishing season.

3921. *In March and April* the smaller grayling in open weather are sometimes disposed to rise to No. 1 or 2. The alder or red fly, No. 3., towards the end of March will be found effective in tempting such larger ones likewise as have left the deeps; and when this fails, we would recommend the angler to try No. 6. as a stretcher with Nos. 7 and 8. as the first and second droppers; the first dressed on a No. 8. hook, the other on a No. 9.; or, in a blustering day from a favourable point, use as stretcher and droppers, Nos. 4, 5, and 7. The gnat may be substituted occasionally for the upper dropper; but the stock flies in grayling fishing are the duns in all their varieties. In April the grannam appears, and is recommended by Sir Humphry Davy. We must not, however, place much dependence on the chance of sport at this early grayling season; for though towards the end of the month they will leave their haunts, and seek the shallower waters to prepare for their spawning, they will not be yet found much on the alert in quest of winged food.

3922. *In May and June* grayling fishing is interesting but not very productive, and it is seldom that a great quantity is taken; for May usually finds them rather sluggish, being near the time of spawning, or being weakened somewhat by having spawned; they may, however, be tempted in warm lowering weather by their favourite flies the duns, particularly by the lighter varieties, to which they will sometimes rise even freely. Sir Humphry says, that the dark alder-fly, imitated by a dark shaded pheasant's wing, with a black hackle for legs, and peacock's harl ribbed with red silk for a body, is also well received by them at this time. He recommends as well both the red and black palmer-hackles, Nos. 9. and 11., which we cordially approve; but we beg to add to them the black caterpillar-fly, No. 34., as an excellent killer too. The May-flies and stone-fly are now on the waters; and their representations are successfully employed wherever the originals are bred, and there only. Of the green drake as a grayling-fly on the Dove, Cotton says, " He is taken at all hours during the season, whilst there is any day upon the sky: and with a made fly I once took, ten days after he was absolutely gone in a cloudy day, after a shower, and in a whistling wind, five and thirty very great trout and graylings, betwixt five and eight of the clock in the evening, and had no less than five or six flies, with three good hairs apiece, taken from me in spite of my heart, besides."

3923. *In July and August* most of the trout flies native to the rivers are readily taken by grayling also, and at the same times of the day, and under the same circumstances, as they are taken by trout. The spider-flies, the house-flies, the gnats, the ant-flies, and the duns, may likewise be enumerated. Sir Humphry Davy particularly praises the pale blue dun for August and September; and it is noticed in the same way by other writers; but it is not however, in our opinion, equal in killing qualities to the sand-fly, No. 35. We have in our own practice been very successful likewise in very hot days with the case winged orange-fly, No. 38.; and in the evenings of such days after sunset we have killed fine grayling with both the white and brown moth, Nos. 39. and 41.; but it was our custom to dress them purposely on a No. 5. hook. In the Dove, within its rocky precincts, a small fly called a mackarel is successfully used in the summer months. It is formed from a grouse hackle and brown dun dubbing, on a No. 8 or 9. hook.

3924. *In September and October* the flies taken by trout are almost without exception equally acceptable to grayling also, the varieties of the dun however still proving the stock baits. As long also as the ant-flies remain, their representations will kill, and on some days more than others; but the late dark bodied willow-fly (No. 36.), the pale blue dun, and the red dun of the early months, prove still more regularly tempting. Of the former there are successional changes throughout October; and these with gnats, and small muscæ, or house-flies, form the hopes of these late fishings. Towards the close of September the grayling begins to confine its fly risings to the middle of the day; yet throughout October and even in November it may, in the middle parts of fine days, be tempted with such ephemeral flies, gnats, and small black flies, as then appear. It is however none but the professed fly-fisher that will thus attack them at this period, as the gentle and worm under water is then by far the most killing practice. It remains to say, that with the exception of such peculiarities as have been noticed, the instructions and observations which follow relative to trout fishing are equally applicable to grayling.

Sect. IV. *Fly-fishing for Trout.*

3925. *This most interesting diversion* has been so often eulogised in our pages, that we shall not here offer another word on its pleasures, but confine ourselves to drawing into one general practical summary the substance of our former details, referring for information on the individual matters concerned to our index. We will suppose our pupil (with whom we have now spent many months, and whom we thank for accompanying us through so many pages, toilsome to us, and perhaps wearisome to him) to have arrived at the side of an excellent trout river, his landing net grounded, to give him time to thread his reel line through the smoothly polished rings of his justly tapered rod. And here we would recommend him, instead of looping his foot-length to his reel line after the usual manner, by which two folds, somewhat bulky, are necessarily interwoven with each other, to attach it by neatly whipping to the running line a length of gut, which should be as near to the size of the fine end of the reel line as possible. To this whipped piece of gut, we would advise that the foot-length be tied at each time of using by a water knot, which will totally prevent the inequality of action occasioned by the looping, which is most certainly detrimental to critical correctness in throwing or delivering of the line. It will be necessary that each end of gut be first softened to insure the security of the tie, which may be easily done by holding them a minute only in the mouth. Rather more than half an inch of gut only is lost from each end, which, when it has amounted to six inches from each, can be replenished by an interposed link, and the angler goes on again as before. This will be thought by some an unnecessary trouble; but we apprehend that if tried it will then be otherwise regarded: the usual looping, particularly when coarse, is apt to make a ripple on the water, unless the foot-length be very long: it also adds to the weight, and in gales catches in the wind.

3926. *The trout in a sporting point of view* is evidently more wary and cautious than the grayling, requiring the angler to be very circumspect, and as much concealed as possible. A pricked trout instead of again rising to the same fly, if he have once or twice refused it, and struck short, will seldom rise to another for a considerable time afterwards, sometimes for some hours, being either convinced of the deception, or becoming alarmed from having seen the angler. The smaller trout do not confine themselves to one situation, but move about in search of food; a larger one, on the contrary, confines himself principally to a particular spot, which he retains as a strong hold, and from whence he seldom moves in the daytime but in search of prey, making short circles in pursuit of minnows, &c. A situation favourable to the observation of the passing flies also is usually chosen by the trout, such as the tail of a weed-bed, the turn of an eddy, or wherever the floating insects meet with a momentary check. Here he frequently elevates himself in the stream, so as to be but just concealed, and from thence he takes such as sail over him, and this he often does in a very quiet manner, so that were it not for the large circle made in the water it might pass unperceived. This quiet manner is particularly observable in the evening, and in his rovings in very gloomy hot days; occasional circumstances may interfere with this, but such is the general mode of rising with a large trout, particularly when intent on feeding on any of the ephemeral or caddis-flies. It however frequently happens that disappointment awaits the angler on these occasions, for in a very warm bright day, large chub, or even large roach, will congregate in a shady pool, and take insect after insect somewhat in the same way. We say somewhat, because the risings are not effected altogether in the same manner; and the experienced fisher will readily distinguish between them. In the first place the situation chosen by these white fish is usually towards the middle of a still pool; but the trout, although he may hold his haunt in a deep, or near a pool, will usually choose such a one as is within the vortex of an eddy or small whirlpool, which constantly curls the water, and brings before him the insects passing downwards, so that he is under no necessity to quit the spot. Large chub and roach, on the contrary, generally move from place to place, rising now in one spot, and the next time two or three feet in another direction, for they are more on the look-out for such non-aquatics as may fall from the banks or surrounding boughs, as caterpillars, beetles, bees, and the varieties of the Muscidæ, &c., than for the ephemera or phryganea. Another distinguishing mark between the risings of these and those of either trout or grayling is, that they are often accompanied with bubbles thrown out from their air-bladder during the effort of seizure, or preparatory to it. A trout rise gives also the idea of muscular strength.

3927. *When trout have fully recovered their strength after spawning*, they will often be found, to appearance, to approach the centre of powerful currents; but we believe that in such cases they are not often found in the extreme rapid, but to lie below it rather, and that in such case the full force of the stream flows over them. Such a situation is favourable to the angler, as he is not so easily distinguished, nor are the defects of his bait so soon discovered; but a trout thus situated is more likely to strike at a minnow than to rise at a fly, and he is in general at this time more intent on the former than on the latter kind of food. It is otherwise when a trout occupies the tail of a current; such a one seldom refuses the proper fly of the day, but it should be shown to him coming out of the current itself. The trout delight in every bold secluded situation, whether it be between the piles and piers of bridges, or among the broken rocky masses of precipitous waters; behind a large stone, or under the projecting portions of fallen rocks which divide the streams, or under the shelter of banks and hollows worn by currents in softer soils.

3928. *When a trout has risen more than once to a fly*, and refused it, the angler may rest assured there is something about it which he does not like; it is either not *the very fly on the water*, or it is otherwise a bad imitation of it; and this must be remedied either by a more just representation, or by some other more alluring variety, to insure success. Trout are likewise frequently observed to rise as though in sport, for they either take nothing, or if they do, the matter taken is so minute as to escape notice. It is probable in many such instances that they actually rise in play only, as they throw themselves out of the water, which is not common with them when rising to seize a fly, unless such fly be just taking wing: we would therefore caution the young angler against wasting his time in offering any baits whatever on such occasions, unless he be disposed to endeavour to flog the refractory fish into a more taking mood, which he will probably find a difficult task. This sportive humour sometimes comes on in the middle of a bright day, and in the evening of such as have been cloudy and become bright at sunset; but we do not recollect to have observed it in the morning.

3929. *On the occasional playfulness of fish* we have to remark, that such a propensity does really occur, and in such cases they will be seen to rise in all directions at flies that swarm on the water, especially during the evenings following sultry noons. When such is the case, the angler can scarcely mistake; but he will find the fishes so glutted in a short time, that they will discontinue to rise, or at least will be so indifferent, as to render it difficult to attract them. In the early part of the evening, at that hour when the fishes are keen, after a day's abstinence, and the flies just beginning to appear, the best effects may be produced by proper selection of the flies to be used. But there are times when the fishes are every where rising, yet not one will touch a bait of any kind. Many circumstances occasion this; but generally it is owing to the water being so much warmed as to become uncomfortable to the fishes; they then plunge into the air, which being cooler than the water, or at least refreshing from its action on the wet surface of the fishes, proves particularly acceptable, operating with them, no doubt, much the same as the cold bath at the same season does upon the human frame. The great point to be attended to is, that when fish rise to a fly, they come forth with rapidity, rarely putting more than their noses out of the water; indeed, they often do no more than give a sharp whirl on the water, perhaps scarcely reaching the surface, though it appears agitated. On the other hand, when a fish rises for recreation, he comes up more deliberately, makes a greater splash, generally throwing all or the greater part of his body out, and descending head foremost in a temperate manner. When a fish leaps far out, he generally comes down on his side, and makes a large break in the water as he falls into it. We have observed that such "are not to be had on any terms."

3930. *Avoid throwing directly into the circle* made by a trout that is rising, but do it higher up and a little beyond it also, by which the fly, when properly humoured by the hand, will just commence *showing* itself as it reaches the trout's view. The distance which it will be right to throw before the circle last made, will depend on the nature of the current: if it be very rapid, throw two yards above and half a one beyond; if gentle, make the cast one yard above and six inches beyond. In lakes and other still waters, however, this caution is not applicable, and the thrower is warranted in making his cast near the last circle; but this, it must be observed, does not always succeed either, for in lakes and large trout ponds, the rising trout do not remain stationary as in currents, but wheel about in circles. When angling in a river whose opposite bank can be reached, throw the fly directly on the edge of the bank, or against its sides; it then falls so naturally, as frequently to entice a fish at the first throw.

3931. *On the rising of trout*, Bainbridge has an excellent practical observation, worthy the young angler's notice: — "When a trout is observed to rise of his own accord, the flies must not be thrown directly over him, but about a yard higher in the stream, so that they may float down to his view, without the fear of agitating the water; and if upon hooking a fish he be observed to leap frequently out of the water, it will require the utmost care of the angler to secure him, as he may calculate upon the barb being only slightly fixed." It might we think have been added, that even more probably it may be fixed in some other part than the mouth, in angling language called *hooked foul*. But if, on the other hand, he remain below the water, and struggle at the bottom, there need be little fear of his escaping, as the hook will be found to be firmly and mouth-fastened. "When angling for trout, and it is known that salmon frequent the streams, it is necessary to use stronger tackle than might otherwise be advisable. An instance of the utility of this precaution occurred to the author:—In one morning's fishing, five salmon rose at his trout flies; two of them he succeeded in taking; the largest weighed sixteen pounds and three-quarters, and measured two feet nine inches in length. It is true the gut of which the line was composed was choice, but it was single, and not of that description which, from its extreme thickness, is called salmon gut. The time occupied in playing this fish was about an hour and three-quarters; and never did a general derive greater satisfaction from a victory than was felt on that occasion."—*Fly-fisher's Guide*, p. 70.

3932. *The trout fly-fishing season* depends much on the circumstances of locality, temperature of the atmosphere, &c. &c. In the Usk and Driffield the trout are forwarder by a fortnight than they are in other rivers of the same counties, though not far distant. A warm and early season, by producing a more speedy evolution of the insects congenial to them, hastens their return to condition and strength. This *condition of trout* is known by their appearance, and the relative proportions between the weight and linear measurement, as the subject of it is in or out of condition. These circumstances are important to the angler, as it is little to his credit to take any fish in an unseasonable state, and still less so to send such as presents to his friends. Our chapter on angling travel will give some information as to the waters which are known to be favourable to early condition in the salmon, trout, and grayling contained in them.

3933. *Of the fly-baits*, their description, and the times and seasons when they are to be brought into use, we have very fully treated in our monthly lists; and it now only remains to recommend to the angler, as a matter of utility and instruction as well as of interesting future reference, that he keep a ruled table of sport after the following method, which it will be found is framed only for grayling, trout, and salmon, but which, by additional lines, may be made to embrace other occasional varieties also:—

Table Diary of Sport for 1858.

Time.	Wind.	Weather.	Water.	Flies.	Grayling.	Trout.	Salmon.
May 10.	S.W.	Mild.	A fresh.	2, 4, 5, 3.	4	7 ½-pounders	1 missed.
12.	N.W.	Cold.	Bright.	4, 2, 1.	3 of 1 lb.	9	
16.	Southerly.	Stormy.	Low.		&c.	20	
	&c.	Genial.	Muddy.			&c.	
		&c.	Snow water.				
			&c.				

SECT. V. *Of Natural Fly-fishing.*

3934. *This method of taking fish* is occasionally called whipping, but more often dipping, daping, dibbing, and, in some of the older works, bobbing at the bush (*fig.* 561.). Whipping as a term can only be applicable by any licence of language to the act of whipping out a natural fly, after the manner of a short throw, with an artificial one; but it is evident that the tender nature of the living insect will admit of this but in a few instances. Some of the house-flies, the blue-bottle especially, and others of the middling sized beetles, as well as the humble bees, will bear a partial or short throw, but a short one only. Practice will convince the angler that large natural baits cannot be thrown to any distance with advantage; the fact is, that they are far more appropriate to situations close under the bank, where the large fishes frequently lie, especially in ponds, waiting for what the wind may tender to them. When, however, there is a very strong wind at the back, the natural fly may be carried out to a very considerable extent; but it must be by the act of the wind itself, and then the practice proves very successful: at other times the angler must be content to fish with as much line as he can command by his situation, without tearing his fly from his hook. With a strong wind, the angler should keep his rod steady in one position, taking the wind rather slantingly behind, and allowing the breeze itself to carry the line, he should watch a momentary lull in the gale, when by lowering his hand he may drop the fly on the surface as gently and as naturally as possible.

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DIPPING FOR TROUT AND GRAYLING.

3935. *Dipping when skilfully conducted is a most killing practice;* and where quantity is wanted, it is well suited to the purpose. It was never a favourite method with us, and the only times we could bring ourselves to give up the use of the artificial fly for the natural, was when the weather had been too bright, and the waters too low and clear to give much chance to the former, or when the deep still pools contained all the fish driven thither for want of water. We have at such times occasionally practised it, and have been much interested in observing how the fish, particularly chub and dace, have clustered round in expectation of the fly which hung over them; and not unfrequently we have witnessed their leaping out of the water to insure it: but this eagerness is only to be observed when the angler's person is completely out of sight; for in this kind of fishing, quietness and concealment are indispensable requisites, which has occasioned this method to be called by some anglers *bush* or *shade fishing*, from their practising it under the concealment of shade afforded by bushes, as *bobbing* is also derived from the short line which is made use of at these times. This predatory mode is described so truly with the energy of a real pot-fisher by the *North Country Angler*, that we cannot refrain from presenting his account, which one might suppose had been borrowed from the bush warfare of the American Indians. "I generally begin fishing in the shade or under bushes in May, and continue it all the three following months, which we call the four hot months: most anglers in those months fish only in the mornings and evenings, unless the sky is cloudy and there is a brisk wind on the pools; for then one may have very good sport, and kill large fish. In these months, when there is no wind and the sun is shining, from about ten o'clock in the morning till four or five in the afternoon is the best time for shade fishing." The rod and line are then described by our author; but that subject we venture to take on ourselves.

3936. *A long and firm rod* of twelve, thirteen, or fourteen feet, with a very stiff top, is necessary for the purpose; the length to be suited to the situation: if it be a very close and confined one, eleven or twelve feet is sufficient; but we rather recommend that the rod be of the general length, and that the reel, instead of being attached to the butt, be fastened on the second joint, when by taking off the butt-end the rod can be shortened as occasion suits. A reel is not thought requisite by the author just quoted; but it is evident that in no fishing is it more wanted than in this, where it is required to lengthen and shorten the line according to circumstances; as for instance, where, from a length of seven or eight yards, it must be reduced to one, or even less, and sometimes even to be wound up altogether, that it may be insinuated through trees and bushes; and in such cases how can it be so well done as by a reel? The line therefore should be nothing more than the reel line with a foot-length of gut, strong upwards and fine below; and that it may be at the same time fine and strong, observe that the links be perfectly round and free from flaw. The length of this foot-length need not be more than three or four feet, and thus when it is neatly whipped to the reel line, instead of wrapping it loosely round the rod, as directed by the *North Country Angler*, it may be drawn up by the reel altogether; but we will let him describe his own method, and then the learner may choose for himself.

3937. "*Your line should not be above a yard long;* and where there is some difficulty in getting your rod-top through the bushes not above half a yard, which, when baited, you may wrap loosely seven or eight times about the rod-top, and when you have thrust it beyond the bush, turn your rod round as many times, and let your bait drop into the water. There is a great deal of caution necessary in managing your rod and line. Some pools are shaded only here and there with a bush or two; in such places you may fish with a line a yard or more long; but you must be sure to make your approach to such open places cautiously, for the great fish lie very near the top of the water watching the fall of flies or other insects from the bushes, where they are bred or harboured; and though you do not see them, yet they will see you at your first coming and scud away into the pool, and not return perhaps in an hour's time. I have been often agreeably amused sitting behind a bush that has hung over the water two yards or more, and observing the trout taking their rounds, and patrolling in order according to their quality. Sometimes I have seen three or four private men coming up together under the shade, and presently an officer, or man of quality, twice as big, comes from his country seat, under a bank or great stone, and rushes among them as furiously as I once saw a young justice of the peace do to three poor anglers; and as I cannot approve of such proceedings, I have, with some extraordinary pleasure, revenged the weaker upon the stronger by dropping in my bait half a yard before him: with what an air of authority and grandeur have I seen the qualified—what shall I call him? extend his jaws and take in the delicious morsel, and then marching slowly off in quest of more, till stopped by a smart stroke which I have given him, though there is no occasion to do so in this way of fishing, for the great ones always hook themselves."

3938. *When a fish is struck,* our author also judiciously recommends "never to let his fish get down his head, unless he, the angler, is sure there are no roots near enough for the fish to retire amongst; but to keep him at the top of the water, where his fins and strength are of little service to him; and besides, he may thrust out his rod so as to reach beyond the bush, and there work him till he is quite tired and lies still." An observation of this angler is worth recording, which is, that "Although the shade of trees and bushes are much longer and greater on the south or sunny side of the river than on the north, yet I always found the most and the largest trout on that side. I suppose the sun's being more intense and warm on the north side may occasion more flies, erucas and insects, to creep upon those bushes, and consequently the more fish will frequent them. Where the trees or bushes are very close, I advise the bush angler to take a hedging-bill or hatchet, or in want of that his sporting knife, and cut off two or three branches here and there, at proper places and distances, and so make little convenient openings, at which he may put in his rod and line; but this is to be done some time before you come to fish there. If you come to a woody place, where you have no such conveniences, and where, perhaps, there is a long pool, and no angling with the fly, or throwing the rod, there you may be sure of many and large fish. For that very reason I have chosen such places, though very troublesome, where I have been forced to creep under trees and bushes, dragging my rod after me, with the very top of it in my hand, to get near the water; and I have been well paid for all my trouble. Whilst you are getting in your rod throw a brandling or grub, or what you fish with, into the place, which will make the fish take your bait the more boldly."

3939. *Dipping* is however not always to be practised behind the friendly shade of bushes or trees; but on the contrary, the angler is often forced to content himself with the bank he stands on, to which he should creep on his hands and knees. In some cases, it is true, he may procure the shelter of a hurdle interwoven with boughs, or he may adopt some similar artifice; but many cases must occur, where he can trust to concealment only by prostration, or stooping low. In such situations Mr. Salter directs, that "as much line be drawn out as will just let the baited hook reach the surface of the water; then, with the top of the rod a little raised, keep the bait in motion just over and upon the surface, by gently raising and lowering the top part of the rod, and drawing it to and fro; and if you see several fish, cautiously guide your bait to the largest; play it a little, an inch or two above the water, by gently shaking the rod; then let it drop just before the fish."

3940. *When a fish has well taken the bait strike smartly*, and to prevent its floundering from scaring away the remainder, it is advisable, if the tackle will allow of it, that the fish be immediately drawn away, or even lifted out. If the angler be on the top of a high bank, or if his fish be very large, this cannot be done; but he must content himself with guiding it with his rod and line to some distance, and then landing it; which done, he had better try another spot, until the disturbed fish be again reassured. The insect baits used in natural fly-fishing have been individually considered, and their angling uses pointed out in the entomology of angling (p. 1003.), to which we would refer for much other matter connected with the subject.

3941. *Dipping for dace* may be practised with a long fine rod from fourteen to fifteen feet long, with a very fine gut, or rather hair line, a little longer than the rod. Commence with the house and flesh-flies, by using for each a very small hook, as No. 9, 10, or 11., which should be entered in the back between the wings. Three flies, on three hooks, may be used at once, one after the manner of a stretcher on a No. 7. hook, and two others as droppers on hooks, No 8 or 9. During a cloudy day, or on a summer's evening, in broad scowers of rivers, or in mill-tails, at such parts where the water begins to flow smooth, excellent sport may be had. Either of the small ant-flies, black or red, will likewise raise them, particularly in the early part of the day. Dipping for dace is practised throughout the kingdom. The metropolitans pursue it on various scowers of the Thames, at Kew, Richmond, Hampton, Laleham, and Windsor. In the Lea also it is common in many parts of its course, and in the Colne, the Mole, the Wey, &c. &c. In other large rivers, as the Trent, Severn, and Wye, we have taken them in profusion, both by whipping with the artificial, and dipping with the natural fly. It is a little remarkable that dace invariably prefer the dipterous to any other of the insect tribes: in calm weather they contend for the house and flesh-flies; in windy weather they will take the cowdung greedily; while a pair of artificial wings, on a No. 9. hook, with a living gentle for a body, proves to them a killing mode, by either whipping or dipping, morning, noon, or night, and as well in still as in stream.

3942. *Dipping for chub* is a very favourite sport with some anglers, being one of the most killing methods, and by no means an uninteresting one, for this fish is at once wary and yet voracious. A general view of the habits of the chub appears in our chapter on bottom fishing (p. 1054.), where also the dipping baits and the methods of using them are glanced at. Dipping is altogether a summer sport, and is particularly successful in the dawn and evenings of sultry days; but in cloudy weather it may be practised all day long; and under sheltering bushes overhanging an extensive pool, it is not unusual to get an occasional hour or two of admirable sport even in the brightest day, but the morning and evening must be considered as the principal times for the exercise of this method of luring them. Chub inhabit ponds, expansive still waters, and rapid rivers also; but dipping for them answers best in the more retired and deep parts of every water whatever. It is thus that in the pools formed by currents, and bends in our large rivers, as the Thames, Wye, Severn, Trent, &c. &c. this sport is common, and is variously pursued according to circumstances, from the coracle fisher of the Wye to the adept crawling on all fours amid the high grass which skirts the Thames and the Lea banks. The natural fly baits for chub have already been considered in our chapter on bottom angling, and in the entomology of angling likewise, where the value of the humble bee, and the methods of using it as a bait, may be seen, as well as of other of the insect baits adapted to this kind of fishing.

3943. *Beetles, and all the case-winged tribes*, without exception, are great favourites of the chub, which cluster together under bushes waiting their fall, or watch the edges of banks to receive them as they roll down their sides. Among these, cockchaffers have always been considered among their delicacies; these, it is usually recommended to the angler to deprive of their elytra, or wing-cases, before he uses them. But as we know of no method by which these insects get husked or peeled in a state of nature, and in this state we know the fish readily receive them, so we are at a loss to account for the necessity of such mutilation. Beetles, as baits, are carefully hung on a hook, No. 4 or 5., with the belly towards the back of the shank, and the barb hidden under the wings close to the back. Small beetles will allow of two being put on a hook at once. "I have experienced," says Captain Williamson, "that two flies put on the same hook, in such manner as to imitate their junction, at particular seasons, is extremely alluring: this is done by threading the upper fly entirely through its whole length, inserting the hook at its forehead, and bringing it out at its other end. Slip it up on the shank, and let the point enter the second fly at the heart, leaving the lower end unpierced, so that the hook may be completely concealed. Your tackle must be very fine." The wasp-fly (*Allantus*) is also an excellent chub bait; so is the large and hairy fly described among the *Muscidæ* The larger *Tipulæ*, or gaffer-long-legs, are likewise excellent dipping baits. Caterpillars of all kinds, large hairy ones particularly, are good baits. These and other insects used should be collected and kept for the dipper's purpose, as directed among insect baits.

3944 *Grasshoppers* form one of the best dipping baits for chub; and the method of using them is so admirably described by Walton, that although the matter presents no novelty, his manner of telling it will ever remain unique: — "Go to the same hole," the Mentor says, to his Telemachus, "in which I caught my chub, where in most hot days you will find a dozen or twenty chevins floating near the top of the water; get two or three grasshoppers as you go over the meadow, and get secretly behind the tree, and stand as free from motion as is possible; then put a grasshopper on your hook, and let your hook hang a quarter of a yard short of the water, to which end you must rest your rod on some bough of the tree; but it is likely the chubs will sink down towards the bottom of the water at the first shadow of your rod, for a chub is the fearfullest of fishes, and will do so if but a bird flies over him, and makes the least shadow on the water; but they will presently rise up to the top again, and there lie soaring till some shadow affrights them again. I say, when they lie upon the top of the water, look out the best chub, which you, setting yourself in a fit place, may very easily see, and move your rod as softly as a snail moves to that chub you intend to catch; let your bait fall gently upon the water three or four inches before him, and he will infallibly take the bait, and you will be as sure to catch him; for he is one of the leathern mouthed fishes, of which a hook scarce ever loses its hold; and therefore give him enough play before you offer to take him out of the water."

3945. *It has been our practice*, however, to drop the grasshopper on some leaf under which we have heard the chub *smacking*. From the edge of the leaf we have allowed the grasshopper to roll into the water, where it was usually at once taken by some chub at hand. The black slug is mentioned by all anglers from the time of Walton, and on his authority by many who have never tried it. We have used and taken chub with it, but that is all we can say, for we think any other bait preferable. It will serve to vary the practice however, and is to be offered to the fish by cutting it open and exposing the inside, which is white; it is then to be shown to the fish by sinking and drawing.

3946. *The stone-fly*, the green and grey drakes or May-flies, and the moth-like *Phryganeæ*, are admirable dipping baits; and on the expectation of these insects is founded the angler's certainty of meeting with chub wherever willow, alder, and pollard trees skirt the water, under which the fish sail round and round in the evening, or bask during the heats of the day, in readiness to receive all that fall from them on the water.

3947. *Chub may likewise be dipped for* during the whole of warm summer nights when the larger moths are abroad. If the moon shine, the light will be sufficient for the purpose; and if the sky be unclouded, the twilight alone will show two varieties out of three; but on a very sultry, close, and lowering night, a dark lantern may be successfully used, by having its transparent side directed to the part where the moth is played by the angler. We have known this kind of fishing very killing, and even to the largest fish; but the angler must rove with his moth, moving gently about, and casting near and afar: every now and then he ought to remain still, and listen to the rising of the chub in other spots, to which he may immediately turn his attention. Should a more than ordinary disturbance be heard, it probably arises from a large trout or grayling, who will dart in the night often half out of the water after the moth, as it flutters over the surface, or rests on some aquatic plant. A jack may be heard occasionally throwing himself headlong after the minnows that line the shallows, or otherwise ingulphing in his jaws some amorous Leander of a frog, who is cleaving with lusty strokes his tiny Hellespont to visit his croaking mistress!

SUBSECT. 1. *Dipping for Trout and Grayling.*

3948. *To trout and grayling* may be applied what we have already said on this method as regards chub. Both trout and grayling are by some persons dipped for at almost all times and all seasons, either with winged insects or with their larvæ; but the principal dipping time for both is when the stone-fly and May-flies are on the water. Use a hook, No. 6 or 7. for trout, and No. 7 or 8. for grayling; but when both are in the same water, choose the smaller sizes for the general sport; as a small hook, in a good hand, will hold a large trout, and a large one is often refused by a grayling. "To bait with either a stone-fly, or a green or gray drake, put two or three on the hook together, which should be carried through the thick part of the fly's body under the wings, with their heads standing different ways; pass your hook through them under the wings, about the middle of the insect's body, and take care that your fingers are always dry when baiting, or you soon kill or spoil your bait." As the season advances, beetles, bees, and large flies of all kinds, may be used with effect. In the evenings and mornings try the *Tipula* or long-legs; and during the night the moths in all their varieties will often prove killing. The fly-minnow is sometimes successful, when trailed, dipped, or cast on the surface of the stream, and proves occasionally so on the still waters and deeps. But in these a gorge minnow is deadliest.

3949. *In reference to these fish, Walton's method ought to be good*, for it has been recommended for more than a century and a half, and quoted by almost a hundred of writers: it certainly also will kill in our days as well as it did in his. "Make a pair of wings of the feather of a landrail, and on the bend of the hook put one or two caddies; the head of the caddis should be kept close to the wings. Angle with a rod about five yards long, the line three, and the hook, No. 2 or 3. Let the bait float down the stream just below the surface, then gently draw it up again a little irregularly by shaking the rod, and if there be a fish in the place, it will be sure to take it. If you use two caddies with the wings, put the hook in at the head and out at the neck of the first, and quite through the other from head to tail. Two brandlings, or small red worms, may be fished with in the same way. Before you send trout on a journey, always have them cleaned and gutted, and let them be laid on their backs, and closely packed in a willow basket with dry straw. Packing in damp grass or rushes is apt to ferment, and therefore liable to spoil the fish." Captain Williamson is warm in his praise of this method of fishing for both trout and grayling, and recommends the angler to provide himself with natural flies and grubs in all their varieties. They may be obtained in the fields, on hedges, and among the garden esculents; among turnips also, and among rape and clover. When any such bait is placed on your hook, shorten your line, and crouching your person, pass your bait, line, and rod, very carefully through the bushes: nor is it always necessary that you actually see the water or the fish; it is enough that you gently feel you have daped or dipped the water therewith; and the ready fish will soon cause a vibration on your wrist which you cannot fail to understand. Nevertheless, be equally cautious even now, and avoid landing your fish on this very spot, but rather lead it some little way off, so that the general mass or congregated body may not be put on their guard by an open display of your manœuvres. Should you find that the soft nature of your baits interferes with your showing them favourably to the fish, dress your hook, which may be No. 3, 4, or 5., with a pair of artificial wings from a red cock's hackle, or even peacock's harl. A strip of fine, light yellow wash leather, wound up from the bend of the hook to the wings, will form a body not unlike a gentle.

Sect. VI. *Fly-fishing for Salmon.*

FLY-FISHING FOR SALMON.

3950. *Salmon fishing has been called the sport of sports*, and to be an expert salmon fisher is yet the feather of distinction in the cap of the accomplished angler. Throwing the fly so effectively as to bring any of the finny tribes to hand, bespeaks dexterity; but to strike, play, and land a lively salmon of fifteen pounds, in an artist-like manner, claims honours for the best piscatory professor. It is true that in by-gone days, when these fish were more abundant, it was more common to take them much heavier with the fly. We ourselves assisted in the gaffing of one of twenty-five pounds and a quarter, taken in the Boyne, about five miles above Drogheda, with a gaudy and coarsely made fly. As the banks were high and steep, the landing the fish was attended with difficulty, but after one or two efforts to fix the gaff it was accomplished, and the prize secured. Being much pleased with the occurrence, we agreed on the spot to purchase it as a present to the regiment we then belonged to, the North Gloucester Militia. Such as remain will recollect the occurrence, as well as the admiration of the visitors at the beauty and the excellence of the fish. We afterwards met at Brecon with two resident fishermen, who had each in his time taken a salmon of equal, and we believe of rather greater weight than this. Under such considerations, we cannot wonder that the older anglers of the present day are heard lamenting both the diminished size and greater scarcity of the salmon now taken by rod and line, as well as the greater difficulty of gaining access to them. Nevertheless there still are salmon to be met with in moderate plenty; nor will any gentleman, with a proper recommendation, find trouble in obtaining permission to exercise his abilities in this way. In the remote parts of Scotland, Ireland, and Wales, there are some open waters, which we shall notice as we proceed, where any one may exercise his art without molestation. Indeed, it is well for the angler that it is so, for there are attractions in fly-fishing generally, but in salmon fly-fishing particularly, that render its pursuit irresistible to many. It is ennobled by its high bearing, and even the difficulties which surround its general and uninterrupted enjoyment, serve but to enhance its value. The *anglemania* here is not the *paradise of fools.* Is it nothing that the sport we advocate is so frequently enjoyed at the foot of a romantic fall, from the bottom of which, ever and anon, the restless salmon makes his leaps from one point to another, in order that when the whole are surmounted, a spawning ground may be obtained? Is it nothing to watch in the pellucid stream below, for the occasional shoot of the silver-sided fish, darting forward to gain the acclivities above, while large and small trout dash here and there in such abundance, that we are in a maze to determine whence the shoals of small fish we see can spring, knowing, as we do, that both the trout and salmon are their devourers. On this and many other subjects that present themselves in these romantic scenes, the contemplative angler may indulge in speculation and deep thought; while the more ardent one may plunge at once *waist deep* into the practice of his art. We will watch him. See, he threw the fly with a masterly hand, and he raised a fish, but he *struck* rather short. Again another; and now, indeed, he has *struck* his prey, which, to all appearance, is a heavy fish. Steady, piscator! keep a tight line to prevent your fish from getting round a rock, cutting your line, or tearing the hook out of his mouth! On the other hand, be equally mindful that the line be not over tightened, or it may snap asunder, and occasion the total loss of the fish! It is well; "you have tired your fish:" now let your friend, with equal dexterity, do his part, which is to watch his opportunity of gaffing him, if large; if not, by insinuating the landing-net under him, so that he may, as it were, rather *drop* into it by accident, than by design or force.

3951. *As some "intelligent" writer advises,* we will however *begin* our discourse from the *beginning.* The salmon rod should be of two kinds, one very strong for taking salmon in large lochs, or in such rivers as are known to be resorted to by the larger fish, and from seventeen to eighteen feet long. It will be sufficient if the other is sixteen feet in length, their strength being also proportionate. A due proportion of the very best reel line, from fifty, sixty, and even seventy yards in length, should in some waters be at hand ready to be let out from a *plain* reel of sufficient circumference, substance, and freedom of play. In this angling, when a heavy fish has been hooked, and probably in as heavy a water also, a multiplying reel would not act, but would rather distract the process by its inefficiency. Where weighty fish are expected, not only employ what may be called by the maker a strong rod, but let the joints next the hand be of extra strength, to bear the exertions of a large fish. The flies used for salmon in every locality require to be considerable in size, and very showy likewise, except in Wales, where rather more sombre colours avail best. An accredited salmon fisher tells us that in Wales the wasp and hornet flies are killing baits, but of course they must be dressed of sufficient *size.* He also mentions in favourable terms for this locality the dragon-flies, which we need not remark must be dressed of sufficient *length.* The Welsh fishers do not dress any of their flies with a superabundance of wing-feather; and Mr. Lascelles says of these flies, as "they have very long bodies, it is frequently better to extend the silk to the upper part of the hook, to make them appear longer than it would otherwise admit. The wings of all should not have too much feather in them, and those of most of them should be of various colours; as for instance, a few fibres of the most close and fine feathers of the cock pheasant's tail; a little blue, purple, yellow, or gaudy colours of foreign birds, and some fibres of the grey feathers of a mallard. In order that the wings may lie flat on the back of the fly when drawn through the water, you should not, in the making, extend them too far apart. The hackles for the legs should be black, red, or dun, or those that are red and black at the root; but the preference is generally given to the feathers from the saddle of the cock, because the fibres are stiffer, and the feather longer, which will enable you to make the body to any fulness you may desire." Even the Welsh salmon, however, are not inapt on occasions to take gaudy flies. At the latter end of the season, when salmon make up the rivers for spawning, the wasp or hornet is then a capital fly. The wings are made from the fine fibres of the cock pheasant's tail; the body of yellow worsted, dyed fine wool, or floss silk ribbed with black and made full, and a large red cock's hackle or saddle feather, black at the roots, wrapped several times under the butt of the wings for legs. This method of making salmon flies is pursued in North Wales, particularly in the Dee, the favourite river in that part of the country. Has its fine gravelly bed any influence in making this fly so killing in this river? This kind of bottom renders the fishing here so great a luxury: but how different the Wye, a river much more rapid and rocky, where you are obliged to wade very far before you can arrive at the best streams; and in doing this you should, if a stranger, be extremely cautious; for one unlucky step might not only plunge you into a profound, but irremediable depth. A salmon sometimes, but not always, runs out much of your line, most commonly when he is struck hard; at times he will lie like a log, dull and stupid, and no prudent effort on your part can determine him to show sport. You must, however, strive to effect this by casting stones to the further side of him, being careful not to let them fall too near, and only endeavouring to move him by disturbing the water; for, should you suddenly alarm him, he may, by an instant jerk, break your tackle into pieces. The deepest and most rapid streams are the best spots in which to try for a salmon; and the more powerful the fish you may be lucky enough to hook, the greater will be your difficulty in killing him; one taken with a fly in Scotland weighed fifty-four pounds and a half, but heavier than this are on record. In South Wales, we will also take this opportunity of observing, some Welsh anglers make use of the bittern's hackle to dress the wings of their salmon flies: according to the account of some tourists, it succeeds well with them, and we also can vouch for the truth of this observation.

3952. *Salmon are less variable in their location than trout.* In some rivers they locate themselves in sandy beds of estuaries, lying one or two or more together, up and down the stream. The leisterer, aware of this, searches them out by torch light (p. 957.) and spears them: this is therefore not the best salmon ground for the fly-fisher; not but that when we have a boat launched, and under the stimulating effects of a mild ripple, the fly dexterously thrown has raised and hooked a heavy fish. In such case, unless your tackle be very strong, be not rash in your endeavours to raise him up; in no case slacken your line, or he may turn short round, and with one stroke of his tail free himself from all restraint. Salmon are concealed frequently in deep gutters worn by the eddy which is forced by a rapid descent; indeed, they shelter themselves thus often; or perhaps it might be equally just to say, they ambush under banks, projecting rocks, &c. to shoot out on the unwary prey which may pass. A large salmon when hooked is more frequently inclined to go down the river; his rush will in all likelihood be very violent: be it so; keep your line moderately tight, and only moderately, for a reason already specified. We remember well to have seen a gentleman, but unknown to us, who, although he seemed to handle his tackle well, and indeed threw a beautiful line, as it is called, yet with single gut he struck, and was playing a very heavy fish, without having either landing net or gaff-hook. We saw that an hour or two would be spent ere he could be landed without some assistance and much manœuvering. We enjoined him to be patient, in which he acquiesced, and suffered the fish to sulkily settle himself in the bed of the river, without disturbance, for ten minutes, as though sulking with his sore mouth, and his incapability of swallowing his prey. A few shakes of the line rather roused him, but it was not until some heavy stones were thrown towards his bed, that he again got him afloat: the captor handled him with much judgment, keeping the line stretched on him, but not sufficiently to allow even his flounderings to disengage it. It was now that the fisher saw in full force his negligence, in having come out without either gaff or landing net; indeed, the landing net could hardly answer his purpose, so much did the banks hang over the water; but after many efforts, our gaff was fastened into his shoulders, and by its means he was, with our assistance, added to that of the angler, safely landed on shore, and a finer fish was never seen: having no means of weighing him but our judgment, we booked him at eighteen pounds.

3953. *Some difference of opinion* exists with regard to the method of throwing the fly in salmon fishing, although some consider that the instructions given for trout angling with the fly will fully apply to salmon fishing also. But be it observed, the fishes are not the same; their habits, their locations, and their food also differ. To deliver a stout salmon fly to such a distance as is frequently necessary, is a very different action to that of offering a trout fly in the true English trout streams. The salmon fisher must begin with a short line, and if without any fly attached, so much the better. The throw must be made not exactly as in trout fishing; but although the effect intended is the same, yet the relative forces employed, and the resistances met with are not the same, no jerkings are allowed: bring the rod with both hands over the shoulder, delivering at the same time the line, and with a forward cast of the arms; for while the line circles behind you is the exact time to let loose the fly. A little practice will insure its soft descent on the water, whereby no cracking of line or snapping off of the fly will occur, although to insure the safety of a full hooked and full dressed salmon fly without snapping off, will require much caution and tact.

3954. *When your salmon is hooked,* by no means touch the line until he is banked; then draw him onwards, but do not touch the line: the best fish are often lost by this inadvertence. If possible, direct his head down the stream, which will exhaust him much sooner than would be done were his head directed up it, as is evident from obvious reasons. The more rapidly therefore that you can hurry him down the stream, the sooner you will expend his strength, and free yourself from the grand danger of landing him, if a heavy fish, while he is yet strong.

SUBSECT. 1. *Worm-fishing for Salmon.*

3955. *Worm-fishing for salmon* is so popular a sport in Scotland, that we must not pass it over: indeed, some very crack Scotch anglers will never use any bait but worms for salmon fishing; nor any thing but salmon's roe in the taking of trout. We need not inform any but the tyro, that worm trolling is practised to most advantage after what is called a fresh; that is, when rain has fallen, and disturbed the waters, at which times worm-fishing often proves very successful. The best worm anglers however make a very considerable distinction between a heavy flow of water and a light fresh. When the water is heavy and discoloured, two lob-worms are often used with success; but even the voracious salmon would be likely to refuse them when the water was clearing, at which time well scoured brandlings would be more likely to attract attention. This difference should therefore be borne in mind, and when the water is in a state between these two extremes, let both varieties be tried. Wading is with difficulty avoided when worm-fishing is practised; but unless the angler knows every part of the river extremely well, he may be plunged into a depth from which he cannot possibly extricate himself. In using the brandling when the water is only slightly discoloured, the angler is not so much obstructed in his vision, but that then with a piked shod staff he can step out, sound his depth, and cast his brandling hither and thither with ease, and frequently with much success. Three or four brandlings or dew-worms of moderate size are not too many on the hook at the same time for salmon-fishing. When a salmon seizes the worms you must not immediately strike, but allow him, giving off line with the hand, to swim off with it to his lair. A sudden shortening and tightening of the line tell when the bait is gorged.

3956. *A Scottish angler of note* advises that in worm-fishing for trout, and we presume for some of the salmon varieties also, we should always fish up instead of down the stream, but which practice Mr. Stoddart, in our opinion, very justly discountenances. We always in worm-fishing either for trout or salmon used a short rod, which we cast before us down the stream, bearing to the right or left as circumstances dictated. Mr. M'Finn, a writer in *Blackwood's Magazine*, directs that in baiting the hook with a worm you should thrust in the point of your hook near the tail, and yet leave the tip bare. *The Scottish Angler*, Mr. Stoddart, in our opinion very justly reprobates this practice, as he does also M'Finn's directions, that in worm-fishing it is better also, and as we think he most judiciously advises, to conceal the hook, and allow the worm to be carried forward by the current; or if the current be strong, to append a few heavy shot to sink the bait in its transit along the bottom of the swim. This may be thought to be somewhat "travelling out of the record;" but when it is considered that worm-fishing both for salmon and trout is much practised in Scotland by very ardent anglers for both these fish, we hope we shall stand excused.

CHAP. XIII.

ENGLISH ANGLING LOCALITIES.

3957. *It has been the custom* in almost all treatises on angling to give a list of rivers, and the fish they yield; but we shall here deviate from the practice, considering it inexpedient to swell our pages with matter easily accessible elsewhere, to the exclusion of information not every where to be met with. If any general list of English fishing localities be wanted, Mr. Hofland's elegant work on angling generally can supply it. Mr. Salter also is a very excellent Mentor as regards the localities on the Thames and the Lea particularly. But this omission deserves more "honour in the breach than in the observance," for, as we have observed above, so wide a range would deprive our readers of much matter that we consider more interesting because less known. For instance, if we transported the reader to what are termed the Lakes, we think it very probable that we should introduce him to scenes so novel and so interesting, that although we have twice visited them, we should be delighted to do so again.

3958. *In making a tour*, the principal *object* of the tourist should be defined. If, for instance, he be enamoured of scenery, and can handle the pencil, let him resort to the lakes of Cumberland, where, though the sport to the angler is not so great as is yielded by the rivers Eden, Derwent, and Petterell, the deficiency in this respect is amply compensated for by the grandeur and sublimity of the surrounding scenery. In the twofold character of artist and angler, Mr. Hofland is worthy of all imitation, for not only are his sketches of nature admirably made, but his success as an angler indisputable. We are well pleased with his account of the little river Petterell, a tributary of the Eden, near Carlisle. We have ourselves taken trout there in abundance, but it was not with a fly of wren's tail and grouse hackle, as Mr. Hofland recommends. Our most killing fly was an odd compound, a dark grey feather for wings over a cowdung-fly body, dark legs, and two moderate whisks. We were led to the trial of such a bait made on the spot, from seeing the trout rise to a fly of this sort, which we endeavoured to imitate, particularly when a breeze sprung up with passing clouds. But this by the way. We need not tell the reader that he will find that rare fish, the char, in Ullswater, Buttermere, and Crummock Water. We may add, that were there nothing to see in this country but Ullswater, it would itself repay any one, with the leisure and the taste to appreciate its beauties, for the trouble of a visit. We must also recommend him to possess himself of its mimic representation, which graces p. 272 of Mr. Hofland's *British Angler*.

3959. *We need hardly inform the reader* that students are wont to retire to Keswick in some numbers during the Vacations, and we can well imagine that the beauties and the grandeur of the scenes around them must deeply impress their minds with veneration for their Great Maker. The study of Nature's works aright will utterly destroy all approach to atheism. Had Tom Paine, as he is familiarly called, been a student of Nature, his infidelity might have vanished as snow before the sun. Skiddaw is one of the lions of this romantic country, and fatiguing as the ascent is, the pain is converted into pleasure by the grandeur of the almost boundless expanse spread before the eye. We may hint to the angler who may venture up this ascent the propriety of taking a gun with him to secure a dotterel, the feathers of that bird being in extreme request in fly-fishing in the Derwent Water. Brassenthwaite Water, Crummock Water, and Buttermere, are all objects of great interest to the angling tourist, and no less so to the sketcher. Passing over many less distinguished localities, we come to Dovedale, a romantic spot, rendered almost sacred by Walton's religious effusions when sojourning there, and graced by his anglings with his friend Cotton. In veneration for these worthies we took a sketch of the house of the latter, which, with two other local scenes, appears in Major's edition of *Walton*. We walked over every part of the old domain, and as may be supposed took particular notice of *Walton's dormitory* when he visited Cotton, and we brought back with us a portion of the mantelpiece of the "Fishing-house," a relic which we still retain. We are glad to say that grayling are still in tolerable plenty in the Dove.

3960. *Northumberland* has ever been the resort of those who inherit the angling mania, and the Southrons and the Scotch both crowd to the Coquet to tempt the trout. Indeed, not only the common herd of anglers, but many of the most remarkable characters among them, may be seen in Coquet Dale. "The grand fault," says an eminent contributor to *Blackwood's Magazine*, "of fly-fishing of this district, and Coquet Dale in particular, is the propensity to an exclusive preference of the *streams*. This, no doubt, arises chiefly from their abundance and beauty; and also from the circumstance of the trout of the Coquet being for the most part only of middling size, which description of fish is generally to be found in the greatest numbers in the streams; but an accomplished pool-fisher will find his account in exercising his art here. Large fish, though comparatively a little rare, are yet to be had in every part of this river, and especially in the neighbourhood of that remarkable rocky pass, the Thrum at Rothbury, where trout from eighteen to twenty-four inches long have frequently been taken. In the vicinity of lakes, where large fish are common, the native angler, in a certain degree, despises the river trout, and fishes pools rather than streams, with a view to size and not to number." (Fortunate, that angling tastes differ, and *some* streams remain unwhipped!) "During a day's fishing in the river St. John, I observed," says our author, "that my guide, Hewetson of Keswick (whom, by the bye, I would recommend to all Lakers as an excellent piscatory cicerone), was exclusively intent upon the "dubs," as he called them. A good fisher, he mostly fishes up the stream, pitching the minnow with a long line, with a lightness of fall quite unusual, and keeping out of sight of his game with unequalled management. Upon this method of fishing we shall have something to add hereafter. Every minnow fisher has a favourite arrangement of tackle, and infinite are the combinations of hooks, from two even up to eight. My friend, I believe, prefers simplicity; and for the deeps uses only a single long shanked hook. The barb is brought out at the *head* of the minnow, the hook being inserted about the middle, and part of the shank left untied to steady the tail, which covers it. This method may certainly be good, inasmuch as the trout always dashes at the head of the bait. A good deal of time however must be given. It was now getting towards four o'clock, and the aspect of the day had changed materially. A fresh breeze from the west 'curled' the faces of the pools at intervals; the small fly left off 'flirting and rising;' the sun became shadowed with passing clouds, and we marked one or two large fish take the water-fly decidedly. The Coquet is, what is here not unhappily termed, a 'petted water,' the 'season' generally coming on and going off with most capricious suddenness. The sport, however, now commenced in a way I have not often seen—at least, not so often as I could have wished. Whether on pool or stream, whenever a puff of wind blew, success became absolute certainty."

3961. *Our angling recollections of Derbyshire* are so many and pleasant, that it would be ungrateful to omit mentioning the river Wye at Bakewell, and the Derwent at Baslow, near Chesterfield, or the confluence of *both* streams at Rowsley. These places are now so easily reached by railway, that an angling tour to them, or to the Dove, near Dovedale, is rendered delightfully easy. The courtesy of the people of Derbyshire to angling visitors, and the numerous pleasant country inns, where permission is obtained to angle in the neighbouring well-stored stream, contribute to make this county the Paradise of the Fly-fisher. The flies and tackle must be of the finest, and at Bakewell particularly, as the waters are very clear in the summer months. The frequency of the *grayling* in these waters makes them more attractive to the angler as autumn approaches. But the *scenery* of the Peak can *never* be out of season! Yorkshire, too, shines pre-eminent in estimation, especially for its trout fishing. We recommend the tourist who meditates a visit to Scarborough or Harrogate, to take his rods and flies with him, as he will every where around find occasion to use them. The Driffield also should not go untried, and although the river Hull is in itself a sluggish weedy stream, yielding only pike and coarse fish, yet we have seen good trout in its feeders, particularly in the Driffield Beck. In this neighbourhood do not forget to buy, as a book of reference, a small but meritorious little work, known as the *Driffield Angler*. Hornsey Mere in this vicinity is a preserved water, but if permission be got to try it, it will be found to yield pike and perch in abundance. The Derwent also should be visited, and likewise the Aye, which is near at hand. The intellectual angler will not fail, when in this locality, to visit the Cave of Kirkdale, between Kirby Moorside and Helmsley, where Professor Buckland made so many interesting discoveries of the bones of animals not supposed to have been indigenous to England.

3962. *Rothbury with the river Coquet*, the Aire, and the Wharfe, as excellent trout rivers, should likewise engage the attention. We ourselves resided in this neighbourhood, and can safely recommend them to the notice of the angler. The Tyne is much poached, or it would be an excellent trout river: a few salmon are, however, even yet taken in it occasionally near Tynemouth. The rivers of the East and West Ridings of Yorkshire will amply repay the angler for his trouble in visiting them. But in his excursions to these localities, he must not suppose that we promise that all his high expectations will be realised. Trout and salmon are now both comparatively scarce, having been so much pursued both by sportsmen and poachers; indeed, it is not often now that a trout is to be met with that exceeds five pounds. The best are usually found either at the tail of a stream or at the union of two disjointed portions of it, and at the eddying of little falls. In the day the large trout are cautious of coming abroad. At night they are employed in chasing the minnows in the scowers as well as in the rapids.

SECT. I. *Irish Angling Localities.*

3963. *We will commence with Killarney's three beautiful lakes,* which, among other fish, present salmon, and though they are neither so large nor so plentiful as formerly, they are even yet very interesting to the angling tourist. Brown trout are to be met with in these lakes also, which in shape are short and thick: there are likewise white and sea trout in great numbers. The salmon here are said to be shy, but may nevertheless be taken sometimes with a plain fly dressed with dark turkey wings, and at others with a gaudy Limerick fly. To put a stop to the impositions practised on visitors by the native fishermen, Lord Kenmare used to supply the gentlemen anglers with boats; nevertheless, what with the boat's crew and their entertainment, it is always an expensive trip. It is remarkable that the large fish and those in the adjacent waters will seldom take any bait but by the troll. Lough and river Carra, about thirty miles from Killarney, also yield salmon and brown trout. Waterville river, thirty-six miles from Killarney, is a good salmon one, and its lake one of the best in the world for fine sea-trout. There are salmon in it also. The Kerry Blackwater is a good salmon river. The trout and salmon of the Kerry waters are not partial to gaudy flies. They like brown and fiery brown bodies best, with turkey and mallard wings.

3964. *Blackwater river*, near Lismore, county Cork, deserves notice for its salmon fishery, which is the property of the Duke of Devonshire, and although it is subjected to the vast takings of the fishermen, who rent the privilege, as we are told, for 750*l.* a year, it nevertheless supplies very good sport to the angler. The river Suir formerly presented excellent fishing likewise, and in consequence its banks were much frequented with anglers; but the business of the mills proving unfavourable to the breeding of both trout and salmon, this fine river is now little frequented. The Anno however, a small tributary of the Suir, occasionally affords excellent sport; but the finny tribes here are, it is said, so singularly capricious, that after rising freely to a fly, or taking with avidity any other bait, they suddenly leave off, and resist every temptation. The tourist in this excursion will probably visit Limerick and fish the Shannon, the salmon of which are the finest and largest in the empire. The salmon of no other river take such large and gaudy flies as the Shannon salmon. In spring the flies must be tied on the largest sized hooks, and their wings should invariably consist of twelve very large golden pheasant toppings, and the bodies of several joints of gaudy colours, pig's hair, and hackles, the whole ribbed with silver or gold tinsel. In giving at the end of our treatise on fishing a list of the best salmon rivers, we shall describe one or two standard salmon Shannon flies.

3965. *Lough Derg*, which gives rise to the noble Shannon, cannot fail to excite the attention of the angling tourist. The Lough itself is full of pike and perch. Here also the gillaroo trout is met with, which has been noticed by Sir Humphry Davy, and by us also in a former page: but it would appear that it is not always to be found; and a traveller, who was at the same time an ardent angler, tells us, that he found it equally scarce at Lough's Mask, Conn, and Melvin. Pike and perch, however, abound in these vicinities, and in Lough Derg they are taken by a method not very congenial to the taste of the best anglers. A long line or lines trailed behind the boat are baited, one with a small trout, and, if there be two, the second with a gudgeon. In this way many perch and pike are caught, and the average weight of the pike so taken is seven pounds. Bream are said not to be met with in Ireland, which is certainly erroneous, as we have witnessed. A tourist, on whose information we can rely, informs us also that he has taken many at Broadford, a few miles from Limerick: he likewise noticed the increase of roach in the lakes of Rossroe and Fenloo in the county of Clare; which, as these lakes are not infested with pike, have multiplied so fast as to threaten the annihilation of the trout. The lake Inchiquin in this part of Ireland, however, amply atones for this deficiency in trout; for here they really teem, in spite of the numbers taken with a dark blue fly and a red palmer, which are, we believe, standard favourites here. A prized dropper likewise is here in use, known as the rush-fly; it has a reddish body and variegated wings, as those of the snipe, rail, &c. The Lough Tadann, a few miles distant, is also celebrated for the numbers and size of its pike; when we were in that neighbourhood two had been lately taken, one of which weighed twenty-seven pounds, and the other nine pounds and a half, which must be considered good sport.

3966. *The Costello on the Galway coast* is lauded by a tourist, from whom we have gleaned much with regard to a portion of Ireland with which we are unacquainted. By him we are told that the late Sir Robert Staples built himself a house on the banks of this river, purposely to enjoy the sport it afforded; and that he employed as many as ten watchers to guard the water from poaching. Our informant basketed forty-three white trout at one fishing; sometimes a fish was taken by each fly of the two used, and the next day he killed twenty others, weighing together upwards of forty pounds. The river Erne also is one of the most celebrated salmon rivers of this quarter; it carries off the water from Lough Erne, the largest lake in Ireland, and abundantly supplied with salmon. The fishery here was a few years ago leased to Dr. Shiel, who was liberally inclined to give permission to fish in it. The interesting angling tourist we have before mentioned hooked one here which weighed seventeen pounds; and on the same day he took another which showed an hour's play before he could be landed, and, when brought to scale, weighed twenty-seven pounds and a half, which beats by more than two pounds the weight of the one we have elsewhere mentioned (p. 1189.). Our fortunate piscator besides these landed two others of heavy weights. The river Erne, in the neighbourhood of Ballyshannon, county Donegal, is as famous as ever. We shall by and by give a few of the standard pattern flies for it. Dr. Shiel, or some member of his family, still has the fishery, and no gentleman possessing a proper recommendation will be refused permission to angle fairly for salmon in it.

3967. *Pass we on to Lake Inchiquin*, where there are red and white trouts, and pike also of large size. The flies for the former, we are told, are of medium size, having red or brown fur bodies with gold twist, and the wings of rail and partridge mixed. A dropper called the rush-fly is used. The fishing tourist, while in this vicinity, will probably visit the Dargle, which Mr. Hofland has so faithfully portrayed; and if so, he may there recreate himself with viewing the bold granitic coast, and the vast waters of Lough Corrib, which escape through a channel that divides Galway town. The waters here yield vast quantities of salmon, and a long mill-wall offers a favourite stand for fishers, permission to angle being usually granted on application. Should the tourist wend his way towards Sligo, he will meet Lough Conn, which is an extensive sheet of water ten miles in length and of considerable breadth, offering a vast fishing expanse. Ballyshannon, we must repeat, presents the angler with excellent sport in salmon fishing: this is in fact the case with the whole of Connemara and the adjacent districts, all the loughs and rivers here being amply stored with salmon and trout in most of their varieties. At Ballina, the *Angler in Ireland* tells us it is almost the universal custom to fish for salmon with two small flies tied on a single gut; nor are such variations uncommon also in other Irish localities. A bright speck in this rude though romantic part of Ireland is Delphi, a sporting lodge of the Marquis of Sligo. Lough Duloch (the black lake) is also a point worthy of the fisher's attention, exhibiting as it does romantic scenery, and, what perhaps may be more to his taste, furnishing plenty of salmon and sea-trout. The monstrous ridges and peaks which here present vast assemblages of mimic state, and jut out in rude figures, are worthy of admiration. Ben Bane, as one of them, is said to be 2396 feet above the level of the sea.

3968. *The fish of Galway* literally teem in the waters, which occupy a vast chain of lakes penetrating the mountains, so that the angler can here never draw a blank, provided satiety does not cloy. The weirs however, in some parts of Ireland, obstruct the passage of the fish: in Lough Schrub, nevertheless, this is not the case; and here the white trout are plentiful, but rise best, as we are told, to a black rough-headed fly with dark wings. Lough Luggen also yields trout, the taking of which is not fettered with any particular drawbacks. Connaught and Munster likewise abound in lakes and rivers well worthy of a visit from the angler. In the neighbourhood of the Giants' Causeway, and in Lough Neagh and its vicinities, salmon and trout in all their varieties are abundant.

3969. *That the lakes of Killarney* are prolific of interest, we hardly need to repeat; but our limits will not permit us to offer any detailed description of their beauties; nor indeed is it necessary here; for although the beauty and grandeur of these scenes remain to the tourist, the attractions to the angler have long ceased. Salmon, it is true, still pass up the waters, but the numbers are few and their size is limited. The means of transit from thence to the London market have been so increased, and the stake-nets are so constantly at work, that few escape, and consequently few breed here. We believe also that the salmon are not themselves in such plenty as formerly. This scarcity is complained of throughout Ireland, this land of lakes and streams as we may call it. There are however in all the rivers and loughs brown trout in plenty, some short and thick, others long and lanky. The sea-trout yields excellent sport; but in all the rivers the period of arrival differs somewhat: the greater number, however, come about May and June. In the Lakes of Killarney, it is said, there are no white trout, though they are so numerous in other localities; but this we doubt. Departing hence, let us now transport our views northward towards Connaught, glancing only at Loughs Corrib and Mask; the former famed for its salmon and trout, and the latter for its perch and chub. Here, as the traveller reaches the heights of the mountains, the roaring of the Atlantic meets his ears, and the fishing eagle may occasionally be seen perched on the rocky acclivities; while below it is not uncommon to mark the track of the otter and at the water's edge the relicts of some of his victims. In these wilds all animated Nature presents one scene of carnage and destruction, over which, however, the reflecting angler must feel himself bound to preside, for *he* destroys for pleasure, *they* for want. As we pursue our fishing tour into Fermanagh, inspecting the large loughs which here present themselves, we learn that they all teem with salmon in their several varieties, and with trout also. Tourists, however, are not as frequently met with in Connaught as in Clare, Galway, and divers parts of Munster; consequently, although there is no lack of fish, yet the facilities of angling travel are, as we suppose, lessened: we therefore would recommend the tourist, after having wetted his line in these more northerly points of the island, and having visited the fine expanse of Lough Neagh in Leinster, to pass down its canal to Newry and Dundalk, and thence along the banks of the Boyne, so famed for the battles which have been fought in its vicinity, and the noble salmon which make their way up its waters, as displayed at p. 1189. We are aware that we have done little justice to the fisheries of this fine country, and to its general sporting aspect; but, as we have already observed, we have been compelled to restrain our inclination to enlarge by reflecting on our necessarily prescribed limits.

3970. *As regards the flies in use in Ireland* for the capture of the various members of the salmon family, there are many set patterns. We shall give a few of the best modern ones, and for the best Irish rivers. — *For the Shannon.* No. 1. First size for high spring-water, orange silk tag, fur tag of a darker shade laid next; tail, golden pheasant topping; body, half light orange, half blue silk, broad silver tinsel and gold twist laid together, a lightish blue hackle, stripped on one side, over body, jay under shoulder, yellow head (seal's fur dyed yellow); wing, ten or twelve long toppings, yellow feather from the blue macaw, sprigs of the leading tail feather of the golden pheasant, white feather from the cock's neck dyed party-coloured, red, yellow, and blue. Hook No. 1., or the largest sized Dublin hook, made by Phillips of Ellis's Quay, the best maker now in Ireland. The wings of all Shannon flies are much the same, the golden pheasant toppings in abundance being indispensable. — No. 2. Body, half orange, half black floss silk or pig's wool, blue silk tag, plain ginger hackle over body, silver tinsel and gold twist, jay under shoulder and blue fur head. Wing and hook as before.—No. 3. Pomona green floss silk body, blood red hackle over body, orange tag, jay under shoulder, blue head. Wing and hook as before.—No. 4. This fly is called "the goldfinch." It is a low water or summer Shannon fly, and is dressed thus:—Body, black floss silk, gold colour tag; tail, small topping, gold tinsel, and ginger hackle over body; wings, eight or nine moderate-sized toppings, red macaw feelers; head, light puce fur. Hook, No. 6. and 7. — *Flies for the Blackwater, co. Cork.* No. 1. Body, donkey's fur, from the butt of the ear, or hedgehog's fur, silver tinsel, gold colour tag; tail, a few sprigs of mallard and golden pheasant breast feather; a darker shade than tag under the shoulder; blue or blood-red head; wings, mixed fibres of golden pheasant tail and breast feathers, mallard and brown turkey, blue and yellow macaw feelers. Hook, No. 5. and 6. (Phillips's).—No. 2. Body, light brown olive fur, and hackle same colour, gold tinsel; tail same as before, golden yellow tag, a very short joint of grey fur between the tag and olive fur; wings, as before, jay hackle outside them; blue or deep red head. Hooks, as before.—No. 3. Body, dark or puce silk, over which a golden olive hackle and silver tinsel; jay round the shoulder outside the wings, which must be rather gaudy, and have a few fibres of red parrot feather; tag, golden yellow silk, above which two turns of black ostrich harl; head also of black ostrich. Hooks as before. These three last flies kill well at Lismore when the water is high. In summer time they must be dressed two sizes smaller. A fly called "the blue jay" is a standard fly in all Irish rivers; it is dressed thus:—Body, light blue silk and gold tinsel, orange tag and black ostrich harl near it; tail, sprigs of golden pheasant breast feather, mallard, and light blue macaw; blue jay hackle over body; blood red hackle at the shoulder; wings, golden pheasant breast feather, mallard, light blue macaw and kingsfisher; black ostrich head. Hook, No. 6, 7, and 8. This fly, dressed on a No. 8. hook, with orange instead of blue silk for body, will kill in summer and autumn. We have used it successfully in the rivers of the highlands of Scotland. — *Flies for the river Lee, co. Cork.* No. 1. Body, first joint, next the tail, blue seal's fur, and blue hackle; second joint, grey fur and grey hackle; third and shortest joint, strong fiery brown fur and hackle; silver twist over body; orange silk tag; tail, fibres of blue and red macaw, golden pheasant breast feathers, mallard and blue peacock; wings of the same feathers of the tail, but full; black ostrich head. Hook, No. 5. and 6. for high water; for low water, No. 8. and 9. This I consider a general fly for all salmon rivers.—No. 2. A grouse hackle and bright golden olive one, struck together over an orange silk body, gold tinsel, jay under the wings, which must be the same as before, as well as tail, tag, head, and hooks. — *Flies for the Erne, near Ballyshannon.* No. 1. Body, yellow or gold colour floss silk, ribbed with gold tinsel; ostrich tag; tail, two toppings; legs, a bright yellow hackle from the tail up; a little yellow green mohair, and blue jay at the shoulder; wings, two toppings mixed with neck feathers, a few fibres of ibis, bustard, mallard, Argus pheasant, peacock wing, yellow macaw, and a little green parrot; ostrich head. Hook, No. 8. and 9. This fly will kill well in the river Shin, Sutherlandshire, at low water.—No. 2. Body, orange floss silk, ribbed with gold tinsel; a deep orange hackle, struck over the body, and blue jay at shoulder; wings, two cock of the rock's feathers, with a topping at each side of them, to extend a little longer over the bend of the hook; fibres of bustard, and jungle cock, and macaw for feelers; tail, a rather long topping; head, black ostrich, with a little blue mohair beneath it. Hooks as before.—No. 3. Body, lilac floss silk, with a tag of orange mohair, gold twist; blue dun hackle for legs; blue jay and kingsfisher at shoulder; wings, a few fibres of mallard, mixed with toppings; neck and tail, feathers of the golden pheasant, and also a few fibres of the cock of the rock, bustard, guinea-hen, and green parrot; feelers, blue and yellow macaw. Hook, No. 8. and 9. —*Flies for the river Bann, co. Antrim.* No. 1. Body, claret pig's hair; yellow tag, gold tinsel, and a dark claret hackle struck up from the tail, and an orange hackle round the shoulder; wings, brown mallard, mixed with bustard, golden pheasant toppings, and neck and tail feathers; blue macaw feelers, topping for tail, black ostrich head. Hook, No. 8. and 9. It may be here remarked that the flies for the north of Ireland are gaudier than those for the rivers of the south.—No. 2. Body, fiery brown pig's hair, gold tinsel and amber hackle, topping for tail; wings, mallard, and neck feathers of the golden pheasant, mixed with bustard and guinea-hen; two fibres of blue and yellow macaw for feelers; yellow hackle at the head, finished off with black ostrich harl. Hooks same size as before. —*Flies for the river Bush.* No. 1. Body, orange mohair, and claret hackle over gold tinsel; wings, brown mallard; tail, fibres of the same feather; black ostrich head. Hook, No. 7, 8, and 9. The wings of this fly being very plain, it will kill well in the Kerry waters, in which gaudy flies are not generally successful. No. 2. Body, amber mohair, gold tinsel, amber or fiery brown hackle; tail, a small topping; wings, brown mallard, and turkey tail of the same colour, mixed with a few fibres of golden pheasant neck feathers, a fibre of blue macaw on each side for feelers; black ostrich head. Hook, No. 8. and 9. This is a good general fly at low water. — *Flies for the Blackwater,* a good salmon river, co. Kerry. No. 1. A blue and blood red hackle over a golden olive body, gold tinsel, and orange silk tag; wings, mallard; golden pheasant breast feather, blue macaw and red parrot; head, black ostrich. Hook, No. 8. and 9. This fly will be taken in nearly all the Kerry waters.—No. 2. Golden brown body and hackle; gold colour fur for tag and under the shoulder; wings, &c. as before. — *Flies for the river Waterville, co. Kerry.* No. 1. Body, fiery brown mohair, same coloured hackle, gold twist, and a small claret hackle round the shoulder; wings, mallard; blue macaw and golden pheasant neck feathers, neatly mixed; tail, mallard; red ibis, blue macaw, and golden neck feather, a fibre or two of each, and black ostrich head. Hook, No. 8. The wings of this fly will answer for all those suited to the Waterville river.—No. 2. Body, claret pig's hair, ribbed with gold; black cock's hackle, yellow tag, and a roll of black ostrich harl above it; yellow pig's hair at shoulder; wings, tail, head, and hook as before. The rivers and lakes of Kerry abound with sea-trout, for which the best general flies are those with dark fiery brown bodies, blue and fiery brown hackles, gold coloured necks, and plain wings of brown mallard, turkey, grouse, or landrail's wing feather. The two last feathers suit small flies best. We are indebted for most of the information in this section (3970) to *A Handbook of Angling,* published by Longman & Co.

SECT. II. *Scottish Fishing Localities.*

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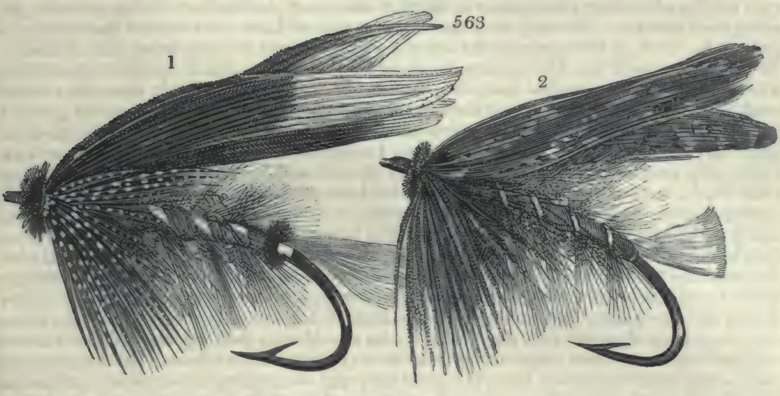

SCOTCH FLIES.

3971. *In this kind of flood and mountain* it is difficult to decide at what point our notice should begin. It is almost from end to end one vast picture of grandeur and sublimity; and as for lochs, where shall we see any to compare with those of Scotland? The mighty Loch Lomond, already depicted in p. 532., at once presents a vast watery expanse so grateful to the angler, and the Alpine heights which crown it greet the tourist, together forming the pride and boast of the Scottish nation. Indeed, the whole country presents a curious *mélange* of picturesque beauty and savage grandeur. In proof of its grand features, let us regard some of the mountain torrents pouring down their liquid contents into the abyss below, as portrayed in the fall of Fyers (see *fig.* 564. p. 1200.), which, if not equal in the quantity of water to some others, amply compensates the deficiency by its picturesque effect. In this locality is found a chain of lakes from Loch Ness to Loch Lochy, all of which yield the angler ample remuneration for the trouble he takes to reach it. The western coast, opposite to Skye's indented inlets, will interest him from the herring fishery carried on in their bosom; but, be it remembered, it is in Loch Fyne that the finest herrings are taken. The angler in Scotland can never draw a blank: it must, however, be confessed, that the best accommodations are to be found in the neighbourhood of the Lowland rivers, which are also most accessible. But the enterprising angler, nevertheless, will not refrain from visiting the Orkneys, and *their* well-stored streams. Among other interesting matters, he may have opportunities of prosecuting the inquiries which have led Shaw, keeper to the Duke of Buccleuch, to more than suspect that the salmon and parr are identical species. Here, too, he may revel in the delights of taking all the salmon varieties in general, as well as trout of enormous dimensions and weight. He may commence early in March; but, be it observed, his principal sport will be in the taking, for the fish are then by no means well conditioned. Mr. Thomas Tod Stoddart, in his admirable little tome, *The Art of Angling in Scotland,* thus observes on Scottish travel: — "Before April, let the angler proceed upwards, by Melrose to Clovenford and Innerleithen. Should the weather be cold, he must not expect first-rate trouting; but if warm, and what is termed in England the March-brown fly be upon the water, depend upon it he will cram his creel. St. Mary's Loch is nine or ten miles from Innerleithen, and at all events a trip should be taken in that direction. Yarrow and Meggat are both good streams, and in the loch itself the spring trout rises freely at a large dark fly. The angler may also try the Lyne and Biggar waters, and crossing over to Clyde, fish down to Hamilton. A salmon or two may be killed in this month below Stonebyres. Indeed, it may be asserted, that Scotland affords to bait fishers of every kind excellent sport. Where the fish are small, they nevertheless prove lively, and ready takers, and they dispute their capture with an interesting resistance which enhances the sport in the eyes of the angling zealot. The waters here being mostly clear require the use of fine tackle; the gut particularly should be transparent, and the hook as small and fine as is consistent with the strength of the fish the angler is likely to be engaged with. When the fish bite readily, and very quickly seize the bait, as is sometimes the case, be prepared to use a line rather shorter than the rod. This plan is particularly recommended for fishing in the becks and burns, where the *stroke*, to be effective, must be as quickly made as the bite itself; avoid, however, in this quick striking with a short line in the Scottish waters, never to do it against the stream.

3972. " *From Hamilton proceed to Glasgow*, and descend by the daily steamer to Inverary. Loch Awe is only nine miles distant from that town. There are plenty of inns in its neighbourhood; at Dalmally, Cladish, Portsmachon, and other places. To fish Loch Awe properly a boat will be required, which can be obtained for a reasonable hire. The boatman employed is always competent to instruct one upon the likeliest feeding grounds, and other such matters. We may state that the best part of Loch Awe for the *Salmo ferox*, or great lake trout, is above where the river Awe issues, and directly below Ben Cruachan. In the rivers Awe and Urchy, salmon abound; the former also is much frequented by whitlings. When inclined to leave this district, the angler may strike in upon the military road, passing Queen's House, and leading through Glencoe. This he may do by proceeding up Loch Etive, and the stream which falls into it, or in many other ways; but none certainly so romantic as this. Glencoe leads to Lochleven, an arm of the sea, and from it the angler may proceed to Fort William either by Ballychulish, or by a mountain path through Glen Nevis, well worthy to be preferred by the lover of Nature. At Fort William let him try the Lochy: he will find it, if slightly swollen, a first-rate river, especially for sea trout and grilses. From thence he should proceed to Inverness by steamer, and cross over about July to Sutherland, or else strike aside to Loch Laggan, by the course of the Spean. He will find near the head of the loch a good inn, and a good fellow of a landlord. Dalwhinnie, above Loch Ericht, and Dalnacardoch on the Garry, a short distance from Loch Garry, should also be visited; and passing through Blair Athol, the angler may follow the stream down to where it meets with the Tummel; he should then hold up the Vale of Tummel to Loch Tummel, where large strong trout are to be taken from a boat. At Kinloch Rannoch, a few miles farther on, there is a good inn; and the angling on some parts of the loch is reckoned excellent, as it also is on the Gawin and Loch Lydoch. Crossing the hills to the south, a forenoon's walk will bring him to Glen Lyon, down which he should angle his way to Fortingall, and in the evening settle himself at Kenmore on Taymouth. Instead, however, of following the course of the Tay towards Dunkeld, we would advise him to proceed by the loch side to Killin, from thence to Earn Head, the Trosachs, Lochs Chon and Ard, Stirling, and Edinburgh. Should he, however, prefer visiting Sutherland and Ross-shire by Inverness, we would leave him to select his own route, aware that he can scarcely go amiss after good sport among the numerous waters of these northern districts. The Shin, Inver, Kirkaig, and others, are all, in their season, good salmon rivers, and the *Salmo ferox* inhabits many of the large reservoirs and lochs." (*Scottish Angler*, p. 126.)

3973. *In Sutherland the gillaroo* and the great lake trout also are found throughout its principal waters, particularly its lakes. In the river Brora, proceeding from Loch Brora, first-rate fishing is to be met with, and in all the feeders of the loch, all of which own the Duke of Sutherland as their lord, who, be it observed, well deserves such a patrimony, for he encourages travellers to visit his waters, and never refuses leave to angle fairly in any of them. The rivers of Ross-shire, Mr. Stoddart tells us, are good, and that pike and salmon are to be found there. Loch Marre is the great lion here, both for its size and the quantity of fish it yields. The river Spey, as a salmon river, we are told, has no equal in Scotland; so prolific is it, that it produced a revenue of six thousand a year to the Duke of Gordon. Banffshire offers numerous trouting streams and resting-places for the angler, as at Tomantoul on the Avon. Keith on the Isla, and Huntley on the Deveron, furnish good fishing, and also good accommodation for the angler. In Aberdeenshire, we believe that the best fishing stations are at Ballater on the Dee, about forty miles from Aberdeen, and Castleton of Braemar. Forfarshire boasts of the North and South Esks, which yield salmon in plenty. Trout and perch are also found in abundance in some of its waters. So prolific of fish is Scotland generally, that what has been already stated will equally apply to Stirlingshire, &c. and to Lanarkshire also. But as we must draw to a close, we would again strongly recommend the reader interested in the angling of this famed country to consult *The Book of the Salmon*, by Ephemera, recently published by the Messrs. Longman, in which the best rivers in Scotland are described, and the best flies for them.

3974. *Scottish waters*, be it observed, are not only to be admired for the grandeur of their appearance, but they deserve notice for the diversity of character they present. It has been very justly remarked, that three kinds of streams exist in Scotland, and as we observed in a former page, we might indeed notice the Moorburn as a fourth. The first stream owns only rocky waters, where the bottom has but little soil or channel; at least there is usually but a thin layer of the latter. Here such trout as would please the angler never abound; indeed, one might fish a season through and not meet with such a one as is depicted in p. 1075., for here the nature of the rocky banks is not such as to yield any living matter; worms, frogs, leeches, water insects, and frequently even minnows, will not abound in these vicinities. Where foliage, on the contrary, overhangs the banks, food is often found from the insects bred there, and which afford a variable treat to the fish during their several changes. Nevertheless, it is true that such streams as those we have noted harbour salmon, grilses, and the varieties known as the white and sea trout; but river trout of any considerable size are not usually to be met with there. A *second* variety of river which presents itself in Scotland, is one that is considered very favourable to the growth and increase of trout: it is one less rocky, with banks less precipitous, and presenting some herbage, or rather bushes, as harbours for insects and covers for the fish; in fact, whenever any Scotch stream approaches to the appearance of an English river, it may be vouched for as containing trout. The Tweed among the Scotch rivers approaches nearer to this character than any other, and in fact it may, in common with all that resemble it, be considered as of the *third* kind of stream hinted at, and sought for by every angling tourist.

3975. *The lochs of Scotland* form another grand feature in the aspect of this country. Mr. Stoddart, in his emphatic language, writes, " Lochs! we love the word lochs, as applied to those hill-girdled expanses which decorate our native land. Lake is too tame a designation — a shallow epithet. It has nothing to do with mountains and precipices, heaths and forests. Beautiful it may be, very beautiful! Winandermere is very beautiful; Derwent Water is very beautiful; Buttermere, Ullswater, and Coniston are very beautiful; nay, in truth, they are of a higher nature than beautiful; for these all lie among hills — but not Scottish hills; not the unplanted places — dwellings of the storm and the eagle!" (p. 9.) Mr. Stoddart's description of the vast changes which these expanses have undergone within the last five centuries is also very interesting; but for information on this point we would refer the reader to his small but comprehensive tome. From his account, it appears that forests then grew where nought is now seen but bare turf. They have yielded to the axe, and the ploughshare has furrowed over the cheek of nature as she now appears. This admirer of lochs particularises Loch Lomond, Loch Awe, Loch Laggan, Loch Ericht, Loch Rannoch, Loch Tay, Loch Earn, Loch Lubnaig, Loch Archray, Loch Ketturin. He almost rapturously applauds St. Mary's Loch, which he calls his best beloved " Yarrow's nurse," and continues to say of it, " a sheet of water, not sublime, nor yet singularly beautiful, for it wants a fringe of wood and a few islets, and those swans described by Wordsworth so poetically, but strangers ever, unless in the depth of a severe winter, to its bright and quiet surface; yet, truly, there is a winning something about it — a 'pastoral grace,' that lures the angler's heart. Nor does it want substance for pastime; well adapted to the nature of trout, it is altogether a favourite resort. Yet the fish caught therein, if we except one variety, are in general soft and flabby, not agreeable to the taste, and very far from equalling those found in the Highland lochs, or in Loch Leven." (p. 10.) These different lochs all produce trout, but as we have long suspected, and long stated as our opinion, such trout are found in all of them to vary in form, in colour, and in marking. Even their habits have submitted to changes wrought by locality, some taking most readily the fish bait by trolling, and others by mimic representations of insects on the wing. Of these variations from one standard type, Mr. Stoddart observes, " we have detected more than a dozen sorts after one day's angling, all perfectly distinct, and individually marked. In St. Mary's Loch this fact is particularly observable; but we shall devote more appropriately to this matter a succeeding chapter, although induced at present to show some reason why and how this variety is produced. Streams, by their continual motion, cause in many parts a sameness at the bottom, or channel, upon which account the different feeding grounds are alike as to what they yield; hence the trout are naturally similar, and of one appearance; still, as often is the case, especially in slow waters, if there be a variety of feeding grounds, you find also a proportionate variety of trout. It seldom happens, however, that above three or four sorts are to be discovered in the same river, owing, as we have just mentioned, to the general sameness of the channel. Lochs, on the other hand, which are stationary and unimpaired below, contain, according to their extent and the soil which they cover, so many beds or feeding grounds of a separate nature, producing each its variety of fish. The streams and burns also which they receive are often widely different, some rocky, some passing through rich and fertile valleys, others over black and barren moors, to which (their native abodes) fish, when swept into a huge reservoir, are unable to return, being bewildered as to the entrance back, or more possibly induced to remain in a wider though foreign sphere."

3976. *In trolling for large fish*, as is practised in Loch Awe and other places, a boat is necessary; nor do its other inconveniences detract from the pleasure of such delicious sport: nevertheless, in ordinary angling, we love the pedestrian style; we practise not the art cavalierly, or on horseback, as some boast of. Let the tourist attend to this, and never indulge in the abomination alluded to. " And now to speak of a crime in loch fishing lately introduced. Let every true angler abjure the *lath*; it is a poacher's instrument, killing no doubt, alarmingly fatal; so is lime in a narrow brook, or vitriol, or the pock-net. Pretty means these for an honest angler to use! ingenious and crafty contrivances wherewith to while away time and make merriment! This engine of death and torture, appropriately called the Otter by James Hogg, of Altrive, on account of the similarity of its movements to those of that animal, consists of a thinnish board of wood, thirty inches long by ten broad, shaped in the form of a boat, and loaded below with a narrow strip of sheet lead. This, when placed lengthwise in water, presents an upright position, sinking to within a short distance of its top. Near the extremities of this board are several holes, to which is attached a cross band or string of cord, as in a paper kite. In fact, the whole apparatus is upon the same principle. To this cross band the line is fastened, generally made of oiled silk, and very strong: along it, at regular intervals, are hung a score or two of fly-hooks of all sizes, also baited minnow tackles, the whole occupying about thirty yards. More line is however necessary, wound upon a pirn, and held off the ground by a remarkably stout rod. Two individuals are required to bring this engine into action; one of them holds the rod, and the other, at the distance of the line occupied by the tackle, sets the board adrift. The former, who stands also at the margin to windward, then moves forward. The lath sails out, carrying with it the whole train of flies, until almost at right angles with the fisher. Still he proceeds; this singular apparatus, which it requires some degree of skill to manage, still keeping pace with him. When one fish is hooked, there is no necessity for drawing it ashore immediately. The grand point is to drag in a dozen at a time, although, from the length of "durance vile," many are taken in a dying and exhausted state; others escape with injured mouths, to become thin, sickly, and shy, and of these not a few expire in this condition. Such is angling by means of the lath, a system in practice on the English lakes, and gradually creeping northwards to the extinction of that nobler and more gentlemanly craft, which gives precedence to skill and talent over brutality and ignorance. The harm of this system is incalculable, far beyond even its profits; for the fish thereby injured and deteriorated greatly exceed the number taken.

3977. *Among the picturesque scenes which Scotland affords*, we may notice the Falls of Fyers (*fig.* 564.); and though the volume of water which it pours forth is much exceeded by some others, few, if any, exhibit more masculine features, or more of that amenity, mixed with grandeur, which the lover of Nature delights to feast his eyes on. Drummond Castle in Perthshire we would also hold forth to the admiration of the intelligent tourist. The antiquities and the historical records of the more ancient, and the beauties of the modern castle, it would be foreign to our purpose to dwell on; but we may state that, situated as it is, on the rocks of Torliem, the last and least of the Grampians, it overlooks an endless variety of wood and water, forming a panoramic view of indescribable beauty in the Vale of Earn. The lake which greets the eye of the angler is inexhaustible in the numbers of its fine trout, &c. &c. and being supplied with water from innumerable burns and rills, its products are of the most varied character. Thus trout here are of different kinds: two sorts are particularly to be noted, the yellow and the silvery coloured; both however show excellent sport, and both prove to be delicious eating. Perch also are found here in abundance. Loch Earn we have already mentioned, but we believe we have not noticed the clear and romantic river known also as the Earn, which issues from it. Until this river was pestered with salmon nets, weirs, and cruibs, which are baskets set to catch these fish, it was one of the most prolific waters, and one of the most pleasant for the angler that could be named. We are however told, that in spite of these impediments, a fly known as the red cock will, even at the present time, insure the taking of salmon and trout here in abundance. In some of these vicinities, but particularly in Loch Maben, if we mistake not, the fish known as the vendace is to be met with. This delicate and singular species of the genus *Coregonus* (*Coregonus Willughbii*, of Yarrell) has been stated to be confined to the above mentioned water; and although the very high authority of Sir William Jardine

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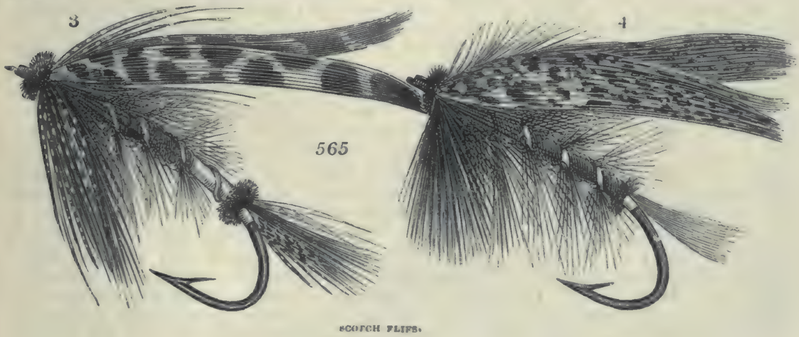
FALLS OF FYERS.

ought not to be lightly called in question, yet we have heard of its being met with by more than one tourist in other Scottish waters.

3978. *Dumfries-shire* has been treated of as an angling locality of note by the respected and accredited angler, Peter M'Finn, who in *Blackwood's Magazine* for 1819 thus discourses: — " The rivers, or rather the burns, in the upper district of Dumfriesshire, and on the boundary of the adjoining counties, are all intimately known to the author of this article. Most of them afford excellent sport to the angler; and it may not be unacceptable to some of your readers to particularise a few of the most remarkable. The Cairn, which descends from the western side of the county, and which joins the Cluden, is an excellent fishing stream, though rather embarrassed by wood, and above Monchire it branches out into a variety of tributary streams, every one of which is stored with fish. Upon the main stream stands the seat of the Earls of Glencairn, a family long renowned in Scottish story. Next to these, passing eastward along the north of Nithsdale, comes the Shinnel, which makes its way along a most romantic glen, which on account of the beautiful woods which cover it, is inaccessible to the line for a great way up. The Scar succeeds, a larger stream, and when fished up Glenwhargan and the adjacent glens, is eminently fitted for successful sport. The scenery is most bold and striking, and on the hazel scrags, which cover the steeps for a considerable way upwards, there are excellent nuts, of which the people in the neighbourhood make a yearly traffic. 'The Grey Glede of Glenwhargan Craig' is celebrated over all the country in the sports and rhymes of infancy. Eagles were seen in this direction not many years ago. Passing still farther east, we meet with the Nith, more famed for the purity of its waters, the rapidity of its current, and the adjacent castle of Drumlanrigg, than for trouting. There is, however, excellent salmon-fishing, were one allowed to practise it. The tributaries of this river, the Carron and the Cample, are too much fished to be at all remarkable; yet towards the *heads* there is, particularly in wet weather, often the very best amusement. From the elevated and picturesque hills of Queensberry, streams pour into the Annan and the Ae in every direction, and all these are excellent. The Cassee, which passes by the hospitable residence of Mr. Harkness (Mitchelslacks), to whom and to whose moonlight whiskey I hereby introduce all fishers, was once unrivalled, but is now sadly poached with 'pike nets and lime.' The Brawn is still a lovely stream, and after a flood in particular it affords unequalled bait fishing. I have often killed seventeen or eighteen dozen here in the course of a few hours. But transcendantly the best is, in my opinion, after all, the Dar, one of the heads of the Clyde; and were it not for the proximity of Leadshill, from which the locusts of destruction descend in the shape of miners, it would scarcely ever fail to fill the fisher's basket with trout of the most beautiful spots and proportion. There are some *lesser* names, such as the Unkle-Shang and Windy Hills, and the Ring-Straenburn, the last of which, in particular, deserves to be mentioned. There is in the neighbourhood of this stream, and amidst the wilds of Garven Muir, a well, which is also called Ring-Straenburn, and a number of stones erected around a large stone in the middle is called the King's Chair. As this is the line of communication betwixt Nithsdale and Annandale, it is probable that one of our Scottish monarchs, in passing down upon the Johnstones and the Jardines of Annandale, may have pursued this route. What says Walter Scott about this? With the burns on the east of the Annan I am not so well acquainted, and shall leave the character of these to be given by one who has spent a sporting season at Moffat Wells. I may just observe, in addition, that all the burns I have mentioned on the east of the Nith are entirely freed from the teasing embarrassment of wood, in which respect they have manifest advantage over them in the west."

3979. *The salmon flies*, already alluded to as being particularly effective in taking the fish in some Scottish waters, are four in number. Nos. 1. and 2. head this article (see p. 1197.), and are thus described with Nos. 3. and 4., as in *fig. 565.*: —



SCOTCH FLIES.

3980. No. 1. *Wing.* — Black turkey with a white tip. *Body.* — Blue mohair or pig's wool, with silver platting. *Legs.* — Black hackle shouldered with a guinea-fowl's feather. *Head and tip.* — Black ostrich feather. *Tail.* — Scarlet mohair. Hook, large.

3981. No. 2. *Wing.* — Brown mottled turkey feather. *Body.* — Crimson mohair or pig's wool, gold twist around it. *Legs.* — Blood red hackle, shouldered full. *Head.* — Peacock feather of a brilliant hue. *Tail.* — Orange mohair. Hook, middle size.

3982. No. 3. *Wing.* — Argus pheasant. *Body.* — Crimson mohair at the head, green mohair in the middle, and yellow silk at the tail, with silver twist. *Legs.* — Blood red hackle shouldered with guineafowl's feather. *Head and tip.* — Peacock feather. *Tail.* — Brown mallard feather, teal ditto, peacock ditto, and dyed yellow mallard feather. Hook, middle size.

3983. No. 4. *Wing.* — Brown mottled turkey feather. *Body.* — Green mohair, or pig's wool platted with silver. *Legs.* — Dun hackle. *Head and tip.* — Black ostrich. *Tail.* — Scarlet mohair. Hook, middle size.

The four preceding flies are peculiarly adapted for the Tweed, but if dressed very small, they may be used with success in most rivers when the waters are low and clear. The following is a list of standard flies for the best rivers in Scotland: — *For the Shin.* No. 1. Body, orange floss silk; yellow tag, tipped with silver twist; above it black ostrich and red tag, to be ribbed with silver tinsel and gold twist; grouse hackle at the centre of the body; teal hackle under shoulder; wings, two neck-feathers of the golden pheasant, over which a mixture of brown and black, and white spotted turkey tail-feather, and brown mallard; feelers, blue and yellow macaw; yellow mohair over the roots of the wing, and black ostrich head; tail, a gold pheasant topping. Hook, No. 4. At this size the fly is a large one, fit for the Shin in the spring. For the summer, it should be made on hooks three sizes smaller, and will kill best morning and evening. — No. 2. Body, yellow mohair, to be ribbed with gold twist and black hackle; tag, yellow floss silk tipped with gold; tail, a small topping; blue jay at shoulder; wings, brown turkey or kite tail-feather, mixed with golden pheasant tail and neck feathers, guinea hen and teal, and a topping bending over the whole; blue and yellow mohair feelers, and blue mohair head. Hook, No. 6. This is a deadly Sutherlandshire fly, particularly for the Shin and Laxford. For the latter river the following is a standard fly: Body, orange floss silk; tag, yellow green ditto, tipped with silver twist, and ribbed with gold tinsel; black hackle, and claret silk under shoulder, round which blue jay hackle; wings, mixture of the fibres of the following feathers, — black and white turkey tail, bustard, red macaw, guinea-hen, golden pheasant neck-feather, and silver pheasant tail-feather; feelers, blue and yellow macaw; head, black ostrich; tail, a few fibres of mallard, dyed yellow. Hook, No. 6. and 7. — *Flies for the river Inver.* No. 1. Body, pale green floss silk; orange tag, tipped with silver twist, and between them black ostrich tag; to be ribbed with gold tinsel, silver twist, and grouse hackle; wings, brown spotted turkey tail feather, peacock's wing, red ibis, teal, guinea-hen, and silver pheasant dyed yellow; blue and yellow macaw feelers, and black head; small topping for tail. Hook, No. 6. and 7. The above fly kills well on the Shin, so does the following Laxford fly: No. 2. Body, black floss silk; crimson tag, tipped with black ostrich and gold twist, ribbed with silver tinsel and twist, and black hackle; crimson mohair, picked out under the wings, which are to be a mixture of cream-spotted turkey-tail, guinea-hen, and teal feathers, golden pheasant neck and tail feathers, and two or three fibres of bustard; black ostrich head, and topping for tail. Hooks as before. — *A standard fly for the Brora.* Body, a mixture of blue, green, and yellow pig's hair; silver tinsel and black hackle; wings, peacock wing-feather; tail, red mohair. Hook, No. 7. and 8. — *Flies for the Oikel.* Body, brick-brown floss silk; red and black ostrich tags, tipped with silver twist, to be ribbed with silver tinsel and gold twist; grouse hackle full under the wings, which are to be of the following fibres: spotted turkey dyed yellow, brown turkey, teal, blue macaw, red ibis, and bustard; black ostrich head, and topping for tail. Hook, No. 7. and 8. This and the following fly will kill in the river Carsely. — No. 2. Body, yellow brown pig's wool; tag, black ostrich, tipped with gold twist; to be ribbed with gold twist; black red hackle over body, and blue mohair picked out at the shoulder; wings, a golden pheasant neck feather; alongside of it an entire teal's feather, brown spotted turkey, guinea-hen, and wood-duck fibres; black ostrich head, and topping for tail. Hook, No. 8. and 9. — *Standard fly for the Carron.* Body, black floss silk; orange tag; ostrich and silver tip, to be ribbed with silver tinsel and gold twist; grouse hackle over body; wings, turkey feather dyed yellow, mallard, silver pheasant tail, guinea-hen, teal, and Argus pheasant fibres; black head, and small topping for tail. Hook, No. 8. and 9. — *A standard fly for the river Kirkaig.* Body, puce mohair; tag, red ditto, tipped with gold twist; to be ribbed with silver tinsel; black hackle, and a bit of orange mohair picked out at the shoulder; wings, bittern and guinea-hen; black head, and orange mohair tail. Hook, No 8. The Naver is a good river, and the Oikel flies kill best in it, as they do in the Bozzy and Halladale. All the above rivers are either in Sutherlandshire, or divide it from Ross-shire, in which last county the best rivers are the Allapool, Dionard, Rennie, and Cannard. Small moderately gaudy flies kill best in them. — *Flies for the river Spey.* No. 1. Body, claret floss silk, with some deep yellow-brown pig's hair towards the wings; orange and black ostrich tag, tipped with silver twist; to be ribbed with silver tinsel and gold twist; claret hackle from tail to shoulder, and round the latter grouse hackle; wings, two golden pheasant neck feathers, and a topping; light brown spotted turkey tail, and Argus pheasant, guinea-hen, and golden pheasant tail-feathers; over the roots of the wings yellow mohair; black ostrich head, and topping for tail. Hook, No. 3. This is a large-sized spring fly.—No. 2. Body, puce floss silk, to be ribbed with gold and silver tinsel and yellow green silk thread, and over all one of the pendant feathers of a brown cock's tail; wings to lie along the back of the hook, and they are to be made of the fibres of a large brown spotted turkey tail-feather. Hook very long in the shank, like a mackerel hook. This is the old standard Spey spring fly. The following is a standard *Spey fly for May and June.* — Body, near the tail, fiery-brown floss silk; towards the head, from the centre of the body, orange floss silk; tag, ostrich tipped with silver twist; the body to be ribbed with silver tinsel and gold twist; orange hackle from tag to wings, under which blue jay hackle; wings, a golden pheasant neck-feather, and fibres of Argus pheasant, and slightly spotted cream-coloured turkey tail-feathers. Hook, No. 4 and 5. For many of the above excellent patterns, we are indebted to *The Book of the Salmon*, mentioned before.

SECT. III. *Angling in Wales.*

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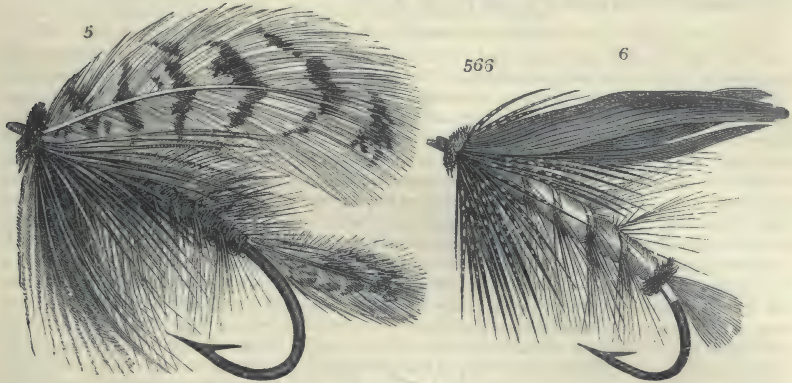

WELSH FLIES.

3984. *For the reputation of South Wales*, it may be supposed the author feels some interest, when he states, that in the vast!! city of St. David's he passed some of his earliest days with his grandfather, who was the acting canon-residentiary of the cathedral there. If St. David's city remain as it then was, it has little to recommend it: it owned one grammar-school, and the elevated school-room was built directly over a brawling rivulet which emptied itself into the sea; and full well we remember the schoolmaster angling with a worm out of the school-room window, which amused his pupils more than it instructed them; and his success laid the foundation for a love of the gentle craft that has never left us. To indulge ourselves with a *fancied* retrospect, we will conceive ourselves as a second time leaving the old hall of our fathers where we had in later times been, and thence pursuing the waters of our route, we first met with the *ever winding Towey*, as it is called, with its more diminutive neighbour, the Neath, of which we shall say something anon. The Towey was at that time a fruitful stream, and even at the present day it yields some trout, sewin, and salmon; but, as we are told, it is now the subject of many poaching practices: as it is, however, situated in a cheap and romantic spot, it still has its charms. Its neighbours also, the Tivy and the Neath, are occasionally visited by tourists; and where cheap sport and kind attention are objects, they are to be met with in most of the borderings of this principality. Of the Usk we have to remark, that not much sport can now be insured in it until the angler arrives at Crickhowel. A later tourist, however, recommends that we should make a halt in the Vale of Llangruny, at a village situated between Abergavenny and Crickhowel; and from what we remember to have heard on a later visit to South Wales, the recommendation is good, as in point of scenery it is surpassed by few parts in this principality. The trout met with here, though not large, are very numerous, and no impediment is offered to the fly-angling tourist in the prosecution of his sport. The lake Lynbann, situated on the top of Vann Hill, is full of trout, which escape all common poaching from the difficulty of reaching the ascent, and the still greater difficulty of bringing away the spoil with the unhallowed gear used in the plunder. Glamorganshire presents also its Neath, a river yielding a crystal stream, in which salmon and sea trout, here known as sewin, are taken.

3985. *There are besides the Usk, the Wye and the Tivy.* A tourist observes on these rivers, that the finished artist would give the preference to the first, which we shall again notice. The salmon fisher nevertheless would not be disappointed in the second, and all who throw the long line would find amusement in the last. The trout in the Usk are the best and soonest in season; and, as far as our own experience goes, this informant is right. Some twelve or fourteen years ago we made a tour into Wales purposely to fish its waters, both north and south; but unfortunately, at Brecon, we were confined so long to our room by a severe cold, that our fishing excursion was frustrated. From the accounts given us, we were not led to believe that the Usk in this locality was very well stored with fish; but in some other spots, which we shall notice, the accounts differ. The pools in the Tivy are very generally allowed to be well stocked. The Ithon, though lauded by some writers, does not appear, from Captain Medwin's account given of it in the *Angler in Wales*, vol. i., to be so favourable for sport as some waters already mentioned. According to him it appears to yield chub principally, with a few eels; but we know some other persons who praise it for its properties as a trout stream. The Wye is devious in its course, but beautiful and romantic throughout. Here are trout, sewin, and salmon in plenty; and the Bengalen pool is particularly recommended for trial by most of the fishermen here. It is a vast deep excavation worn through rocks of considerable elevation, but it nevertheless wants the sublimity which both Dove-dale and the Dargle exhibit. It is rich in trout, but its water is apt to be black and muddy from the peat mosses it runs through. At Dovey the coracle may be seen in use, and consequently the poacher's work thrives there.

Subsect. 1. *Angling in North Wales.*

3986. *The angling in this part of the principality is also good;* indeed, many consider it superior to that in the southern district. North Wales is reached by any of the ordinary conveyances which take passengers to Shrewsbury, from whence there used not a great many years ago to be a Welsh coach to Barmouth; from which place some anglers hasten to the river Verniew, where fine trout will try the goodness of the angler's tackle. Here also that universal tempter of the Welsh trout, the coch-a-bonddu, often ridiculously written cock-a-bound, and sometimes cock-a-bundy, is in universal use, and a never failing taker. Merionethshire also now offers its lakes to the notice of the angler, and principally that of Tal-y-llyn. The active angler will not trouble himself to travel round the vast base of Cader-Idris to gain this famed water, but will rather cross the heights by mountain paths before him. A walk of three hours will bring him in sight of this beautiful and extensive lake, where a boat is usually stationed ready for the occupation of any piscatory adventurer who will hire the accustomed attendants, which a few years ago consisted of a man and his wife. We wish here to place on record the liberality of Colonel Vaughan, to whom this lake belonged when we visited it. All hail to his memory! for his noble spirit led him to purchase this aqueous expanse *purposely* to oblige his friends and the public with gratuitous sport. As a proof of its prolific properties, it may be stated that twenty-five brace of fine trout were taken here by one gentleman in two days. The Severn should also command our attention: it is one of our noblest rivers, and throughout its whole course offers a remunerating return for the exertions of the enterprising angler. The salmon taken here are thought to be little, if at all, inferior to those which used to be caught in the Thames, and which then sold at seven shillings a pound, while those of the Severn seldom bring more than eighteen-pence per pound. Indeed we have observed, that it has been a matter of surprise to many that the waters of the principality throughout are not better known, and more frequently visited: here few, if any, restrictions to the sport of the tourist are found; but from the borders of Monmouthshire in the south, to the river Dee in the north, the whole is open before him, without let or hindrance. The inns also, however humble, are usually clean and quiet places of resort; and if luxuries are not numerous, molestations are unknown; and the accommodations, though not first-rate, will serve the purpose of all but the most fastidious. We particularly remember having been most comfortably accommodated at Tan-y-Bwlch, a spot which exhibits Nature as the lover of Nature delights to view her, simple and without disguise. It is in this vicinity that the elevated chain of mountains is found, over which the lofty Snowdon (*fig.* 567.) rears his head, and seems to frown in awful grandeur on all below. When we saw it, there was no snow to be observed on its summit; but we were told that it was not uncommon for hardy tourists who explored its Alpine heights to find snow even in June and July thereon. The observer of Nature in these wanderings, as he moves farther from the busy haunts of man, is often struck with wonder at the quantity and the variety of living matter he has left behind him, compared with what he

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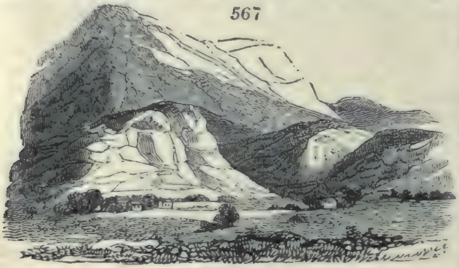


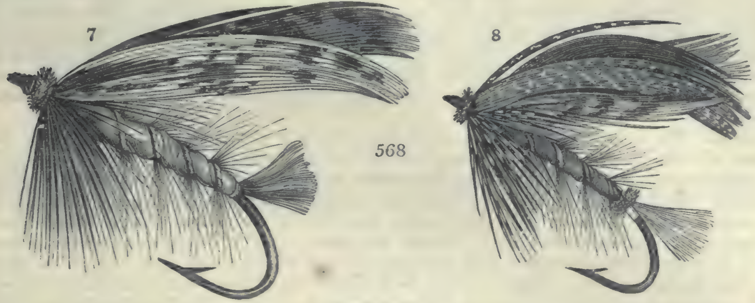
SNOWDON.

now sees around him: cultivation of the soil and increase of temperature and of food consequent on the close congregating of the inhabitants of populous districts, all tend to encourage animal life: beasts, fowls, and insects, all teem in numbers where human beings thus congregate. Hence it is, that instead of a vast variety of flies, a late fisher in Wales noting their scarcity tells us, that with two sorts of flies only the angler may, and actually does, fish with success throughout the whole season. This account is true, though only in a limited degree, as our lists will show. Some assert that there exist as standards two flies only, which are the coch-y-bonddu or red rough, and the smoky blue, so called; and both are killing flies it is true, one in the early, and the other in the latter part of the season; nevertheless, other native flies are represented and successfully used; indeed, the same gentleman recommends on his own experience a cinnamon-fly, the wings formed from the wing feather of the landrail, and the body of the sandy-coloured fur from a hare's neck, to be mixed, however, with orange-coloured mohair for the body. Mr. Hofland, however, who was known as an excellent angler, and as we believe a writer of undoubted veracity, notices the flies used in these localities in the spring season as the March-brown, the stone-fly, Edmondson's Welsh fly so called, the hare's ear dun, and the iron-blue. He also tells his readers, and the truth of which we can vouch for from our own experience, that the trout in this part of Wales are in general, but more particularly in the Usk, much earlier in season than in most other Welsh districts. The following account of this part of the principality, derived in some measure from Mr. Hofland, as well as from our own observations, may not prove uninteresting to the reader who has not travelled thus far.

3987. *The seat of Sir Watkin Williams Wynn, Bart.*, with its surrounding beauties and works of art, all worthy of admiration, will be first mentioned. Among these, after the seat itself, which forms the pride and boast of that part of the country, we would particularise as an object of great interest the grand aqueduct, Pont-y-Cyssyllte, which stretches itself across the river Dee; and, as may be supposed, the views from this elevated work of art are equally grand and interesting; — Langollen's Vale and its pretty town, which, it will be remembered, furnished an enchanting retreat to some ladies not more respected for their station and talents than for their private worth and charitable dispositions. In this district also is situated the well known inn at Capel Curig: a more interesting spot to the tourist in general, and to the angler in particular, can hardly be imagined than here presents itself. We venture to assert that very few if any places in the whole principality can equal this in point of interest. In this vicinity is seen a fine waterfall, known as Rhaider-y-wennol, and which it is most probable has already been passed by most tourists in their approach to Capel Curig. All around this locality is one expanse of grandeur and interest; and we have but to step into the garden of the inn to view the lakes Lynn Elider Vaur, and Lynn-Cerig or Curig, with their surrounding scenery. In this vicinity the river Llugwy also is found, in which the visitors to this neighbourhood procure excellent fishing; indeed, at the time we allude to, the sport was particularly good, the water being in the best order, in consequence of a recent fall of rain. Mr. Hofland, who was there at that time, by the use of a favourite fly, named by his friends "Hofland's fancy," killed in one day, as we understand, thirty brace of trout of a small size. The next day the same gentleman took, not from the river, but from the lake above alluded to, twenty-five brace of trout, weighing from half a pound to a pound. These, he informs us, were taken with the March-brown, the grouse hackle, the alder-fly, and the celebrated Welsh favourite called the coch-a-bonddu. This singular name of the most killing fly known here, literally meaning *red with a black end*, has as many diversified methods both of spelling and pronouncing it as there are letters employed in its composition; it, however, deserves all the encomiums passed on it. The Welsh rivers, prolific as they are generally as fishing stations, are nevertheless taxed by Mr. Lascelles with a certain degree of uncertainty, which he appears to find a difficulty in accounting for. We believe he is not altogether wrong; but it is only in degree, as every other fisher in the principality well knows. He says it is remarkable that after a flood, when the water is clearing, and of an ale colour, the fish in the Usk will rise famously, while that those in the Wye and Irvon, at not more than twenty miles' distance, under similar circumstances, will not stir an inch. He, however, suggests, as a reason for this apparent anomaly, that after heavy rains the two latter rivers are impregnated with an overflow of sulphurous water arising from the numerous mineral springs which in their neighbourhood abound, which, being in some degree of a poisonous quality, nauseate the fish. The angling in this vicinity is, however, generally excellent, and the most killing flies are known and well defined. The March-brown of Mr. Hofland, better known here as the cob-fly, is not only noted by Mr. H., but is also mentioned by Mr. Lascelles as a fly of excellent properties, and one of the best of the season. These flies are then seen in large flights; indeed, at certain times the water appears perfectly alive with them. He, however, very justly observes, and we ourselves can bear him out in the assertion, that this fly is a perfect camelion in its aptitude to change its colours, and that a very few days only are sufficient to diversify the appearance of its tribe very much. It is now that the capability of the fisher to dress his own flies becomes of much value to him, and gives him a great advantage over those whose supplies are limited to a certain pattern. This fly is to be dressed, as far as figure goes, with wings nearly upright from the feather of a hen pheasant's wing, and the more dappled the better. A partridge's hackle should be wrapped twice round close under the butt for legs; the body, which is of good size, should be represented by a mixture of yellow camlet and the light brown fur of a hare's ear, about equal quantities of each on a hook (No. 6.). "When this fly comes on the water," says Mr. Lascelles, "the fish instantly flock to the head of the stream, and scarce one out of a thousand escapes." It will also materially assist the diversion to use three of these flies at the same time, but thus diversified in colour: one should be lightly coloured, a second something sadder, and the third should be the exact colour of the natural fly; for, by throwing these varieties gently up the stream, and allowing your mimics to swim down with the other flies, a fish is more likely to be off his guard. For it must be evident that, under such circumstances of plenty, every effort of skill is often required to lure him into the snare. This fly also will always take the largest fish, and it is as great a favourite on the larger rivers as the green drake is on the smaller ones; so that whenever you observe it coming on, you may be very certain that nothing else will succeed. The trout, however, taken by this writer were, as it appears from his account, not in such good season as from their strength in the water, and their eagerness to take the bait, would have led one to expect; nor did the largest of those taken, although sixteen inches long, weigh much more, he says, than a pound and a half. In the year following that from which this account is dated, we also were at Brecon, and heard of his (Mr. Lascelles') exploits in that vicinity, and exactly the same circumstances of disappointment occurred to ourselves; while, therefore, we laud the Welsh localities, we unhesitatingly affirm that the state of the fish, but of the trout particularly, as regards their sporting properties, is irregular and precarious in some rivers — a circumstance for which, as far as our inquiries reached, no satisfactory reason was given. We would always have every trout we took to exhibit much game in his resistance, as well as much energy in his rush at the bait; and when he is taken and landed, we would have him exhibit a bright coating, a taper head, his gills of the deepest red, and his fore parts broad, full, and firm under handling. We would have his fins shining, and exhibiting at their tips somewhat of a golden hue; then, and then only, we should think our labour well bestowed: nor would we fish longer in any water that did not yield such trout as we have described. Again, no other variety of fish would we trouble ourselves to take for taking's sake; or if we did so amuse ourselves, we would throw them into the water again. Fortunately, however, in almost all rivers of the principality, and amongst almost every variety of fish found there, a certain time at which they reach perfection is known to occur; and fortunately it is so ordered by Nature, that the different varieties of fish do not simultaneously reach that perfection in point of time in any locality; neither do individual fishes of one river come into season at the same time with similar fish of other rivers: hence the angler has only to watch these specialties to be always able to take his pastime at a proper date, shifting his locality, so as to be always ready to catch the fortunate period when the water and the fish combine to bid him welcome. Few rivers here are in perfect order until the middle of April; many not until the latter end of it. The Usk, however, here, and the Driffield in Yorkshire, yield seasoned trout much earlier than this, and the fish taken in both these rivers are superior to most met with. The trout of the Usk are often very large, and always very finely flavoured; but it is necessary that the entomology of this locality be familiar to the angler to insure his success. If he inform himself well with regard to the times of the appearance of the different flies, he may fill his creel daily. It will be in vain to enter on a course of fly-fishing here with the greatest superabundance of flies, all most exquisitely dressed, unless they be the exact representatives of the insects that start into life at their proper seasons. Such only raise the trout, and such only will take them; however, in play they may rise to view them. Every week almost makes a change in the native flies here, as indeed is the case elsewhere, though it be less remarkable; and no representation but that which is a facsimile of the fly on the water will engage a fish to *snap the bait.*

3988. *Pass we on to Machynlleth,* which, if it be reached by the mountain heights, is a task requiring strength and nerve, but which, when accomplished, amply repays the exertions. If the most romantic path be pursued, it leads to a deep chasm, which the river Rhydol has, during a series of passing centuries, worn through the vast mass of rock now separated by the continued washing of a mountain torrent that pours down a turbid and discoloured stream. Across this chasm there is, or at least when we saw it was found, a single plank, emphatically called the *parson's bridge;* but whether so named because it was laid by some patriotic clergyman, or that a notion had arisen that no other individual could pass over it than one who had a very full dependence on Providence, does not appear. The wild beauty of the valley of the Rhydol amply repays all the toil of the pedestrian tourist by the soul-stirring sublimity of the scenes on either side, where woody luxuriant masses occasionally hide the mingled waters of the Rhydol and the Monach, and anon, as their branches recede or spread upward, allow a full sight of the flow. The town of Aberystwyth receives much benefit not only from anglers, but also from parties of both sexes, who arrive there, and proceed to the Devil's Bridge, purposely to sketch the truly romantic scenery which presents itself. Indeed, there is little else to do, for the trout taken here, when compared with those to be met with in the Usk and in numerous circumjacent rivers, are not worthy of attention. Did our limits allow, we would take our reader to the Tivy, a gentle and quiet stream, except when swollen by floods. Here are none of those wondrous exertions made by the salmon in what is known as their leaps, and seen at Newcastle Emlyn, in Carmarthenshire. Here, on the contrary, amenity is the grand feature of the rivers generally, though not universally; but whether of one or the other kind, we now quit them with extreme regret, and with a strong recommendation to every lover of Nature, be he or be he not of the *gentle craft*, to visit and explore the beauties of this quiet though romantic country. It presents no obstacles; it may be visited by those who have more curiosity than cash; and may be explored from end to end for a few shillings a day by a pedestrian, while the more wealthy tourist may solace himself with the opportunity of doing much good among a very deserving race by a moderate addition to the sum.

3989. *A description and representation of some of the Welsh flies used in salmon fishing* must prove acceptable to the angling tourist. We have already introduced cuts of a few esteemed flies used by the Scotch salmon fishers; we now also offer four representatives of the most killing flies used in Wales, observing that two of them head our subject, and that the other two wind it up (*fig.* 568.).



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WELSH FLIES.

3990. No. 1. *Wing.* — Whole feather of the bittern. *Body.* — Blue dun mohair, or wool. *Legs.* — Dun hackle shouldered with a coarse dun feather. *Head.* — Ostrich feather. *Tail.* — Bittern's feather. *Hook.* — Large.

3991. No. 2. *Wing.* — Heron's or kite's feather. *Body.* — Dirty yellow mohair, or wool. *Legs.* — Greyish dun hackle shouldered with guinea-hen. *Head.* — Green peacock's feather. *Tail.* — Scarlet mohair. This fly is sometimes dressed with and sometimes without gold twist, according to the nature of the water for depth, clearness, &c. If deep and at all discoloured the fly cannot be made too conspicuous. *Hook.* — Middle size.

3992. No. 3. *Wing.* — Bittern's feather. *Body.* — Orange mohair, or wool. *Legs.* — Red hackle shouldered with a red and black hackle. *Head.* — Peacock's feather. *Tail.* — Crimson mohair, with or without golden ribbing. *Hook.* — Middle size.

3993. No. 4. *Wing.* — Of a mixture of feather of bittern, brown mallard, teal, and heron. *Body.* — Light olive mohair, or wool. *Legs.* — Ginger hackle shouldered with grouse feather. *Head.* — Peacock's feather. *Tail*, or *whisks.* — Yellow mohair, with or without silver twist. *Hook.* — Moderate size only.

3994. *On the sizes of the hooks* on which salmon flies are dressed it may be remarked, that among many anglers they are known as large, middle, and small, and this distinction is perhaps the best, if conventionally understood, which unfortunately is not the case. Thus in Dublin (Phillips's) the large sized hook is No. 1., the medium size is No. 7., and the small No. 10. In Kendal, on the contrary, the large is No. 16., the middle No. 15., and the small No. 14. In Carlisle the large hook is numbered as 0 0 0, the middle as 0 0, and the small as 0. We must now bid adieu to Wales, a country endeared to us by many, many interesting ties, and numerous vivid remembrances, commencing with our early days, and continued down, by sundry visits and explorations of its varied beauties of scenery, to later times. As to the quality of its sportings, our efforts, although intended to portray them favourably, fail to give them their due colouring. Travellers who do not enter fully into them cannot of course be expected even to do common justice to the sporting character of the localities he visits: thus one Welsh tourist we met with abused Wales, because he could not fish her lakes without putting himself to the expense of hiring a boat to traverse their surface, unreasonably expecting to find that the fish would come to him.

instead of his approaching them. We asked a complainant of this kind, whether he had tried his tackle from the banks in the evening as well as the morning? to which his reply was, that it was too fatiguing to fish all day, evidently unaware that in extensive lakes the fish leave the deeper parts towards the evening, and then may be taken from the banks. In lake fishing in Wales it is particularly necessary to keep this in mind; but we would suggest to any piscatory tourist going there, that at each new locality he visits he should immediately seek the friendly aid of some one of the numerous fishers who practise their art for the benefit of themselves and families. A moderate gratuity will open the heart of such an one, and purchase his best endeavours to make the applicant as well informed as himself: but take care to make him aware you are not going to permanently settle in his locality, for his fears of the consequences may either seal up every avenue to information, or probably the instruction given may do you more harm than good.

3994*a*. *This, the angling portion of our new edition,* would not be complete did we not give a list of the modern local salmon flies used in the Welsh rivers. They are as follow: — No. 1. Body, orange pig's hair; legs, two yellow-dun hackles, struck up from the tail to the shoulder; wings, light brown-yellow turkey tail-feather; tail, a bit of red ibis, and a small widow's crest-feather; head, orange-coloured wool. Hook, No. 3. This fly is only fit for full water, clearing after a flood.—No. 2. Body, turbid orange wool; legs, a dun hackle, dyed the colour of the body; wings, a light, spotted, turkey tail-feather, dyed yellow; tail, red toucan, and brown turkey tail-feather. Hook, No. 5. The two following flies are excellent ones.—No. 3. Body, dark orange worsted, or pig's wool; legs, two dark-dun hackles rolled up from tail to shoulder, round which a yellow-green hackle; wings, dark brown spotted turkey tail-feather; tail, neck feather of the golden pheasant, drawn in short. Hook as before.—No. 4. Body, dark orange wool ribbed with silver twist; legs, two grizzled-dun hackles from tail to shoulder; wings, two body feathers of the bittern; head, green peacock sword feather, one or two fibres of which are to be left hanging from the butt of the wings; tail, short red and blue macaw feathers. Hook, No. 6.

3994*b*. *The four following flies are great favourites in Wales,* and are known there by the name of "fern flies." They are dressed thus:—No. 1. Body, yellow worsted, mixed with a small quantity of light buff; legs, dun cock's hackle; wings, pea-hen's back or rump feather, dyed yellow. Hook, No. 5., and tail crimson worsted.—No. 2. Body, dark buff, or salmon-coloured wool; legs, dun hackle dyed olive; wings, two bittern feathers dyed yellow; tail, mallard dyed yellow. Hook, as before.—No. 3. Body, deep yellow, mixed with a little orange worsted; legs, dun hackle, dyed yellow; tail, grey and yellow dyed mallard feather, mixed; wings and hook, as before.—No. 4. Body and legs a sooty yellow; tail, widow's crest-feather; wings, as before, and hook, No. 6. The feathers for the wings of these fern flies are dyed thus: — Dissolve in a pint of boiling water an ounce of alum; steep in it the feathers for three or four hours. Boil in the same quantity of soft water for half an hour, half an ounce of fustic, and the same quantity of turmeric. Remove the feathers from the alum water, and immerse them in the yellow dye, and they will soon assume the required colour.

3994*c*. *Of late years, large palmers* have been successfully used in Wales for the capture of salmon. The following are the three best patterns: — No. 1. Body, very long, of orange wool, ribbed with gold tinsel; orange tail; two red-dun hackles, struck from the tail to the centre of the body, and two dark blue-dun hackles from that up to the head. The whole to be dressed on two hooks, whipped tightly together, back to back, the barb and bend of the upper hook to project upwards from the centre of the body of the palmer. The hooks to be two number fives or sixes. This palmer should be used in full water after a flood.—No. 2. Body, black ostrich harl and black hackles from tail to head. Hooks, as before. Fit for pools and clear water.—No. 3. Body, light blue-dun wool, over which hackles of the same colour. Hooks, No. 7. Good in clear water towards evening. The above local Welsh flies and palmers are after patterns dressed by Mr. W. Flinn, fishing-tackle maker, of Worcester, and the inventor of the flexible minnow. He has much experience of the rivers of South Wales, and the above are his favourite flies. It is a singular fact, that the great majority of Welsh salmon flies are exceedingly plain, nay, ugly-looking things. It would be quite useless to try them in the Irish or Scotch rivers; and *vice versâ* the gaudy flies of Ireland and Scotland would be useless in Wales.

In conclusion, we exhort the angler to regard the *North*, as the proper *home* of the *Salmonidæ;* and to regard *mountainous* regions, whether Alps or Apennines, as having a similar troutly character. The motto of the flyfisher should be '*Excelsior.*' Up the Mountain burn, even to its source: and away to the farthest Orkneys must he speed if he would enjoy to the full the delights of this charming recreation! And if his aspiring devotion to the sport cannot be satisfied with the grayling of the Peak, nor with the Burn trout of Wales and Scotland, nor even with the salmon-trout of the Orkneys, let him explore the rivers of *Norway* for the salmon, and satisfy the cravings of his spirit with fly-fishing in its lordliest and most imposing aspect!

PART IX.

COCK FIGHTING.

COCKPIT.

3995. *In nothing, perhaps*, is the improved tone of society more strongly marked than in the suppression of the once generally popular sport of cock-fighting. It is only as chroniclers of the past that we retain it in our pages, the legislature having stepped in to abolish what better taste was fast repudiating.

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CHAP. I.

COCK FIGHTING.

3996. *Cock fighting.* "If the rust of time can hallow any sport, that which we are now entering on is in full possession of this precious bedeckment. It is indeed so old, that we hardly know from whence to derive its origin: Asia, however, has the credit of first fostering it, and it seems to have been cultivated by the natives among their earliest games. The first records of China note it. In Persia it was early encouraged, in conjunction with hawking and quail fighting; nor was it to be wondered that, as man became belligerent, he would, in order to extend his conquests, commence his education by observing the offensive and defensive operations of animals, thereby the better to regulate his own. When Themistocles was engaged in warfare with the Persians, he was struck with admiration at the bravery and determination displayed in the battles between the cocks of that people, which was such as to occasion him to exclaim to his admiring army, 'Behold, these do not fight for their household gods, for the monuments of their ancestors, not for glory, not for liberty, nor for the safety of their children, but only because the one will not give way unto the other.' This so encouraged the Grecians, that they fought gallantly, and obtained the victory over the Persians; upon which cock fighting was, by a particular law, ordained to be annually practised by the Athenians. The inhabitants of Delos were great lovers of the sport; and Tanagra, a city of Bœlotia, the Isle of Rhodes, Chalcis in Eubœa, and the country of Media, were famous for their generous and magnanimous race of chickens; and it does appear that they had some peculiar method of preparing the birds for battle. Cock fighting was an institution partly political at Athens, and was continued there for the purpose of improving the seeds of valour in the minds of their youths. But it was afterwards perverted and abused, both there and in other parts of Greece, to a common pastime and amusement, without any moral, political, or religious intention, as it is now followed and practised amongst us." (*Johnson's Sporting Dictionary*, p. 137.) It was a natural transition that this sport should pass from the Greeks to the Romans, who were known to have cultivated cock fightings four hundred and fifty years before the Christian era. How it became introduced into Britain does not appear in detail, but it is enough for us to know that it can be traced back to the twelfth century, although it would seem to have been considered at that time as rather a childish sport. "Every year," says Fitzstephen, "on the morning of Shrove Tuesday, the schoolboys of the city of London bring game-cocks to their masters, and in the fore part of the day, till dinner time, they are permitted to amuse themselves with seeing them fight: the cockpit was the school, and the master the controller and director of the pastime." In the reign of Edward the Third, cock fighting became a fashionable amusement; it was then taken up more seriously than it formerly had been, and the practice extended to grown persons. However, even at that early period, it began to be productive of pernicious consequences, and was therefore prohibited by a public proclamation, in which it was ranked with other idle and unlawful pastimes. But notwithstanding it was thus degraded and discountenanced, it still maintained its popularity; and, in defiance of all temporary opposition, has descended to modern times. Among the additions made by Henry the Eighth to the palace at Whitehall was a cockpit, which indicates his relish for the pastime of cock fighting; and James the First was so partial to this diversion, that he amused himself in seeing it twice a week. Exclusive of the royal cockpit, we are told there was formerly one in Drury-lane, another in Jewin-street, and a third existed in Shoe-lane, if the following story be founded on fact:—"Sir Thomas Jermin, meaning to make himself merry, and gull all the cockers, sent his man to the pit in Shoe-lane, with a hundred pounds and a dunghill cock, neatly cut and trimmed for the battle: the plot being well laid, the fellow got another to throw the cock in, and fight him in Sir Thomas's name, while he betted his hundred pounds against him. The cock was matched, and bearing Sir Thomas's name, had many bets laid upon his head; but after three or four good brushes, he showed a payre of heeles. Every one wondered to see a cock belonging to Sir Thomas cry *craven;* and away came the man, with his money doubled." (*Sports and Pastimes*, p. 248.) Strutt is very severe on the Welsh main, which he justly condemns as an abuse of a sport already sufficiently stigmatised by some. As to Good Queen Bess, as she is sometimes familiarly called, but never as we believe with derision, for if she had her peculiarities she also had her virtues, no true sportsman, at least, will let a dog bark at her, for if she is not stated to have been particularly disposed either to patronise or to check cock fighting, did much better, by leaving her subjects to their own discretion on this point. In all the more active field sportings, which do really become us as a martial and enterprising people, she was a patron and a personal participator. It was in her time that Roger Ascham wrote his well known treatise on the subject; and it was about this period likewise that cockpits were built in Drury-lane, Gray's-inn-lane, and Jewin-street. It has been supposed from the oft-quoted words of Lord Byron,

" It has a strange quick jar upon the ear,
That cocking ———."

that he disapproved of this sport, and that with his accustomed causticity he therefore disparaged it. In early life we were on terms of intimacy with Mrs. Massinberg, of 16. Piccadilly, as the numbers then ran: she was a relative of Lord Byron, and whenever he left college on a visit to London he used to domesticate at her residence, and there we also on several occasions met him, and enjoyed his conversation, which, as might be supposed, led him to remark on the scenes he met with in London; and as our pursuits among animals were well known to him, and much interested his inquiries, so there were none at that time prevalent that his capacious mind did not mention, and make inquiries about. But while we own we never heard him eulogise cocking, we can conscientiously aver we never heard him utter a word against it, although we have a faint remembrance of being told by him that he had on a previous day visited a cockpit, and that he inquired of us, also, whether we had seen the same. Beyond this we affect to know nothing of Lord Byron's sentiments on cocking; but it may be supposed from his promptitude at that time in "speaking his mind," that had he then conceived any disapprobation of the sport of cocking, he would have stated it. If it were not that every sentiment known to be entertained by this truly eminent writer is a matter of record with the public, we should not have introduced this seemingly irrelevant matter under any minor consideration. We do not say with Pierce Egan, that " The subject of cock-fighting has been too long before the public to require any defence from our hands; but shall use his lordship's words as the best answer we can give to those persons who are inclined to be a little too fastidious respecting this once popular sport: —

' Some talk of an appeal unto some passion,
Some to men's feelings, others to their reason;
The last of these was never much the fashion,
For *reason* thinks all *reasoning* out of season.' "

Sect. I. *The Natural and Sporting History of the Game-cock.*

3997. *The gallus or cock* (*Phasianus Gallus* Linn., *fig.* 570.) and his family play a very important part among the sheltered race. Strange to tell, he is united in the Cuvierian system with the pheasant breed. We however are fully prepared to agree with that great naturalist, Temminck, who separates the cocks from the genus *Phasianus*. With much judgment, at least as we think, he does not consider that the pheasant *characters* apply to the gallinaceous birds for the following reasons: — He regards the most striking of the characters of the pheasant as little applicable to the majority of cocks. The tail feathers of the former are long, narrow, and vaulted, the two intermediate quills being constantly more elongated than the lateral: their cheeks also are covered with a tissue composed of small feathers exceedingly short, and indeed so much so as to resemble velvet; to which he might have added, the distinguishing features of the crown of the head being naked, and the skin raised into a fleshy elongation, called the comb, as well as by a no less distinctive peculiarity, that of the elongation of the skin of the lower jaws into portions hanging down, called wattles. The pheasants are likewise much less hardy than our fowls, and it is only by the utmost care that they can be brought to breed in a state of domestication, whereas our game fowls breed with us readily.

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GAME-COCK.

3998. *M. Temminck is of opinion*, that the races of our domestic cocks sprung from the Jago cock (*Gallus giganteus*), a species native to Sumatra, and from the *Banteiva*, another primitive race found in the forests of Java. Somini conceives that he has heard the crow and other notes of our domestic fowls in the forests of Guiana. It however gives weight to this placing of our breed of the game-cock, that we only know of one specimen of the *Gallus giganteus*, the supposed primogenitor of our game-cock, and that is in the Museum of Edinburgh, and was procured from Sumatra. With regard to the difficulty that has been experienced at coming to any satisfactory determination on the true placing of the game-cock in ornithology, we can hardly wonder at it, when we regard the disposition that is observed in this breed to what is called "sport into varieties." Some have ample crests on their head, which fall down in graceful curves over the head, face, and eyes. Another is the Dutch pencilled fowl of a pure white, distinctly spotted with black. Another singular variety is seen in the rumpless or tailless cock, and in the *Gallus Morio*, which has the periosteum or outer covering of the bones black, while the flesh is white. The Friesland cock is well known by his feathers, which all grow in a contrary direction to the usual one. The bantams, so familiar to us, and so admired, are derived from a town in Java. On them we have only to point out the proof they set before us of the power of art in interfering with nature. Formerly these birds were seen feathered down to the toes, now we see them very minute in size, and as clean limbed as the game-cock, which alteration was brought about by art.

3999. *The internal conformation of the game-cock* presents some specialties thus noted by Mr. Griffith: — " The stomach of the cock is singularly muscular, and furnished internally with a tunic almost cartilaginous. The action of the muscles produces a friction in the interior of the stomach, which rapidly comminutes not only aliments of every description, but will in a few hours wear down the surfaces of globes of glass, and reduce the whole to powder; triangles too, of glass, even with greatly acerated points, are blunted in a very little time; nay, even points of steel, implanted in a ball of lead, are equally worn down by this violent action of the muscles. In the works of Spallanzani, the proofs of this may be found in the account of the various experiments performed by that philosopher on the digestive organs of the cock. Properly speaking, the cock has three stomachs: the first is the gizzard, the second is observed a little lower down in the dilatation of the œsophagus, and the third is the muscular pouch which we have just alluded to. This last stomach, according to Bechstein, is composed of four principal muscles, which produce the most active mechanism on this viscus. The intestinal canal measures more than five times the length of the bird, and the two cæca are six inches long, and take their origin at the spot where the colon is united to the ileum. The testes of the male are of greater volume, in proportion to the body, than in any other bird. The trachea is widened a little, funnel-wise, towards the upper larynx; it narrows sensibly towards the lower larynx, which is very much compressed. The lateral parts of this last are furnished with a single membranous piece, which is not supported by cartilaginous rings; the cartilage, which traverses the larynx internally, instead of being soldered as in the turkey, in the middle of the last demi-ring is suspended to two triangular pieces attached under the anterior and posterior parts of this ring. The bronchiæ have not entire rings, and their internal part is furnished with a membrane. The entire trachea appears capable of being elongated or shortened in a very sensible degree, and the lower larynx is equally capable of being compressed and dilated according to the sounds which the animal wishes to produce. It is probable that the very shrill tone of the cock is produced by this compression of the lower larynx. In the interior of the top of the trachea, immediately at the aperture of the glottis, there is a very slight protuberance, but no socle, or osseous triangle, as in the pauxis, the hoccos, and penelope." (*Animal Kingdom*, vol. viii. p. 182.).

4000. *On the breeding of fowls generally* we have not room to enlarge, but we would refer the inquirer to Mr. John Lawrence's excellent work on the subject, under the title of Mowbray's treatise on the *Breeding and Rearing of Domestic Animals.* On the subject of breeding game fowls we may probably drop a few hints. Already we have offered some description and some illustrative cuts, exemplifying the processes carried on in the egg from its accumulation within the mother as a mere animal mass to its impregnation and vivification through the agency of the cock, to its expulsion from the shell as the living bird by the process called hatching. It is worthy of remark, that in this order of birds the young can search out their food and eat it as soon as they emerge from the shell. It is ordained therefore by Nature, that the number of eggs which each mother lays is exactly that which she can cover, and keep up sufficient heat by her body and wings to hatch or vivify. How exactly Nature, we may here remark, suits the supply to the wants of her animals: thus, with most other birds the number of eggs does not often exceed four or five, not because the females of those birds could not cover a greater number, but being obliged to support these young some time after they are hatched, they would not be able to do it were their offspring more numerous. March and April are the months our most experienced breeders of game fowls choose for that purpose, and the selection of a healthy spot is important, the warmest and driest soils being the best adapted to the purpose, and consequently the cold and the damp are the worst, producing cramp, roup, and other injurious attacks: cold, however, is less to be dreaded than damp. Gravelly soils suit them: therefore, when a clayey and boggy one is chosen they seldom thrive, but, on the contrary, die off before they reach maturity, spite of every medicament or change of food. Where, however, the attempt is made, counteract the effects in the following manner: — Fence off a considerable area with a tolerably high fence; and having so done, give it a thick ground coating of brick rubbish, surmounted by a layer of chalk and a superstratum of gravel. Around this area, let there be other plots made dry also by under-draining, &c. which should be sown with some of the seeding grasses, as trefoil, wild clover, spurry or stargrass, all which, but especially the two last, Mowbray says, " are particularly salubrious to poultry." Within this inclosure let the poultry houses be erected, and if possible facing the south; by following which course, the evils of an unfavourable soil may be avoided. We again remark on the prudence of beginning in time, therefore put up the breeding hens and the cock in January. March chickens, says a breeder, " seldom have the roup;" however, this malady will appear, and is more likely to take place in very high bred birds than in those not so highly bred. Guard also against frost, which attacks the chickens in proportion to the extent of that high breeding in the parents, which the owner so anxiously strives to obtain. We will take it for granted, that where an early brood appears, the breeder will not allow the young gentry to walk abroad with mamma if any thing like frost is in the air. Both mother and chicks indeed in such cases are best shut up. On the contrary, when the sun shines out during February even, and no north or east wind is blowing, they may run abroad in the middle of the day for half an hour, or even an hour, if the sun is out. The corn given to the young cocks should be of the very best kind, the water also must be equally so. Of the corn, we will observe in the words of a cocker, " It should be of the very finest quality and of the easiest digestion; that which has been housed the ripest presents itself as the food best adapted to the *whole feathered tribe*, though the habits of some lead them to devour animal food, fish, and other substances. But what is the condition of such birds? what their propensities? We need scarcely bestow a single thought upon the appropriate answer, and in that answer will be found the impolicy of bringing up game chickens as of training game-cocks upon *raw meat*, according to the general practice (it is apprehended), when worms are obtained with difficulty. Much better would it be to convert the meat into *gentles* by means of artificial heat, in the same manner as anglers procure such worms by the heat of the sun and the blowing of flies. For this purpose (seeing that the worms would be mostly required early in the year), some large blow-flies may be put away in autumn, and be raised from the dormant state by heat, so as to impregnate (or blow) animal matter in abundance; nor will they readily leave the genial retreat provided for them, though left at large, if they are sheltered from the action of the boisterous winds that prevail early in the year. Exercise and good water appear to us essential requisites in training cocks; and the walks provided for them should possess the means of obtaining both. As, in attaining the first mentioned, frequent runs would be required, the advantage of a field adjacent would mainly conduce thereto, so also conveniences should be provided for separating the quarrelsome from each other. This latter more especially, since the practice of permitting the stags and younger chickens to spar occasionally will improve their wind, try their courage, and reduce the quantity of fat which gathers round the gizzard, the heart, &c. in highly fed animals; besides that, when these bouts are over, if one does not give in or run under the other, they will be always at it, and must be separated. Wherever the convenience exists of making a small streamlet of fine clear water flow near the pens, let this advantage be adopted in preference to using shallow pans that require frequent filling, and which soon get muddled by the fowls walking over them; and the readiness of attendants to replace clean water instead of foul, seldom keeps pace with the spoliation and wants of the game animals, which stand in need of much drinking." (*Sporting Annals* for April, 1828, p. 288.) We, however, thus far venture to offer hints on *chicken* rearing. But when the important business of *training* commenced, then all was behind the curtain, and then it was that a more notable personage stepped in and began to play his part, which was most of it *sub rosa*.

4001. *Cock feeding and training* are words of synonymous import. A professed cock feeder and trainer who became fortunate in the birds he attended was a much greater personage than many still greater persons think; and we are not sure that Joseph Gilliver, publicly proclaimed in the *Sporting Magazine* for November, 1834, " as the most celebrated cock feeder England ever produced," would have changed his honours for those of General Havelock himself. The first main, we are told, which Gilliver ever fought in public was at Coleshill in Warwickshire, and the last was at Preston in Lancashire, in 1830. During his life he fed principally for Lord Mexborough, Mr. Featherstone, Mr. White, General Yates, Mr. Sitwell, and others too numerous to mention. His chief opponent was Potter, who was feeder for that veteran sportsman the late Earl of Derby, whose attachment for the sod continued unwearied, and who was seen enjoying to the very last his favourite amusement with all the zest of a younger man. The largest sum ever fought for in England was a main of only seven battles for 1000 guineas a battle, and 5000 guineas the main. This was fought at Lincoln, and won by Gilliver, who was fortunate enough to gain five out of the seven battles. At Lichfield, Chester, Manchester, Newton, Oxford, and Preston, he fought great mains, and generally with success. The last few years of his life were spent in a neat cottage in his native town, which he built himself from the produce of his ability in the profession to which he was devoted, and in which he was unrivalled. He died in 1833, in his seventy-fourth year." (P. 53.)

4002. *The term feeder*, as connected with cock fighting, by no means meant the mere provider of food for these birds; on the contrary, it had a much wider interpretation, as will be seen by a reference to *Johnson's Sportsman's Dictionary*, art. Cock Feeder, where it states, " A cock feeder to be a person whose occupation it is to collect, handle, and feed a pen of cocks, to fight such main or hatch as may be made or agreed on by those who deposit the battle money, and are called the masters of the match. These find or procure the cocks, of which the feeder takes charge; and to his judgment is submitted the entire management of selecting, rejecting, feeding, physicking, sweating, sparring, weighing, cutting out (alias trimming), and bringing his bag and cock to the pit; where, upon delivering it to the setter-to, his function ceases in respect to that particular cock, till death has sealed his disgrace, or success proclaimed his victory." (P. 143.) The cock feeder first provided each of his cocks with what is termed his " walk," *i. e.* a parading ground. This he did until deeming him fit to display and to quit walking under his sire, who in his novitiate not only cherished and protected him, but initiated him also into the first principles of defence and offence. This separation, called *taking up*, usually occurred when the juvenile was about six or seven months old. Previous, however, to this, these young birds were subjected to certain operations deemed essential by the fancy, and not without reason. The boxer entered the ring divested of his upper garments, as the cock, ere he entered his *walk*, was deprived of his comb and gills, and received sundry marks about the head and feet. One of the most important duties of the *feeder* was to determine on the growing condition of the cock, and his aptitudes, from the time of his " walking " until he entered the cockpit. If he got " below the mark," he would not be nimble enough to avoid the spur of his antagonist, nor, instead thereof, to deal him a deadly blow. It was the general look of the bird, his saucy bearing, his lithesomeness, the firmness of his flesh, the healthy redness of his rump, the brilliancy of his eye, and the powerful contractions which both his wings and legs made when he was undergoing the feeder's handling, which bespoke his condition.

4003. *The matched cock*, like the prize fighter among ourselves, exhibited the best condition, as well as a settled pugnacity, so strongly marked as to say, I will either conquer or die. To bear out these promises, his fighting points should be as prominent as those of the best pugilist. He must have an erect gait, and a towering loftiness of carriage, but united with sufficient flexibility of limb, with a head rather pointed than coarse, a beak moderately crooked and stout, a neck strong, and of sufficient length, so that if his antagonist fight principally at the head, it may be difficult for such antagonist to reach it, which will give him much advantage in uncovering his enemy's weak points, and securing his own from harm. The best judges are not fond of a sharp breasted cock, although we are assured by one of the fancy that some of the gamest fowls he ever handled were keel breasted. If the objection against this formation be valid, it must arise from the circumstance that it bespeaks a falling off from the due proportions of the pectoral muscles, by which the powerful efforts of the wings in giving effect to the blow which inserts the armature, whether of silver or of steel, into the vitals of the antagonist are impeded. Thus also the broad expanse of chest of the boxer, when it exhibits his muscular masses, is hailed by the bettors in his favour as an earnest how effectively he is likely to deal his blows, or, as the fancy would express it, " how handsomely he would handle his mawlies." A cock's longer points, as his thighs and legs, should also be so marked as to attract attention; the former for being very muscular, and the latter for their length and strength, terminating in broad, thin, sinewy feet and long claws.

4004. *When a main of cocks was to be fought at the Royal Cockpit, Westminster*, a match-bill was presented, which contained all the colours of the cocks engaged on the occasion; by which it will be seen that the lightest weight specified is three pounds nine ounces and one-quarter; and the heaviest, four pounds eight ounces and three-quarters. We believe four pounds ten ounces was the maximum weight allowed in match fighting; or, as one of the fancy had it, " all beyond this are excluded by all the match makers from fighting within the articles;" a bird to be a bird fit for the white bag, the trimmed wing, the mat, and the silver spur, must be high on the leg, light fleshed, and large boned; but still no more than four pounds eight or ten ounces." We hardly need affect to inform even the mere tyro that cocks fought either in steel or in silver spurs. Colour among a few breeders was thought important, but many more considered that as a good horse may be of any colour, so likewise might a good cock. The lighter colours were avoided; we have heard a cock fighter say he never saw either a white or dun bird good for anything but to run away. Hence, we suppose, originated the term for cowardice being that of " showing the *white feather*." Gray, yellow, or red, with a black breast, were very favourite colours.

4005. *To become enamoured of this sport* we can readily suppose to be an easy matter for vast numbers. The late Lieut.-col. Mordaunt, well known as a sportsman of much spirit and enterprise, was a great zealot in cocking, and took vast pains in the improvement of the game birds. Unfortunately for this amateur he heard that the game-cocks of India were larger, and even more pugnaciously inclined than our own breeds; which idea was in all probability strengthened from reading the following observations of a celebrated naturalist:— " In China, India, the Philippian Islands, and all over the East, cock fighting is the sport and amusement even of kings and princes. It is the opinion of many that we have a bolder and more valiant breed (of cocks) than is to be found elsewhere; and some, indeed, have entered into a serious discussion upon the cause of so flattering a singularity. But the truth is, they have cocks in India as bold, if not bolder, than ours; and, what would still be considered as more valuable among cockers here, they have more strength, with less weight. Indeed, I have often wondered why men who lay two or three hundred pounds upon the prowess of a single cock, have not taken every method to improve the breed. Nothing, it is probable, could do this more effectually than by crossing the *strain*, as it is called, by a *foreign* mixture; and, whether having recourse to the wild cock in the forest of India would not be useful, I leave to their consideration." " The colonel resolved to put the truth of such assertions and observations to the test: he resolved, in fact, to transport to India some English game-cocks, in order to try the courage of the foreigners in their own country, that they might not run the risk of losing this valuable quality by a removal to England. Lieutenant-colonel Mordaunt accompanied his cocks to India, where he witnessed their defeat; and when he returned to his own country, I am not aware that he ever succeeded in improving the native blood. Be it known however, that this gentleman was kind hearted and generous, and expended very considerable sums in attempts to improve the condition of the lower classes in his own neighbourhood. He endeavoured to introduce the silk manufacture in this part of England; and though his efforts were not crowned with success, the spacious building which he erected for the purpose, long continued a mouldering monument of his public spirit and generous disinterestedness." (*Sporting Annals*, November, 1827, p. 237.) This extract alone would be sufficient to convince the reader how infatuating this sport can become to some persons. There is excitement in it from beginning to end; from the handling of the favoured eggs to be placed under the well known careful hen, to the time when the young chicks start through their shelly casement into open day. How watchfully they are guarded, and how the assistant prepares the food best adapted to their state! How they are now watched, and how their pugnacious attitudes glad the eyes of the sanguine breeder, who sees in the sparring forms which the younglings amuse themselves with signs of future prowess, and game determination to hold out until death or victory! Such, we presume, were the stimuli that urged on the breeder, and carried him full of hope to the battle-field—we beg pardon, to the cockpit boards. It must have been an interesting sight to see all these manifestations in some of our greatest enthusiasts in the sport; such, for instance, as Colonel Mordaunt, lately noted, and that amiable nobleman the late Earl of Derby.

4006. *The management of game fowls*, like every manipulation or employ entrusted to the lower classes, became an arbitrary one, dependent on some olden methods handed down from one generation to another. It was fixed, and could not be diverted from its course except by very powerful agencies; hence, instead of being rational, it was empirical; and instead of being open to comment, and thus open to amendment, it had an impenetrable veil of mystery thrown over it too dense to be ever penetrated by reason or experiment. Game fowls are known from others by many distinguishing marks. Their coloured feathers bear a predominant portion of a rich red: their size is inferior to the coarser varieties which grace the farm yard, while to the symmetry and delicacy of their limbs is superadded a critical mechanical formation that adapts them to offensive operations on others, or furnishes them with the means of warding off those attempted on themselves. This disposition to pugnacity is inherent in them, so as to make the task of rearing them any thing but pleasant; for it shows itself at very early periods of their growth, and blinds very many of them. This aptitude is so great, that it appears almost equal in the half breds also, which prevents this race from being much cultivated. However, this irresistible attachment to fighting among themselves has certainly furnished the cockpit amateurs with their best defence against the tax of cruelty, and the more this natural pugnacious predilection is taken notice of, the more it will appear that if these birds are kept, they must be allowed to fight. It is, in fact, an irresistible passion; deprive them of it, and misery assails them. There are innumerable philanthropic admirers of animals abroad in the world, but there are but few who have had the hardihood to openly and personally attack those who flagrantly commit unnecessary cruelty on animals. One of the oldest amongst us of this class was Mr. John Lawrence, lately deceased at an age, as we believe, nearly if not quite ninety years. This gentleman has all his life proved a staunch advocate for humane treatment towards animals, and proved a determined enemy of cruelty towards them in any shape. What does he say on this subject in his treatise on *Rearing Domestic Poultry?* "Philanthropists are in the habit of declaiming much against the practice of cockpit battles; but, on reflection, the cruelty of that sport will be found among the least wherein the feelings of animals are concerned, since fighting in the game-cock is a natural and irresistible passion, and can never take place against his will; and since those engaged in regular combat upon the arena would do so voluntarily and with equal ardour did they meet in the desert. Another and similar mistake is the supposed additional cruelty of arming the heels of the cock with steel spurs, which, on the contrary, conduces to shorten the period of their sufferings." (P. 13.) Our own opinion of cocking coincides very much with that of Mr. Lawrence. We neither encourage it, nor do we rail at it to show our sensibility: were the birds forced to the task, we should think much worse of it than we do; but when we find this pugnacious disposition implanted by Nature, we cannot readily fancy ourselves wiser than this universal mother. We, however, were never ardent admirers of the sport, as must be apparent when we are enabled to assert we never were present at any matchings of cocks except when, as an officer in the North Gloucester Militia, quartered at Drogheda, under the command of Colonel Kingscote, we saw some matches got up among the officers of the garrison. With these exceptions we know nothing personally of cock fighting. We, however, claim no merit on that score, for the reasons adduced. If, therefore, there be any great defects in the clearness of our details, or the spirit of our descriptions, we hope they may be attributed to the right source, our having had neither the time nor the inclination, since then, practically to inform ourselves on the subject. Nevertheless we do hope, that what we have already gleaned from other sources will yield the reader all the necessary information to satisfy his curiosity, more especially now that it only ranks among the sports that have been. Pierce Egan has an amusing and clever article on the subject in his *Book of Sports*. Mr. Johnson likewise, who was an excellent compiler, gives a clever touch of his craft in his *Sportsman's Dictionary*, art. Cocking. Our own experience on this ancient sport is but small: we are gleaners only, but we have endeavoured to offer the grain divested of the chaff which often attends it. The subject must be considered an interesting one, connected as it is with the natural history of an admired breed of gallinaceous birds, whose prowess and daring may be supposed to have kindled a martial spirit in mankind. It is to be regretted that even in this sport, as it was formerly in race-horse training, all was conducted under a veil of mystery, assumed, we doubt not, to deceive. It was formerly altogether done by a class neither willing nor able to receive or give instruction; nor was the practice ever much more open, the processes pursued being those only which had been fostered in days when occult methods and empirical practices were in vogue. Each feeder, trainer, and setter-to had his secrets; but whether they were secrets "worth knowing" is not quite clear. Sufficient of wholesome air around a dry and sheltered walk, having a southern aspect, is an important portion of the early *walking* of the bird. An amateur of the cockpit remarks on the secrecy observed among cock feeders, that although he has seen the management of many, he was inclined to deny them the greater part of the merit they would arrogate. "Much depends on the breed," he observes, and he here exercises a sound discretion. Look at our race-horses of the present day, and regard what dependence is placed on the get. How the blood of the most celebrated of our racers of early days is still as distinguished in their descendants, particularly where judgment has been displayed in mating the parents so as to correct the defects and extend the excellences of each. In coursing, cast an eye on the performances of the descendants of the Snowball breed, and then say whether or not the qualities of the parents are not of the very first importance in duly estimating our hopes of the offspring. But even the best breeding requires the aid of the judicious trainer, not that of the mere quacking and self-opinionated one who walks, feeds, and trains from some olden pages of a date when ignorance reigned, and superstition guided every opinion, and interfered in every process: no! but of one who watches Nature's processes as she exhibits them in the care and nurture of both wild and domesticated animals. By closely watching these, he will soon perceive where art can assist nature, and such manifestations he should lay hold of, and profit therefrom. If all does not go on quite so well as he could wish, let him consider every part of his treatment. Are his cocks well housed? are his pens at once dry, airy, and sweet? and are his birds neither molested at night by rats, nor by unnecessary excitement by day, which are circumstances not often taken into account, yet they are important matters, and most concern those from whom *most* is expected. In the cock's walks is occasional green food to be picked up; and is it of a proper kind? No two breeds nor two clutches of chickens thrive in equal proportions; and the fault is not so often in the breed itself, as in some peculiarity in the wants of the animals, or something noxious which assails them from without or within. We once were requested to look at some birds of a very crack breed, but which it was acknowledged did not thrive. After watching them attentively for ten minutes, we found them so restless that we were assured something irritated their skin beyond endurance. We took one in our hands, which, on turning back its half-formed feathers, exhibited myriads of minute animals of the pediculous kind, having their heads embedded in the skin. We recommended a very mild wash of stavesacre (*Staphis agria*) to be applied, which destroyed these lice, and the younglings being left at rest immediately began to thrive.

Subsect. 1. *Rules and Orders for Cocking, at Cockpit Royal, Westminster.*

4007. *The Cockpit Royal, Westminster*, was the grand arena for cock fighting, and was erected after the pulling down of the royal cockpit in St. James's-park. Pierce Egan thus describes it, as "a dull old-fashioned building in Tufton-street, Westminster, the cockpit being a large, lofty, and circular building, with seats rising, as in an amphitheatre. In the middle of it was a round matted stage, of about eighteen or twenty feet diameter, as nearly as my eye can measure it, and rimmed with an edge eight or ten in height, to keep the cocks from falling over in their combats. There is a chalk ring in the centre of the matted stage, of perhaps a yard diameter, and another chalk mark within it, much smaller, which is intended for the setting-to, when the shattered birds are so enfeebled as to have no power of making hostile advances towards each other. This inner mark admits of their being placed beak to beak. A large and rude branched candlestick is suspended low down, immediately over the mat, which is used at the night battles." (P. 150.)

4008. *The rules and orders for cocking* were as follows:—"On the weighing morning, the person whose chance it was to weigh last, was to set his cocks, and number his pens, both main and byes, and leave the key of the pens upon the weighing table (or the other party if he pleased might put a lock on the door) before any cock was put into the scale; and after the first pack of cocks were weighed, a person appointed by him that weighed first went into the other pens to see that no other cocks were weighed but what were so set and numbered, provided they were within the articles of weight that the match specified; and if not, to take the following cock or cocks, until the whole number of main and bye cocks were weighed. And after they were all weighed, he was to proceed as soon as possible to match them, beginning at the least weight first, and so on; and equal weights or nearest weights to be separated, provided by that separation a greater number of battles could be made, and not otherwise; and all blanks, that is, choice of cocks, were to be filled up on the weighing day, and the battles divided and struck off for each day's play, as agreed on, and the cocks that weighed the least were to fight the first day, and so upwards." At the time agreed on by both parties to begin fighting, the cocks that were to fight the first battles are brought upon the pit by the feeders or their helpers; and after being examined, to see they answer the marks and colours specified in the match-bill, they are given to the setters-to, who, after chopping them in hand, give them to the gentlemen who are called masters of the match (who always sit opposite to each other), when they turn them down upon the mat; and the setters-to are not to touch them, except they either hang in the mat, in each other, or get close to the edge of the pit, until they leave off fighting so long as a person can count forty. When both cocks leave off fighting, until one of the setters-to, or a person appointed for telling the law, can tell forty gradually, then the setters-to are to make the nearest way to their cocks, and as soon as they have taken them up to carry them into the middle of the pit, and immediately deliver them on their legs, beak to beak, and not touch them any more till they have refused fighting so long as the teller of the law can count ten, unless they are on their backs, or hung in each other or in the mat; then they are to set-to again in the same manner as before, and continue it till one cock refuses fighting ten several times, one after another, when it is that cock's battle that fought within the law. But it sometimes occurs that both cocks refuse fighting while the law is telling; when this happens, a fresh cock is to be hovelled, and brought upon the mat as soon as possible, and the setters-to are to toss up which cock is to be set-to first, and he that gets the chance is to choose. Then the other which is to be set-to last must be taken up, but not carried off the pit; then setting the hovelled cock down to the other, five separate times, telling ten between each setting-to, and then the same to the other cock; and if one fights and the other refuses, it is a battle to the fighting cock; but if both fight, or both refuse, it is a drawn battle. The reason of setting-to five times to each cock is, that ten times setting-to being the long law for one cock only, so on their both refusing, the law is to be equally divided between them, as they are both entitled to it alike. Another way of deciding a battle is, if any person offers to lay 10*l.* to a crown (that is, if he is a person thought capable of paying when he loses, or one who stakes his money upon the mat), and no person takes it until the law-teller tells forty, and calls out three separate times, 'Will any one take it?' and no one does, it is the cock's battle the odds are laid on, and the setters-to are not to touch the cock during the time the party is telling, without either cock is hung in the mat, or on his back, or hung together. If a cock should die before the long law is told out, although he fought in the law, and the other did not, he loses his battle; for there cannot be a better rule for a cock winning his battle than killing his adversary in the limited time he is entitled to by cock laws. There are often disputes between the setters-to, as also with the spectators, respecting their counting the long law; for often both cocks refuse fighting until four or five, or more or less times, are told; then they begin telling from that cock's fighting, and counting but once refused, they should continue their number on, until one cock has refused ten times; for when the law is begun to be told it is for both cocks, for if one cock fights within the long law, and the other not, it is a battle to the cock that fought, counting from the first setting-to. All disputes about bets, or the battle being won or lost, ought to be decided by the spectators; for, if the bets are not paid, nor the battles settled according to judgment then given, it will be good evidence in law if an action is brought for the recovery of such bets. The crowning and mantling of a cock, or fighting at the setter-to's hand, before he is put to the other cock, or breaking from his antagonist, is allowed no fight." (*Sporting Annals* for May, 1828, p. 289.)

4009. *In Pierce Egan's entertaining pages on this subject*, he makes mention of a little tract from which he professes to have gleaned much information; and as we account it no fraud to enable our readers to profit by what has been already borrowed, we shall extract so much from these paragraphs as will tend to illustrate our matter more fully. We, however premise that the cocking season usually began about Shrovetide, and was coeval in duration with racing, and like that extended over the United Kingdom. Both were national sports, and perhaps that of cock fighting was the only one, except racing, that united the plebeian and aristocratic spectators so harmoniously in common pursuits. We hardly need again to state, officially as it were, that cocks preparing for battle were heeled with spurs of either steel or silver, as circumstances might require, or the matchers might fancy. It is evident that, to drive a silver spur fatally through the body required more force than would be necessary were a steel spur employed; but the silver spur certainly carried with it an air of high bearing, and was expected only to be met with on a cock of high pretensions. After a most humourous description of the collected assemblage around, which will repay the reader's trouble to refer to, Egan's authority continues, "I was continuing my inquiries into the characters around me, when a young man of very slang, slight, but prepossessing appearance passed me, dressed in tight kerseymeres, with a handkerchief round his knee, neat white cotton stockings, small shoes, a blue check waiter-looking jacket, short about the waist, and a gay 'kerchief knowingly tied on his neck. He was really a clean, handsome faced young fellow, with thin but acute and regular features, small light whiskers, and with his hair closely cut, and neatly and 'cutely combed down upon his forehead. He had scarcely passed me before I felt something rustle and chuckle by my elbow; and turning round, saw a stout, plump, old ostler-looking man carry a white bag past me, which, by the struggle and vehement motion inside, I guessed to be one of the brave birds for the battle. The two men stepped upon the mat, and the hubbub was huge and instantaneous. 'Two to one on Nash!' 'A guinea on Nash!' 'Nash a crown!' — Sounds like these were only heard (for the bets are laid on the setters-to), till the noise aroused a low *muscular*-brooding chuckle in the bag, which seemed to show that the inmate was rousing into anger even at the voice of man! From the opposite door a similar procession entered. The setter-to (Fleming by name) was dressed much in the same manner, but he appeared less attractive than young Nash (the name of the young man I have just mentioned). He certainly was not so smart a fellow; but there was an honesty and a neatness in his manner and look which pleased me much. The chuckle of the cock in the one bag was answered deeply and savagely from the other; and the straw seemed spurned in the narrow cell as though the spirit that struck it would not be contained. Nash's bag was carefully untied, and Nash himself took out one of the handsomest birds I think I ever beheld. I must have leave to try *my* hand at a description of a game-cock (*fig.* 571). He was a red and black bird — slim, masculine, trimmed — yet with feathers glossy, as though the sun shone only upon his nervous wings. His neck arose out of the bag snake-like — terrible — as if it would stretch upward to the ceiling; his body followed, compact, strong, and beautiful; and his long dark blue sinewy legs came forth, clean, handsome, shapely, determined, iron-like! The silver spur was on each heel, of an inch and a half in length, tied on in the most delicate and neat manner. His large vigorous beak showed aquiline — eagle-like; and his black dilating eyes took in all around him, and shone so intensely brilliant, that they looked like jewels. Their light was that of thoughtful, sedate, and savage courage! His comb was cut close, his neck trimmed, his wings clipped, pointed, and strong. The feathers on his back were of the very glossiest red, and appeared to be the only ones which were left untouched, for the tail was docked triangularwise like a hunter's. The gallant bird clucked defiance, and looked as if he 'had in him something dangerous.' Nash gave him to Fleming, who held him above his head, examined his beak, his wings, his legs, while a person read to him the description of the bird from paper; and upon finding all correct, he delivered the rich feathered warrior back to Nash, and proceeded to produce his own bird for a similar examination. Fleming lifted his bird from the bag, and my whole mind was directed his way. This was a yellow bodied, black winged, handsome cock, seemingly rather slight, but elastic and muscular. He was restless at the sight of his antagonist, but quite silent; and old Nash examined him most carefully by the paper, delivering him up to Fleming upon finding him answer to his description. The setters-to then smoothed their birds, handled them, wetted their fingers, and moistened their bandaged ankles where the spurs were fastened, held them up opposite to each other, and thus pampered their

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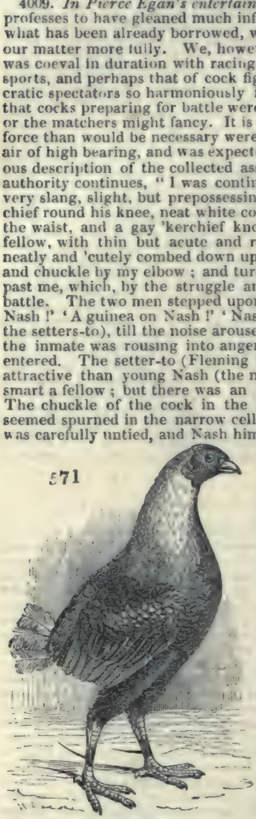

COCK IN FIGHTING TRIM.

courage, and prepared them for the combat. The mat was cleared of all persons except Fleming and young Nash. The betting went on vociferously. The setters-to taunted each the bird with the other's presence, allowed them to strike at each other at a distance, put them on the mat facing each other, encouraged and fed their crowning and mantling until they were nearly dangerous to hold, and then loosed them against each other for the fatal fight. The first terrific dart into attitude was indeed strikingly grand and beautiful, and the wary sparring, watching, dodging, for the first cut was extremely curious: they were beak-point to beak-point, until they dashed up into one tremendous flirt, mingling their powerful rustling wings and nervous heels in one furious confused mass. The leap—the fire—the passion of strength—the *certaminis gaudia*—were fierce and loud! The parting was another kind of thing every way. I can compare the sound of the first flight to nothing less than that of a wet umbrella forced suddenly open. The separation was death-like: the yellow, or rather the *ginger* bird, staggered out of the close, drooping, dismantled, bleeding! He was *struck!* Fleming and Nash severally took their birds, examined them for a moment, and then set them again opposite to each other. The handling of the cocks was as delicate as if they had been made of foam, froth, or any other most perishable matter. Fleming's bird staggered towards his opponent, but he was hit dreadfully, and ran like a drunken man, tottering on his breast, sinking on his tail; while Nash's, full of fire and irritated courage, gave the finishing stroke, that clove every particle of life in twain. The brave bird thus killed, dropped at once from the 'gallant bearing and proud mien,' to the relaxed, draggled, motionless object, that lay in bleeding ruin on the mat. I sighed, and looked thoughtful, when the tumult of the betters startled me into a consciousness of the scene at which I was present, and made me feel how poorly timed was thought amid the characters around me. The victor cock was carried by me in all his pride, slightly scarred, but evidently made doubly fierce and muscular by the short encounter he had been engaged in. He seemed to have grown to double the size! his eyes were larger. The paying backward and forward of money, won and lost, occupied the time until the two Nashes again descended with another cock. Sometimes the first blow was fatal — at another time the contest was long and doubtful; and the cocks showed all the obstinate courage, weariness, distress, and breathlessness, which mark the struggles of experienced pugilists. I saw the beak open, the tongue palpitate, the wing drag on the mat: I noticed the legs tremble, and the body topple over upon the breast, the eye grow dim, and even a perspiration break out upon the feathers of the back. When a battle lasted long, and the cocks lay helpless near or upon each other, one of the feeders counted ten, and then the birds were separated and set-to at the chalk. If the beaten bird does not fight while forty is counted, and the other pecks or shows signs of battle, the former is declared conquered."

We cannot, as we think, close this account of cock fighting in a more appropriate manner than by inserting some clever verses on the subject by Dr. Robert Wild, a nonconformist divine and poet, born in 1609, a man of great talent and exemplary virtues. In 1648 he was appointed rector of Aynho, in Northamptonshire. He appeared also to have been as great a wit as he was a poet. It has been related of him, that being under the necessity of preaching a probationary sermon with another divine for the living, when the contest was over, on being asked how he had succeeded? he replied, "We have divided it — I have got the Ay, and he the No." Some of his sermons gave great satisfaction, and are still extant: —

Verses on Cock Fighting, by Dr. Robert Wild.

"No sooner were the doubtful people set,
The match made up, and all that would had bet,
But straight the skilful judges of the play
Brought forth their sharp heel'd warriors; and they
Were both in linen bags, as if 'twere meet
Before they died to have their winding-sheet.
Into the pit they're brought, and being there
Upon the stage, the Norfolk chanticleer
Looks stoutly at his ne'er before seen foe,
And, like a challenger, began to crow
And clap his wings, as if he would display
His warlike colours, which were black and grey.
Meantime the wary Wisbich walks and breathes
His active body, and in fury wreathes
His comely crest, and, often looking down,
He whets his angry beak upon the ground:
This done, they meet, not like that coward breed
Of Æsop; these can better fight than feed;
They scorn the dunghill, 'tis their only prize
To dig for pearls in each other's eyes.
They fought so nimbly, that 'twas hard to know,
To the skilful, whether they did fight or no,
If that the blood which dy'd the fatal floor
Had not bore witness of 't. Yet fought they more,
As if each wound were but a spur to prick
Their fury forward. Lightning's not more quick
Or red than were their eyes: 'twas hard to know
Whether 'twas blood or anger made them so.
I'm sure they had been out had they not stood
More safe by being fenced in with blood.
Thus they vied blows; but yet (alas!) at length,
Although their courage were full try'd, their strength
And blood began to ebb. You that have seen
A watery combat on the sea, between
Two angry, roaring, boiling billows, how
They march and meet, and dash their curled brow;
Swelling like graves, as though they did intend
T' entomb each other e'er the quarrel end;
But when the wind is down, and blust'ring weather,
They are made friends, and sweetly run together;
May think these champions such; their blood grows low,
And they, which leap'd before, now scarce can go;
Their wings, which lately at each blow they clapp'd
(As if they did applaud themselves) now flapp'd;
And having lost th' advantage of the heel,
Drunk with each other's blood, they only reel;
From either eyes such drops of blood did fall,
As if they wept them for their funeral.
And yet they fain would fight; they came so near,
Methought they meant into each other's ear
To whisper wounds; and when they could not rise,
They lay and look'd blows int' each other's eyes.
But now the tragic part! After this fit,
When Norfolk cock had got the best of it,
And Wisbich lay a dying, so that none,
Though sober, but might venture seven to one,
Contracting, like a dying taper, all
His strength, intending with the blow to fall,
He struggles up, and having taken wind,
Ventures a blow, and strikes the other blind;
And now poor Norfolk, having lost his eyes,
Fights only guided by antipathies:
With him (alas!) the proverb holds not true,
The blows his eyes ne'er saw, his heart must rue.
At length, by chance, he stumbled on his foe,
Not having any power to strike a blow:
He falls upon him with his wounded head,
And makes his conqueror's wings his feather-bed!"

PART X.

BRITISH BOXING

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4010. *This is another of our pursuits* that modern refinement has most properly condemned, though in saying this we must distinguish between boxing as a sport or as a manly mode of settling differences, and boxing, as a brutal exhibition of scientific strength for the purpose of making money.

4011. *As a sport when practised with the gloves*, or the *naked fist*, it is calculated to invigorate the frame by the expansion of the chest, the development of the muscular powers, and the promotion of those quick and active evolutions, of which the human limbs, when energetically exercised, are capable, and the encouragement of which is so conducive to bodily health. It instils into the mind confidence and self-possession, gives a bold and fearless bearing to the practitioner, and sustains that natural courage, which, if it does not altogether avert, at least affords the best protection in danger or difficulty — a feeling, the value of which sportsmen of all classes can duly appreciate.

4012. *As a mode of settling differences*, and more especially among the humbler ranks of society, it is at once manly and praiseworthy, and is a fit and humane substitute for those savage practices to which men in a barbarous state but too frequently have recourse for the gratification of excited passion or revenge. It teaches men to rely on those powers with which Nature has imbued them; and, guided by *those rules of fair play*, which are inseparable from the true principles of British boxing, while it promotes that indomitable bravery, which, whenever and wherever called into action, has distinguished the character of Englishmen all over the globe, it represses those treacherous and cowardly propensities, which, in countries where the practice is unknown, lead to the use of the *knife* or the *stiletto*, or some equally atrocious mode of assault — propensities which it is to be lamented even in "happy England," of late years, from the mistaken zeal with which public boxing matches have been suppressed, have been exhibited with painful and disgusting frequency.

4013. *By the rules of "the ring"* (the *arena* in which the science and moral, if the phrase can with propriety be adopted, of boxing are practically demonstrated), which are hereafter given, it will be seen that every unfair advantage is strictly forbidden, and that any attempt at *treachery*, or *foul play*, meets with reprehension and disgrace. The spectators, however numerous, are impressed with the value and importance of these rules, and whenever violated are prompt in expressing their indignation, and applauding the justice which leads to their enforcement; thus affording the strongest encouragement to honourable bearing in combat, generous forbearance towards a sinking antagonist, and manly submission in defeat — qualities which cannot be too widely disseminated.

4014. *An apology for prize fighting* does not necessarily form a part of the task here undertaken — that of describing *the history and practice of boxing* in England being our object. As with cock fighting, so with prize fighting, or, indeed, with almost every pursuit, some one will be sure to be found to uphold it: so boxing at one time found an able advocate in the person of the late Mr. Barber Beaumont, manager, we believe, of one of the London Assurance offices, and a magistrate of Middlesex. Assuming that Mr. Barber Beaumont had no connexion with the paper or its conductors, it shows the tendency of the times towards pugilism, that he should have been allowed to vindicate the prize-ring in the columns of the *Morning Post*, which he did in the following letter, in the year 1829: —

4015. "*The effusions of humanity*, which have from time to time effervesced in tirades against the practice of boxing, have lately overflown with a vengeance. Two men are sentenced to the severest punishment of law, short of death, for being seconds to another man who had the misfortune to burst a bloodvessel by his own exertions in a boxing match! This is done, it is said, to put down the brutal practice of boxing. If by the sacrifice of two men the brutal practice of quarrelling, fighting, and destroying, could be extinguished, the good so produced would be an apology for the dreadfully severe sentence passed upon the poor men selected for an example. But no such absurd expectation is entertained: while human nature is constituted as it is, and ever has been, there will be fighting. The principle of contention cannot be eradicated from our nature; but it may be modified, and to do this is the triumph of civilisation. Military discipline divests the conflicts of armed bodies of men of many of their horrors; and boxing divests their individual encounters of the ferocity and murderous terminations to which they naturally tend. Look at the effects of private brawls among people where boxing and the laws of the ring are not recognised: the knife supplies the place of the fist, and the enraged combatants cut and mangle each other until the life blood of one or both is poured out in the fray. In a neighbouring country, one man who conceives himself aggrieved by another does not scruple to waylay him, and murder him with a bludgeon or a pitchfork, or to set fire to his cabin and burn him and his family in their sleep. In our own northern counties, where boxing is but imperfectly understood, and the laws of the ring unknown, they fight *up and down;* that is, when one gets the other down, the one who is uppermost throttles, kicks, or jumps on the one down, till he has killed or disabled him. This, too, is pretty much the case in Ireland, and indeed all over the world, except in those parts of England where regular boxing is in use. *Gouging*, which consists in a man getting his thumb into the socket of his opponent's eye, and scooping it out, is another of the brutal modes of conflict used in some parts of the United States and of our own northern counties. I boldly contend, then, that boxing, so far from being a brutal practice, is the best corrective we know of, of the brutal practices which flow out of private quarrels among the commonalty. It is not in the nature of man, nor ought he, to sit down tamely under injuries. To say that labouring men, like their betters, should always appeal to the laws when they quarrel, is rank hypocrisy, and an insult to common sense. They have neither time nor money to offer in sacrifices for the protection of our courts of law and equity, such as it is: they must settle the quarrels amongst themselves as well as they can; and out of this necessity have sprung up *boxing, and the laws of the ring*. I wish all laws had an equal portion of humanity and good sense in them. The discipline of the ring first regards the relative powers of the combatants. In stature, strength, activity, and age, there must be no great disparity. They are forbidden to use any other weapons than those which nature has given them; no unfair advantage is allowed. Nay when a man strikes down his antagonist his assault ceases; he does not follow up an advantage so decided, but leaves his fallen foe to the care of his friends, to raise him up, and replace both combatants on equal terms for a fresh trial of prowess. This is being more than just; there is a generosity in this proceeding, of which I know of no parallel in the customs of any other country, ancient or modern. It inculcates a feeling of forbearance, of humanity, and of self government, even while under the highest excitement to violence, which must elevate the character of all who share in it, and who regard it. But the interval allowed for raising a combatant from the earth and replacing him before his antagonist, is no more than sufficient for those purposes; it is not extended to a degree which would rest and renovate him, because that would enable the combatants to continue fighting for a long period, and to punish each other more severely. All waylayings, all attacks by surprise, all cutting and stabbing, knocking out of brains, scooping out of eyes, jumping on a fallen antagonist, or burning him in his sleep, all secret assaults and unmanly advantages whatever, are abhorrent to fair boxing. To talk, therefore, about the brutal practice of boxing, is to talk ignorantly and nonsensically. The discipline of the ring restrains these practices. It divests combatants of their most savage means of vengeance, and saves many lives which would otherwise be sacrificed under the assaults of unbridled rage.

"'But,' say some of the grave authorities of the law, 'I do not object to men fighting upon a sudden quarrel, while their blood is up; it is the pitched battle and the fighting for money which I abominate.' *Dicta* of this kind from persons high in office, and duly seasoned with professions of humanity, float favourably on the ear; but they will not bear examination. First, as to the pitched battle, I contend that men ought not to be encouraged to fight while their blood is up, because when their blood is up their reason is down, and that state of irritation mostly happens when they are in drink. Fighting in that state very frequently produces the rupture of a bloodvessel and death. It is therefore the office of true humanity to dissuade men from fighting when their blood is up, and to persuade them to wait until the next day, or some after period, when it has become cool. By deferring an intended combat until after the heat of passion has subsided, nineteen times in twenty it is got rid of altogether. I think another word need not be said to show the egregious folly, as well as cruelty, of the pretended humanity, which would encourage men to fight while their irritation is at the highest, and would intimidate a friend from dissuading them from fighting until after they had become cool, lest he should fall under the penalties of the law for seconding a fight between parties who are no longer influenced by passion. There is another view of the subject, which, in a national point of view, deserves serious consideration. I cannot conceive any better preparation for making effective combatants in our army and navy than the national practice of boxing. It teaches a man to look his adversary in the face while fighting; to bear the threatening looks and fierce assaults of an antagonist without flinching; to watch and parry his intended blow; to return it with quickness, and to follow it up with resolution and effect. It habituates him to sustain his courage under bodily suffering, and when the conflict has ceased, to treat his adversary with humanity. The feeling of superiority which the practice of boxing gives an Englishman over a foreigner in private quarrels is carried into the field of battle, for the boxer cannot think of turning his back on a foe whom he has always deemed his inferior in combat. To this feeling, and to the habit of fighting from boyhood, hand to hand and face to face, more than to superior bodily strength and courage, I think may reasonably be attributed the superiority of English soldiers at the charge, and of English sailors in the act of boarding.

"If I am right in believing, as I sincerely do, that boxing and the laws of the ring, properly understood, are conducive to the ends of humanity, and also to the effectiveness of our soldiers and sailors, it is right that the practice and its regulations should be upheld. This is most effectually done by occasional matches for prizes, because many persons are then interested in seeing that the regulations of the ring are properly observed, and because, by the moderate encouragement of skilful pugilists, the art of boxing is preserved from degenerating into brutish belabouring. People are apt to suppose the bodily sufferings of these pugilists to be much greater than they really are. They are led into this belief from the high coloured descriptions of their combats which are wrought into the newspapers: but, in fact, pugilists seldom receive half such severity of punishment in their matches as labouring men frequently do in their casual rencontres. They defend themselves so well from severe blows, and their training prepares them so well for receiving as well as giving, that their bruises disappear in much less time than bruises received in common fights: frequently the successful pugilist quits the ring without receiving a scratch or discolouration of the skin. But this part of the subject may be fairly left to be settled by those who are most interested in it, viz. by the pugilists themselves;

they are free agents and able bodied men, and unless they prefer a drubbing for half an hour or an hour, for a recompense that enables them to live free from labour during a month or so, to working all the month through, they will not fight but work. The very tender hearted, therefore, who cannot bear to hear of a bruiser being bruised, but hunt him like a wild beast, and punish him almost to his death, in evidence of their consistency and humanity, would do well to display their tenderness in some other way, and to leave black eyes and bruised noses to the care of their owners.

"It is further objected, that a boxing match draws together a vast number of thieves and blackguards. This is very true; and so does an execution, a lord mayor's show, a court day at St. James's, and every other interesting sight which is open to the public at large.

"It cannot be denied, however, that boxing matches, being proscribed meetings, and unattended by any peace officers, are particularly favourable to the congregation of thieves and other ruffians. This defect of police keeps many respectable persons from such meetings who would otherwise gladly witness the exercises of the day. But lawless as these meetings are declared to be, and open as they are to the unrestrained operations of ruffians of every kind, it is remarkable that we seldom, if ever, hear of any riot taking place at any of them, or of any theft being committed beyond picking pockets. It is also remarkable, that after hundreds of fighting men and their followers have travelled some score miles, and are assembled on the place of action, and the ring is formed, and their excitement is at the highest, they suffer themselves to be driven from the scene of their much loved amusement like a flock of sheep, at the bidding of some clerical or meddling magistrate. This shows an obedience to persons in authority, which might hardly be expected under the circumstances, but it is creditable to the parties yielding it. It seems to show that the lessons of patience under suffering, and command of temper and submission to authority, taught by the laws of the ring, extend beyond it, and influence the habits and manners of the people connected with it in their general demeanour. It proves also that the cry against such meetings, as being breaches of the peace, is unfounded. It is evident, therefore, that boxing and the laws of the ring impose a most valuable restraint upon the ebulitions of rage and the thirst for revenge amongst the lower orders, teaching them to preserve their temper and self-possession under suffering, to scorn unfair advantages, to defend themselves with firmness, and to exercise the virtues of forbearance and humanity towards a fallen foe, and that they are also an excellent preparative for making good sailors and soldiers. It is further evident, that the anathemas and proscriptions which of late years have been levelled against the practice of boxing, have tended to reduce it to disrespect and disgrace; and the same unjust and hypocritical means, if persevered in and unopposed, are likely to cast it into disuse."

4016. *This letter puts the pros and cons* fairly before the public, which, after all, only amount to this, that fists are better than the stiletto. Time has wrought a wonderful change upon the Tom and Jerry days in which Mr. Barber Beaumont wrote, and few justices of the present time would, we think, be inclined to patronise the pugilistic ring. At least, if any of them were to do so openly, we think they ought not to be surprised at receiving a letter from the Secretary of State for the Home Department, or from the Lord Chancellor's secretary, or perhaps from both, requesting to be informed of the facts, which would doubtless be followed by an intimation that his lordship had felt it to be his duty to remove the pugilistic offenders' names from the Commission of the Peace for the county to which they belonged.

4017. *The history of boxing* opens too wide a field for us to enter upon extensively at the present day: indeed, were it not that this work professes to trace British pursuits from early times down to the present one, we do not know that we should have introduced it at all, which must be an apology for the brief notice we can now afford to give it.

4018. *Antiquity of boxing.* With regard to the antiquity of boxing, it requires no stretch of imagination to come to the conclusion that it is coeval with the existence of man himself; and that, as the *fist* is the first *weapon* with which man was provided, either for offence or defence, it takes precedence of all others. There can be no doubt that our forefathers, even from the days of Adam, settled their differences, or displayed their powers, in jest or earnest, with this *weapon;* and it is equally clear that with this, as with other weapons of a more deadly character, it was not till civilisation had made extensive advances that its use and cultivation, as a source of honour and of renown, became an object of public encouragement.

4019. *The classic authors afford* abundant proofs of the high estimation in which the use of the *fist* was held; and if we are to take these as our data, we find that *Pollux*, the twin brother of *Castor*, was the first who in pagan times obtained distinction by the use of his *fives*, conquering all who were opposed to him, and, with *Hercules*, obtaining a place among the gods for his *sparring* qualities. It would seem, however, that Pollux and his compeers were not content with the use of the simple weapon of Nature, but, following "the march of improvement," increased its power and formidable character by the addition of the *cæstus*, an artificial covering to the hand, composed of several thicknesses of raw hide, bound by thongs to the wrist and arm, which gave fearful and fatal effect to the blow that might be dealt.

4020. *Of the cæstus* there were various sorts, of which a few are here selected. The first is a representation of the most tremendous kind of CÆSTUS. The original, in bronze, was found at Herculaneum. It is of a proportion above the natural size; and appears to have belonged to the statue of some gladiator, armed for the fight. This cæstus was composed of several thicknesses of raw hides, strongly fastened together, in a circular form, and tied to the hand and part of the fore-arm; and yet, to prevent its hurting the *metacarpus*, a glove of thick worsted was used for the occasion, ending in a sort of fringe, called *vellus*. (*Voyage Pittoresque de Naples et de Sicile*, par l'Abbé de St. Non, vol. ii. p. 49.)

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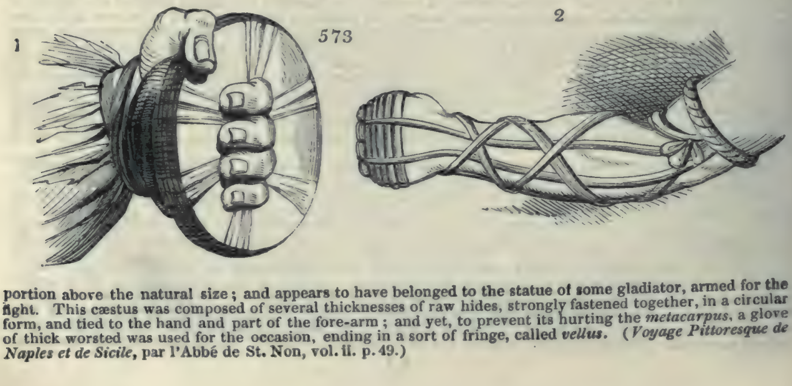
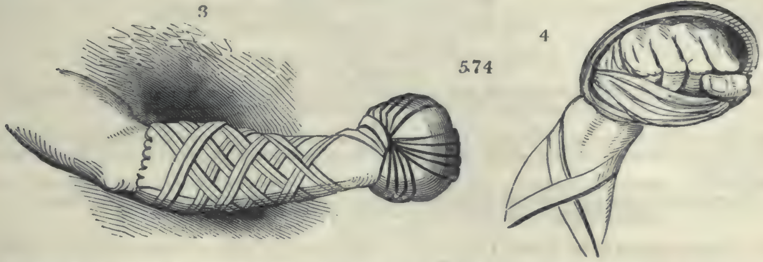


The second, however terrific in its operations, was not so destructive and injurious as the preceding one, and is copied from plate 20. of *Lenn's Costume des Peuples de l'Antiquité*, Liege, 1776.

The third represents a cæstus of nearly the same kind, and capable of administering the most death-like punishment. It will be seen in the first volume of *Bronzi del Museo Kirkeriano*, where Amycus is discovered fighting with this armour, in his conflict with Pollux.



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The fourth, materially different from the three preceding ones, though equally destructive in its operation, is copied from a bas-relief, found also at Herculaneum. It is also engraved as a tail-piece in the second volume of *St. Non's Voyage Pittoresque de Naples et de Sicile*, p. 51.

And here we have two of the members of "the ancient *prize-ring*" in actual combat, provided with these terrific aids to Nature.

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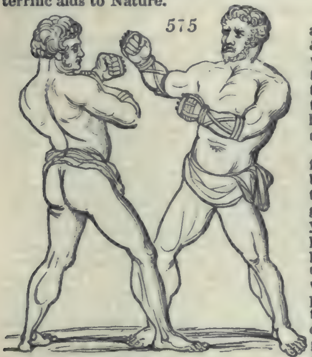

ANCIENT BOXERS

4021. *The use of these ponderous gauntlets*, many of them being armed with knobs of brass, blunt points of iron, plummets of lead, &c. led to the adoption of a species of *armour* for the head, which were called *amphotides*, and the object of which was to protect the temporal bones and arteries. They encompassed the ears with their thongs and ligaments, and were buckled under the chin or behind the head. They were not unlike helmets, and were composed of hides of bulls, studded with knobs of iron, or strongly quilted, in order to blunt the impetus of the blows.

4022. To pursue the ancient history of these games is however foreign to the purpose in view: it must suffice to say, therefore, that both among the Greeks and Romans the practice of pugilism, although differing in its main features from our modern and less dangerous combats, was considered essential in the education of their youth, from its manifest utility in "strengthening the body, dissipating all fear, and infusing a manly courage into the system." The power of punishment, rather than the *Art of Self-defence*, however, seems to have been the main object of the ancients; and he who dealt the heaviest blow, without regard to protecting his own person, stood foremost in the list of heroes. Not so in modern times; for, while the quantum of punishment, in the end, must decide the question of victory or defeat, yet the true British boxer gains most applause by the degree of science which he displays in defending his own person, while with quickness and precision he returns the intended *compliments* of his antagonist, and like a skilful chess-player, takes advantage of every opening which chance presents, thereby illustrating the value of coolness and self-possession at the moment when danger is most imminent. This short reference to the boxing propensities of the ancients, as contrasted with the practice of Englishmen in modern times, leads at once to

4023. *The progress of British boxing*. The annals of our country from the invasion of the Romans downwards sufficiently demonstrate that the native Briton trusted more to the strength of his arm, the muscular vigour of his frame, and the fearless attributes of his mind in the hour of danger, than to any artificial expedients; and that whether in attack or defence, the combination of those qualities rendered him at all times formidable in the eyes of his assailants, however skilled in the science or practice of warfare. If illustrations were required to establish this proposition, they are to be found in every page of our history, from the days of Alfred to the battle of Waterloo; and if it be asked how it is that Englishmen stand thus pre-eminent in the eyes of the world, it may be answered, that it is to be ascribed to the encouragement given to those manly games (boxing more especially) which are characteristic of their country, and which, while they invigorate the system, sustain and induce that moral courage, which experience has shown us to be the result as much of education as of constitution, perhaps more of the former than of the latter. The truth of this conclusion was so strongly impressed on the feelings of our forefathers, even in the most barbarous ages, that we find all their pastimes were tinctured with a desire to acquire superiority in athletic recreations, thus in peace inculcating those principles which in war became their safest reliance.

4024. *As civilisation advanced*, and when the ingenuity of man found mechanical substitutes for the weapons of Nature, still the value of the same principle was acknowledged and every where encouraged; and whether as soldiers or civilians, whether in the camp or on the village green, each man sought to excel his companion in mimic combat, thus preparing himself for the hour of real danger, and by his example infusing a spirit which all classes imbibed, and which to the hour in which we live gives to *John Bull* that proud pre-eminence in "the battle-field," acknowledged by the most jealous of his enemies.

4025. *In tracing the early history of boxing*, beyond occasional allusions to the rustic games of our "bold peasantry," little of authentic record can be found till about the year 1740, at which period public exhibitions of *professors* began to attract the attention, and obtain the patronage, not only of men of the highest rank in the country, but of all classes of the community. It must be admitted, that up to this period "the *science* of self-defence" had made but little progress, and that *strength* and *bottom*, combined with the *powers of endurance*, constituted the main recommendations of the practitioners. There was but little refinement in the public combats which took place for purses and other prizes. The system of *give and take* was alone adopted; and he who could hit the hardest, or submit to punishment with the best grace, became the favourite with the *amateurs*, who crowded the rude theatres in which the performances took place, and among whom, as in modern times, the issue of the battle constituted prolific sources of speculation and excitement. *Southwark fair*, *Smithfield*, *Moorfields*, and various other localities, had their "booths" and "rings" for the display of boxing, single stick, and broad sword; but to such an extent of ferocity were these combats at last carried, that they were partially suppressed.

4026. *Among others who stood pre-eminent* in the boxing circles of those days was *Fig*, who not only displayed his own powers, but, like a skilful manager, engaged other *stars* to gratify the taste of the frequenters of his theatre. As a specimen of the mode in which this gymnastic *manager* conducted the affairs of his "company," we give the following copy of one of his "bills of entertainment:"—

AT
FIG'S GREAT TIL'D BOOTH,
On the Bowling Green, Southwark,
During the Time of the *FAIR*,
(Which begins on SATURDAY, the 18th of SEPTEMBER),
The TOWN will be entertained with the
MANLY ARTS OF
Foil-play, Back-sword, Cudgelling, and Boxing,
in which
The noted PARKS, from Coventry, and the celebrated gentleman prize-fighter, Mr. MILLAR, will display their skill in a tilting-bout, showing the advantages of *Time* and *Measure:*
ALSO
Mr. JOHNSON, the great Swordsman, superior to any man in the world for his unrivalled display of the *hanging-guard*, in a grand attack of SELF-DEFENCE, against the all-powerful arm of the renowned SUTTON.
DELFORCE, the finished Cudgeller, will likewise exhibit his uncommon feats with the *single-stick;* and who challenges any man in the kingdom to enter the lists with him for a *broken-head* or a *belly-full!*
BUCKHORSE, and several other *Pugilists*, will show the Art of Boxing.
To conclude
With a GRAND PARADE by the Valiant FIG, who will exhibit his knowledge in various Combats—with the Foil, Back-sword, Cudgel, and Fist.
To begin each Day at Twelve o'Clock, and close at Ten.
Vivat Rex.
N.B. The Booth is fitted up in a most commodious manner, for the better reception of Gentlemen, &c. &c.

4027. *Fig of course had his rivals,* who in various parts of the town invited and received the encouragement of the lovers of manly sports.

4028. *It will be seen from the above bill*, that the *sword* and the *cudgel* were not less esteemed than the *fist*, and the combined exertions of the professors of each afforded attraction of no common character, and obtained the countenance of the most illustrious men in the country, among whom the old Duke of Cumberland then stood pre-eminent.

4029. *It would seem that Fig* signalised himself more as a *fencer* and *cudgeller* than as a *boxer;* nevertheless, his proficiency in the former gave him an advantage over those pugilists who were not equally accomplished; and his reputation rapidly increasing, he opened an *academy*, which was well known as *Fig's Amphitheatre.* This place was the resort of all classes, and was the scene of many desperate combats, which, with the character of the combatants, were subsequently recorded in a volume, entitled *Captain Godfrey's Treatise upon the useful Science of Defence*—a very amusing work, now extremely scarce, and dedicated to the Duke of Cumberland. Captain Godfrey was the *Captain Barclay* of his day, and was distinguished by his proficiency in all the athletic sports of his time, testing the merits of the practitioners by personal trials, in which even Fig himself found him "an awkward customer;" and in the task which he undertook of sketching the characters of those distinguished in his favourite pastimes, he proved himself not only an impartial but a competent historian. His treatise, which was published in 1747, is full of amusing anecdotes characteristically told, and many of them have been transferred into the first volume of *Boxiana*, edited by Mr. Pierce Egan—a work which may be fairly termed the class-book of pugilism. The captain thus speaks of Fig (whose name and character, by the bye, has recently been brought prominently into public notice in Mr. Ainsworth's romance of *Jack Sheppard*):—"I have purchased my knowledge, with many a broken head and bruises in every part of me. I chose to go mostly to Fig, and exercise with him; partly as I knew him to be the ablest master, and partly as he was of a rugged temper, and would spare no man, high or low, who took up a stick against him. I bore his rough treatment with determined patience, and followed him so long, that Fig, at last finding he could not have the beating of me at so cheap a rate as usual, did not show such fondness for my company. This was well known by gentlemen of distinguished rank, who used to be pleased in setting us together."

4030. *It is worthy of remark*, that in modern times similar trials took place between amateurs and pugilists, before the latter were enabled to obtain decided patronage. Colonel Barton and Captain Barclay often submitted new candidates to this ordeal; and frequent trials with the gloves took place, in which gentlemen who were first-rate adepts at the art either confirmed the pretensions or exposed the presumption of candidates for fistic fame.

4031. *The first dawn of science.* According to Captain Godfrey, Jack Broughton succeeded Fig in popularity, but far exceeded him in claims to patronage, from the introduction of those principles of science and regularity which tended to strip the practice of boxing of many of those attributes of *barbarism* with which it had previously been characterised. He may in fact be pronounced "the father of the science of the Art of Self-defence," as far as the simple use of the fist is concerned. For eighteen years he was THE CHAMPION OF ENGLAND, conquering all who came before him by the superiority of his skill, and raised himself to a pinnacle of fame which secured for him the countenance and patronage of the Duke of Cumberland and others, not less distinguished in the annals of their country. "Perfect master of time and measure," says Captain Godfrey, "he stopped as regularly as the swordsman, carried his blows truly in the line, stepped not back distrusting of himself to stop a blow, and fumbling in the return with an arm unaided by his body, producing but a kind of fly-flap blows, such as pastry-cooks used to beat insects from their tarts. No! Broughton stepped boldly and firmly in, bid welcome to the coming blow, received it with his guardian arm, then with a general summons of his swelling muscles, and his firm body seconding his arm, and supplying it with all its weight, poured the pile-driving force upon his man." In these few words are portrayed the fundamental ingredients for an accomplished boxer; and possessing them as he did to an extraordinary extent, Broughton soon took the lead in his profession, and found abundant supporters in the erection of an edifice in Hanway-street, Oxford-street, entitled *Broughton's New Amphitheatre.* In its appearance it was similar to Astley's Riding-school, and was surrounded with boxes, pit, and gallery, a commodious stage being erected in the centre of the circus for the use of the combatants. This theatre was opened on the 10th of March, 1743, and eclipsed all others which had previously existed. Advertisements went worth announcing a succession of battles between the first-rate pugilists of the day, who met manfully, foot to foot, and never quitted the stage till one or other was defeated, the reward to each being in proportion to the receipts at the door, according to an acknowleded scale; and these receipts, from the favour in which such exhibitions were held by all ranks, often amounted to very considerable sums.

4032. *First rules of boxing.* Broughton and his supporters soon found, from the disputes and discontents which frequently arose, that the adoption of some *fixed rules* for the guidance of the judges, as well as for the satisfaction of the combatants, were indispensable; and hence the following *Rules*, approved by the gentlemen who frequented the theatre, and agreed to by the pugilists, were publicly propounded on the 18th of August, 1743; and, what is not a little singular, from that period until the introduction of the NEW RULES, humanely promulgated after a fatal fight between *Owen Swift* and *Brighton Bill* in 1838 (which shall hereafter be described), these rules constituted almost the only guide in the decision of pugilistic contests, whether on a stage or on the turf.

BROUGHTON'S RULES.

1. That a square of a yard be chalked in the middle of the stage; and every fresh set-to after a fall, or being parted from the rails, each second is to bring his man to the side of the square, and place him opposite to the other; and till they are fairly set-to at the lines, it shall not be lawful for one to strike the other.

2. That in order to prevent any disputes, the time a man lies after a fall, if the second does not bring his man to the side of the square within the space of half a minute, he shall be deemed a beaten man.

3. That in every main battle, no person whatever shall be upon the stage except the principals and their seconds; the same rule to be observed in by-battles, except that in the latter Mr. BROUGHTON is allowed to be upon the stage to keep decorum, and to assist gentlemen in getting to their places, provided always he does not interfere in the battle; and whoever presumes to infringe these rules, to be turned immediately out of the house. Every body is to quit the stage as soon as the champions are stripped, before they set-to.

4. That no champion be deemed beaten unless he fails coming up to the line in the limited time, or that his own second declare him beaten. No second is to be allowed to ask his man's adversary any questions, or advise him to give out.

5. That in by-battles the winning man to have two thirds of the money given, which shall be publicly divided upon the stage, notwithstanding any private agreements made to the contrary.

6. That, to prevent disputes, in every main battle, the principals shall on coming on the stage choose from among the gentlemen present two umpires, who shall absolutely decide all disputes that may arise about the battle; and if the two umpires cannot agree, the said umpires to choose a third, who is to determine it.

7. That no person is to hit his adversary when he is down, or seize him by the ham, the breeches, or any part below the waist: a man on his knees to be reckoned down.

4033. *These rules*, it will be seen, laid the foundation for that *manly bearing* and *fair play*, which offers so wide a contrast to the practices of barbarous ages, when every advantage was admissible where brute strength or accidental casualties placed a combatant in the power of his antagonist. It is to be lamented that even in modern times the inhuman practices of uncivilised periods have subsisted to a disgraceful extent, and hence we have heard of *gouging*, that is to say, forcing out the eye of an antagonist with the thumb or finger; *purring*, kicking a man with nailed shoes as he lies on the ground, striking him in vital parts below the waistband, seizing him when on his knees, and administering punishment till life be extinct, and a variety of other savage expedients by which revenge or passion has been gratified; and it is remarkable that in those counties in which pugilism or prize-fights have been least encouraged, these horrors have been most frequent: we refer to Lancashire in particular, where even to this day that species of contest, called *up and down fighting*, that is, when a man is got down he is kept down and punished till incapable of motion, is permitted with impunity, unless indeed the death of the victim leads to the apprehension and trial of the survivor.

4034. *The adoption of Broughton's rules in the metropolis* soon led to their extensive dissemination in the provinces, and public boxing was thereby stripped of half its terrors; while in the adjustment of private quarrels, the settlement of the simple issue of "which was the better man" after "a fair stand-up fight," put an end to all bad feeling; and the conqueror or the conquered submitted with a good grace to "the fate of war," the strongest proof of the effects of cultivation, and the best test of a manly and honourable feeling.

4035. *To Broughton*, then, is to be ascribed the credit of two great reforms in the practice of pugilism, namely, the introduction of *science* and *humanity*; and by the moral effects these inculcated, more has been done to establish the high character of Englishmen for honour and fair play, than by all the eloquence of the pulpit or the senate. To Broughton also do we owe the introduction of *gloves*, or *mufflers*, for conducting *mock combats* or *sparring matches*, as they are now called, by which men receive lessons without injury, or display the *Art of Self-defence* without those painful consequences to which Captain Godfrey so willingly submitted, and which he so feelingly describes, but which deterred young aspirants from entering those arenas in which, after harmless initiation, they often became distinguished adepts, or were prepared to take their own parts in unavoidable encounters. Broughton thus announces his new invention in the *Daily Advertiser* of February, 1747: —

"Mr. Broughton proposes, with proper assistance, to open an academy at his house in the Haymarket, for the instruction of those who are willing to be initiated in the mystery of boxing, where the whole theory and practice of that truly British art, with all the various stops, blows, cross-buttocks, &c. incident to combatants, will be fully taught and explained: and that persons of quality and distinction may not be debarred from entering into a COURSE OF THOSE LECTURES, they will be given with the utmost tenderness and regard to the delicacy of the frame and constitution of the pupil, for which reason *mufflers* are provided, that will effectually secure them from the inconveniency of black eyes, broken jaws, and bloody noses."

4036. *We do not profess here to give a history of all the men who followed in the steps of Broughton*, of whose doings a very correct summary will be found in the first volume of *Boxiana*, already alluded to; it must suffice to say that Broughton, after having been eighteen years CHAMPION OF ENGLAND, was deprived of his laurels on the 10th of April, 1750, by a man named *Slack* (the grandfather of the Belchers, heroes of modern times), who contrived by repeated blows to render him completely blind; and in fourteen minutes, being unable to see his antagonist, he gave in, so much to the displeasure of the Duke of Cumberland, who was his greatest patron, that he withdrew his countenance from him. Soon after this his amphitheatre was closed, and he never fought again. *Want of training*, and *holding his antagonist too lightly*, it is said by cotemporary writers, led to this result, a fate which has befallen many men of the same class in after times from the same cause. He lived to the good old age of eighty-five years, and died on January 8. 1789, at Walcott-place, Lambeth, in the churchyard of which parish he was interred.

4037. *The second era of science*. From the days of Broughton we advance to the next era of pugilistic improvement, and introduce to our readers *Mendoza*, who as a teacher of "the science" may be said to have trodden in the steps of his great predecessor, and to have far exceeded him in the refinements of the art. In poetry, in painting, and in music, we have our natural geniuses, who soar above all competitors in the brilliancy of their works; and so it would seem it is in the rougher paths of manly exercises. Mendoza was a natural genius in the elegant and effective use of his *fists*; when yet a boy, the ring and its adjuncts superseded all other considerations in his mind. He studied the *Art of Self-defence* with the perseverance of an enthusiast; and at length reached a degree of perfection which placed him above all his rivals, and as a "professor" was known in almost every town in the kingdom.

4038. *The great cotemporary of Mendoza was Humphries*, denominated "the gentleman boxer." He was remarkably graceful in his action, quick and effective in his deliveries, and an excellent "stopper," hitting with his right and stopping with his left, the very opposite of the tactics of modern professors. Mendoza was a pupil of Humphries, but soon proved himself his superior, and hence took the lead.

4039. *At this period*, 1786, the sports of the ring received a new impetus. Royalty again condescended to throw its shield over the old *national game*, and men of the highest rank and consequence in the kingdom not only frequented the schools of the teachers, but encouraged and were present at those "prize-fights" which became the rage, and were attended by thousands and tens of thousands of all ranks of his majesty's subjects. A fight between *Humphries* and a man named *Martin*, styled "the Bath Butcher," which took place on a stage at Newmarket on the 3d of May, 1786, created extraordinary interest, and was attended by their royal highnesses the Prince of Wales and the Duke of York, the Duke of Orleans, and most of the French nobility who were then in England. A guinea was the price of admission to the combat, a sum which hundreds willingly paid, and it was calculated that from thirty to forty thousand pounds were hazarded on the event. It was a finished display of science on both sides, terminating in the defeat of Martin; but such was the manliness displayed on both sides, that the winner and the loser seemed alike to have secured the "golden opinions" of the spectators.

4040. *All eyes were now directed towards a trial of merit* between Humphries and his formidable pupil Mendoza, and as "where there's a will there's a way," means were soon found to bring their pretensions to the test. A match was made for four hundred guineas, to come off on a four and twenty feet stage, in a paddock at Odiham in Hampshire, on the 9th of January, 1788. The interest excited was beyond all precedent, and the assemblage in point of rank and influence was little short (barring the ladies) of the splendid display at the tournament of Eglinton Castle. The fight lasted twenty-eight minutes and fifty-four seconds, and was characterised by a degree of skill and dexterity, accompanied by a severity of punishment, which was never before witnessed. The fluctuations were numerous, each in turn becoming the favourite, till at last Mendoza receiving "a kidney hit" on the loins, followed up by a forcible delivery on the neck, he fell with his leg under him, which was sprained, and was unable to come again, thus giving the victory to Humphries. It was extremely difficult to determine which was the neatest pugilist in the fight, so much of science, elegance, activity, and bottom, were displayed on both sides. Neither Mendoza nor his friends were satisfied with this result, and the men were again matched to fight on the 6th of May, 1789, in Mr. Thornton's park at Stilton, where a suitable building was erected for the purpose, when Mendoza regained his lost laurels. It was now "trick and tie," and a third battle took place at Doncaster on the 29th of September, 1790, when Mendoza was once more victorious, thus putting an end to all doubts as to his superiority, although it must be admitted his success was not bought without serious punishment. This was the last battle of Humphries, but his correct deportment secured him general respect, and he afterwards became a coal merchant, and obtained a comfortable livelihood. The newspapers at this period were filled with accounts of these combats; and such was the interest they excited, that they were looked for with the avidity of a "London gazette," announcing the issue of some battle on which the fate of empires depended.

4041. *If encouragement were wanting*, a new impetus was now given to the boxing academies, and pupils of the highest grade crowded to "the professors," among whom Mendoza took a deserved lead, and had the honour of setting-to and giving lessons to some of the most illustrious men in the kingdom. An anecdote has been told us by a gentleman who was one of Mendoza's constant pupils, strongly illustrative of the advantage of science, and of the affinity which exists between the natural and the artificial weapon. A celebrated French fencing-master, who had been drawn to Mendoza's school, and saw him set-to, was so struck with his tact and quickness in parrying the heaviest blows, that he said he wanted but a little tuition in fencing to render him a perfect master of his art, and for this purpose offered to give him a few lessons with the foils. Mendoza consented, and in a very short time acquired so much knowledge of the art of throwing aside a coming blow by a simple action of the arm, that he acknowledged, with gratitude, the benefit he had derived.

4042. *At this season*, independently of the schools, the theatres were constantly the scenes of sparring exhibitions, and crowded audiences proved the great popularity of the sport, boxes, pits, and galleries being invariably thronged on such occasions.

4043. *The modern or third era of science.* The pride of *Mendoza*, like that of *Broughton*, was destined to have a fall—he in turn was to be driven from his "high estate." However perfect in his art, the march of improvement was progressive. A new *star* arose in the milling hemisphere. This was Mr. *John Jackson*, who may with truth be pronounced the father of the *modern school* of boxing, and who not only supplanted the Jew, but took a higher position in the scale of society, and obtained more influence among all ranks, from the peer to the peasant, from the firmness and urbanity of his manners, combined with the finished requisites of a boxer, than any man by whom he had been preceded, or by whom he has been followed.

4044. *Mr. Jackson was born in London*, and was the son of an eminent builder, by whom the arch was thrown over the old Fleet Ditch. His uncles were farmers and tenants of the Duke of Bedford and the Marquis of Hertford. Nature had bestowed upon him all those athletic requisites which constitute the *beau ideal* of perfect manhood. There was a happy combination of muscular development, with proportionate symmetry in his frame (his height was five feet eleven, and his weight fourteen stone), which rendered him a fitting model for the sculptor, and excited the admiration of all those by whom these qualities are appreciated. At the age of nineteen he became a frequenter of the sparring schools, and soon displayed such talents as proved that he was destined to eclipse the more favoured of his cotemporaries; added to which, possessing as he did the *suaviter in modo*, as well as the *fortiter in re*, he soon found patrons of the highest grade.

4045. *Mr. Jackson's first public contest*, under the patronage of the Hon. *Harvey Aston*, was with *Fewterel*, a Birmingham hero, on the 9th of June, 1788, in a roped ring near Brighton, which was honoured by the presence of the Prince of Wales. Victory crowned this maiden effort, and Mr. Jackson received a gratifying token of approbation from the prince. His next effort was with *George the Brewer*, on the 12th of March, 1789, in which he was defeated at the moment when conquest was within his grasp, from slipping down on the stage, owing to the awkward construction of the floor, and its humid state from the falling rain, dislocating his ancle, and breaking the small bone of his leg. He offered to finish the battle while tied to a chair, but this was not permitted. His third and last battle was with the redoubtable *Mendoza*, at Hornchurch in Essex, on the 15th of April, 1795. It was a short but fierce battle, but in nine rounds, and four minutes and a half, Jackson was the victor, jumping from the stage little the worse for wear, while Mendoza was very much beaten, and dreadfully exhausted. The Duke of Hamilton and a vast number of noblemen and gentlemen were present, and testified their high admiration of the scientific precision evinced by the winner, while they sympathised in the overthrow of a man who had so long enjoyed "the sunshine of fortune," and which it is to be lamented he did not yet know how to secure by a due sense of his own position, and a proper respect for those who, from principle, gave liberal encouragement to his "calling." Independent of his pugilistic superiority, Mr. Jackson was distinguished for his extraordinary powers as a runner of a short distance, and as a leaper no man of his day was equal to him at a standing jump, of which many extraordinary feats are on record. His muscular strength was equal to his bodily activity, and in the presence of Mr. Harvey Combe, a never shrinking advocate for the national sports of his countrymen, he lifted *ten hundred weight and a quarter*, and with eighty-four pounds' weight on his little finger wrote his own name.

4046. *Mr. Jackson's Rooms.* The high reputation which Mr. Jackson had now attained, and the universal esteem in which he was held as a teacher of his art, led him to establish rooms at No. 13. Bond-street, not only for giving lessons to his numerous pupils, but for the introduction of such men as had either distinguished themselves in combat, or were desirous of seeking fame in the pugilistic arena. Here all the *élite* of the fashionable world — men who have since distinguished themselves in the senate, at the bar, and in the field, and viewed boxing as a national game pregnant with the best consequences, where the manly vigour of their countrymen was to be encouraged and promoted — were daily assembled; noblemen and gentlemen of the highest rank did not disdain to take the gloves with the accomplished Jackson, and the "sets too" even among themselves evinced a knowledge of the science, a power of endurance, and a degree of vigour equal, if not in many instances superior, to the public pugilists of the time, with whom they often "tried their hands," and came off victorious; qualities, the value of which, in after life, they acknowledged when the roar of battle, or the death struggle with the foes of their country, by land or by sea, required the exercise of those energies which the preparative practice of Jackson's rooms had nurtured and developed. In these associations there was none of the finikin foppery of modern times; there were no apprehensions of the derangement of well curled locks or pretty faces; men, and noblemen too, met foot to foot and fist to fist, regardless of consequences, dealing such blows on each other's heads, as often deprived them of momentary sensation.

4047. *Mr. Jackson's mode of instruction* was at once philosophical and practical. Himself the most accomplished boxer of his day, he knew the principles upon which attack or defence were to be conducted; and these he explained, not by showing results, but by demonstrating "cause and effect" with a master mind and a master hand. He taught his pupils to feel that personal confidence and contempt of danger were the first and best qualities of a pugilist. He showed them, that to hit with effect they must first judge their *distance*, that is to say, to judge when the delivery of a blow would produce the most conclusive consequence; for, as he properly inculcated, if a blow reached its destination short of the weight and vigour of the muscle by which it ought to be propelled, like a spent shot it was of little avail, and had better not be attempted. He showed that men ought to fight as well with their legs as with their hands; and that unless they were quick and active with the former, so as to spring in and out as opportunity demanded, the intent of the latter would be altogether frustrated. He decried all stiffness of position, and showed that the impulses of nature were always best aided by that light springing ease, which in the ordinary movements of man, when uninfluenced by the posture master, were obvious and inherent. He showed, that with the body a little bent, the head and shoulders forward, and the knees in like manner elastic and easy, and with the hands well up, a man was prepared for advance or retreat, as the quickness of his eye and the exercise of self-possession might suggest. "Head after all," he said, "was the fulcrum from which all men ought to act. Here the general issued his orders; here the *pros* and the *cons* were scanned, and the order to hit or to stop, to step forward or step back, was issued with firmness and must be obeyed with precision. The limbs must all be ready for the call, and he who took advantage at the right time was sure to bear off the prize." *Ambi-dexterity*, that is, the power of hitting and stopping with the left and the right with equal quickness, he also strongly inculcated, and by his own example showed, that he could stop the "one two" (hits with both hands) either with his right or his left hand, and either return with the same hand, or bring in the reserve fist with stunning force. He clearly showed that fighting at the body was a dangerous game; for, with a well instructed pugilist, he who attempted it was sure to be met in the head before his knuckles reached the body of his antagonist, and with double force too, because he gave the impetus of his own rush to the coming blow. These lessons were conveyed in a way to produce conviction; for, as Mr. Jackson defied any man to hit him, he always called upon his pupil to try his own tactics, and the issue invariably verified the truth of his axiom, whatever it might be.

4048. *Shaw, the life-guardsman.* This was singularly demonstrated in the case of Shaw, the life-guardsman, whom Mr. Jackson taught in his rooms. Shaw was a natural genius, who in his regimental exercises evinced so much strength and vigour as to attract the attention of his officers. He stood six feet and half an inch in height, and weighed fifteen stone. *Jem Belcher* was the first to discover this "wild flower," when yet a "bud," in a turn-up with a heavier antagonist than himself at Woolaston, in Nottinghamshire, of which village he was a native. Belcher was accidentally present, and seeing that the youth only wanted "a leaf out of his book," he stepped up, and gave him such hints as soon enabled him to turn the scale in his favour, and humble the "bounce" of his opponent. The praise bestowed on him on this occasion by Belcher no doubt sowed the seed which afterwards flourished with such pure British luxuriance. He became a life-guardsman, and, as we have said, attracting the notice of his officers, most of whom were admirers of the sports of the ring, he was introduced to Colonel Barton, and by him was encouraged to "show" at the Fives-court, in Little St. Martin's-street, then the principal theatre for public sparring, where he gained experience by setting-to with some of the first practitioners of the day. As "a star" of promising magnitude, he was introduced to Mr. Jackson's rooms. In a set-to with Captain Barclay, who like Captain Godfrey never shrunk from punishment, his length and weight enabled him to plant a blow by which the ribs of the captain were dislocated, thereby fully satisfying him that he had no commoner to deal with Mr. Jackson was now requested to take this new candidate in hand, and soon discovered his defects. Shaw, on catechistical examination, told Mr. Jackson he was "a main good un at the goots;" that is to say, he could plant his body blows with finishing effect. "Ay," said Mr. Jackson, "when you have a *yokel* (an inexperienced man) to deal with, but with a master of the art you would find that game a bad one." Shaw was incredulous; upon which Mr. Jackson put on the gloves, and called upon our hero not to mind him, but to do his worst. Shaw, having got over his *mauvaise honte*, which the presence of so many gentlemen induced, did as he was bid, and getting a little warm, tried his favourite "hit at the goots;" but in every attempt Mr. Jackson had him on the head with such severity, as not only to send his head back, but as altogether to set his "blow at the goots" completely at nought. One practical illustration is worth fifty arguments. Shaw at once admitted his error; and under Mr. Jackson's tuition soon improved so much as to be considered a man of promise, with the championship in prospect. He fought, however, only two battles in the prize-ring, the one with a big countryman named *Burrows*, at Coombe Warren, in 1812, and the other with *Ned Painter*, on the 18th of April, 1815, for a purse of 50 guineas, in which, after a tremendous battle of twenty-eight minutes, he was successful, having knocked Painter down no less than ten times. It must be admitted, however, that he had the superiority of length, weight, and condition, having been in daily training, while Painter was a prisoner for debt in the Fleet, and had only come out upon a day rule. Such was the influence of this victory however upon Shaw, that he challenged *all England*, and no doubt would have had to encounter *Tom Cribb*, the champion of that day, but for his call to a field, the memory of which will ever live in the page of history and in the hearts of Englishmen — we mean the field of *Waterloo!* He departed with his regiment to join the Duke of Wellington, was present on the first day of the battle of Waterloo, and was wounded in the breast; but on the glorious *Eighteenth of June* he could not be restrained from joining his gallant comrades, and in the last overwhelming charge which decided the fate of that day, our hero was seen in the thickest of the battle mowing down the enemies of his country like chaff, and actually killing or disabling ten cuirassiers with his own trusty sword, wielded by the sinewy arm and lion heart of a *British pugilist*, till at last that fatal antagonist, whose blows no man can parry, stepped in with his "finishing hit"—a pistol or musket ball penetrated poor Shaw's body, and he fell, covered with glory, leaving behind him a name imperishable in the annals of bravery, and hailed with pride and satisfaction by every man who, like himself, had sought distinction in the *national games of old England*.

4049. *In Paul's Letters to his Kinsfolk*, written by Sir Walter Scott, describing the battle of Waterloo, he thus observes: — "Amid the confusion presented by the fiercest and closest cavalry fight which had ever been seen, many individuals distinguished themselves by feats of personal strength and valour. Among these should not be forgotten Shaw, a corporal of the life-guards, *well known as a pugilistic champion*, and equally formidable as a swordsman. *He is supposed to have slain or disabled ten Frenchmen* with his own hand, before he was killed by a musket or pistol shot."

4050. *The science of the sword* Shaw also possessed in a superior degree; and this science tended much to accelerate the fortune of the day, in reducing the hitherto considered invincible French cuirassiers. We shall, perhaps, be excused for this digression; but as pugilism is our theme, it is impossible, on the name of *Shaw* being mentioned, that we could refrain from this short tribute to his memory, convinced as we are that his early lessons in the art of boxing tended more to improve that stamina, and confirm that bold and fearless bearing which has gained for him a deathless fame, than all the sophistry of the most consummate lecturers on the art of war.

4051. *Mr. Gully, Gregson, Cribb, Oliver, Painter, Jem and Tom Belcher, Burke, Spring, Peter Crawley, Shelton, Molineaux the black, Richmond, Maddox, Turner, Jack Rondall, Martin*, and all the "pugilists famed in story," were frequenters of Mr. Jackson's rooms; and here their merits were discussed, and their sparring qualities put to the test, for the amusement and gratification of those distinguished characters who afterwards became their patrons; and such was the popularity the sport had now attained, notwithstanding the efforts of its enemies, who were as rife in those days as they are at present, that it was countenanced by men of the first distinction.

4052. *The Pugilistic Club.* At this season a club, under the title of "The Pugilistic Club," was formed, of which men of the highest rank became members. These gentlemen felt that a great *national good* was to be attained by the encouragement of those sports, by which the moral energies of the people were to be developed and promoted. They saw that precept without example, especially among the classes to whom they looked, was mere *moonshine*, and therefore they manfully stepped forward, regardless of the *cant* by which they were assailed, to carry out the principles which they approved.

4053. *A meeting was held at Mr. Jackson's rooms*, at which the objects and purposes of the club were developed, rules and regulations were adopted, and subscriptions contributed, which upwards of one hundred and twenty members agreed to continue annually; nay, even *a uniform*, which consisted of blue coats, yellow kerseymere waistcoats, with the letters P. C. engraved on the buttons, was adopted and worn on all public occasions. A regular treasurer and secretary was appointed; and from the fund sums were awarded, either to promote matches, or to offer separate prizes, which varied from 50 to 10 guineas.

Ropes and *stakes* to form the fighting *ring* were also purchased, and made of the best materials. The stakes, eight in number, were capped and shod with iron, distinguished at the tops with the letters P. C., and were entrusted to a well known character, *Bill Gibbons*, who was appointed "the commissary of the Fancy," and took his instructions from the secretary as to "the when" and "the where" his *matériel* were to be called into use, being provided with a swift horse and a "drag," to convey them to and from the place of destination. A fee proportioned to the distance was paid him out of the funds of the club for his labours, in which he always found willing assistants.

4054. *This club held its first meeting* at the Thatched House Tavern, St. James's-street, on the 22d of May, 1814, Sir Henry Smith, Baronet, in the chair. Upwards of fifty members sat down to a sumptuous dinner, to which Mr. Jackson, Mr. Gully, Tom Cribb, Tom Belcher, Oliver, and others, were invited. The scene was altogether most gratifying; and Lord Yarmouth (afterwards Marquis of Hertford), who was present, in a speech distinguished for sound reasoning and manly eloquence, expatiated on the great advantage of pugilism in a national point of view.

4055. *These may be considered as the palmy days of the ring;* but previous to this date, and subsequent to the defeat of Mendoza by Mr. Jackson, a great number of pugilists were introduced to the notice of the amateurs, all of whom repeatedly fought, and attracted the attention and received the countenance of men of rank, including the Dukes of York and Clarence, the Duke of Queensbury, the Earl of Albemarle, the Earl of Sefton, the Marquis of Worcester (the late Duke of Beaufort), Sir W. W. Wynne, the Marquis of Tweeddale, Lords Byron, Craven, Somerville, Barrymore Pomfret, and Fife, Colonel Berkeley (afterwards Earl Fitzhardinge), Harvey Combe, Squire Harrison, and others too numerous to mention, but all tending to show the high auspices under which the sports of the ring flourished and were encouraged.

4056. *As correct historians,* we must not attempt to disguise, that even in those times strong prejudices existed in the minds of some against the display of pugilistic powers. Fights were often interrupted by the magistrates, many of the professors were arrested and prosecuted, and among so many battles some lives were occasionally sacrificed. These occurrences were purely accidental, and arising from the casualties inseparable from the nature of "the game;" but we doubt whether in other sports more peaceable, such as hunting, shooting, cricket, wrestling, and horse-racing, the proportion of fatal accidents were not at least as numerous, if not much more so, and would have furnished as strong an argument for the suppression of the one sport as the other; for as far as malice was concerned, it must have been known that two men, entering "the ring" in fair competition for fame, had as little malice towards each other as two jockeys in a race, or any other two competitors in the exciting sports of our country.

4057. *In referring to the descriptions of the doings of the men and their cotemporaries,* to whom we have alluded, and which will be found amply detailed in *Boxiana*, it will be seen that some of the most remarkable battles were fought upon "Moulsey Hurst," which, from its proximity to town and local advantages, being as it were isolated from all habitations, was much frequented; and as an additional reason for this choice, we may mention the proximity of "Bushy," the residence of the Duke of Clarence, under whose fostering wing as it were, for he was frequently present, more impunity was enjoyed.

4058. *The formation of the Pugilistic Club* may be said to have commenced a *new era*, in which there was a combination of order and regularity in the proceedings of *the Fancy*, as the followers of the ring were called, which was productive of great advantage; and although all matches did not originate with the club, their countenance and sanction were sought, and their ropes and stakes, under the guidance of "the commissary," were invariably brought into use.

4059. *Sparring before kings and princes.* About this period an event occurred which gave additional lustre, if the phrase may be allowed, to the pugilistic school. It may be in the recollection of our readers, that in the year 1814, in the short peace previous to the return of Buonaparte from Elba, the Emperor of Russia, the King of Prussia, and other illustrious foreigners, paid a visit to the Prince Regent. Among other sports, characteristic of our country, they had heard much of our "boxing fame," and expressed a strong desire to witness a sparring display among some of the most celebrated professors of the day. This wish was at once gratified by Lord Lowther, who applied to Mr. Jackson to select the *dramatis personæ*, and a day was fixed for their assemblage at Lord Lowther's house in Pall-mall. On this occasion the Emperor of Russia and Generals Platoff and Blucher were present. This was on the 15th of June, 1814. The setting-to was among some of the best men of the day; and the rules of British boxing were explained in so clear and satisfactory a manner to the distinguished group, that they expressed their warm approbation at so manly and generous a manner of settling personal quarrels; and indeed were so delighted, that they requested the exhibition might be repeated on the following Friday, when, in addition to the above visiters, the King of Prussia, the Prince Royal of Prussia, the Prince of Mecklenburgh, General D'York, and several others, were present. Some admirable specimens of the *Art of Self-defence* were displayed by *Mr. Jackson, Belcher, Cribb, Richmond, Painter, Oliver,* and others; the *sets-to* were in general excellent; and the skill of Mr. Jackson excited general admiration, while the symmetry of his figure and fine muscular development did not pass unnoticed. Tom Cribb, then "the Champion of England," also had his share of observation, and particularly attracted the notice of Blucher. The royal guests and their attendants expressed the great gratification they had experienced, and upon taking their departure complimented Lord Lowther as the patron of so manly and praiseworthy a trait of the national sports of his country. Little did this splendid group forsee that, on the first anniversary of that meeting, one of that very class whose evolutions they had then witnessed would, in the field of Waterloo, and almost under the eye of Blucher, afford an additional illustration of the great advantage to be derived from the preparatory inductions of the prize-ring. We may here remark, that similar exhibitions were subsequently got up for the amusement of other of our foreign visiters; and that a very few years back, at Mr. Angelo's rooms in St. James's-street, the Prince of Orange and his two sons, at their own particular request, were similarly gratified, and were not less warm in their expressions of approval and acknowledgments of the great advantages to be derived from the promulgation and encouragement of such sports with their noble and manly principles.

4060. *The Fives-court* in Little St. Martin's-street was the "high change" of the *milling* circles, both *Corinthians* and *Patricians.* This building has long since been swept away in the march of metropolitan improvements; but for many years it was the gymnasium in which aspirants to future fame made their public *début*, as well as the *stage* on which established favourites displayed their points and their perfections in the fistic art. It was a large oblong court with high walls, the light being admitted through interstices at the top, covered with network necessary to prevent the loss of the balls in the games of fives and tennis, which were here practised to a great extent by some of the most celebrated literary men of the day, who could thus in a short time concentrate a degree of exercise equal to three or four hours' hard walk elsewhere, thereby saving time, which, to a man whose "time is his marketable commodity," was of no small importance.

4061. *The principal occasions on which the court became the focus for the professors of boxing* were those on which *benefits* were taken by public favourites, and these were generally either immediately before or after some great battle. Placards and hand-bills were put forth, announcing "a treat for the fancy," and specifying the names of those heroes whose boxing qualifications entitled them to distinction. Tickets were distributed at 3*s.* each, the regular price of admission; and large as the area was, it was frequently crowded to suffocation. A small elevated dressing-room at one end, with a window looking into the court, was the place set apart for the aristocracy; and here was often seen congregated some dozens of noblemen and persons of high rank, whose liberal contributions (many of them giving a guinea for a ticket) added greatly to the receipts of the *beneficiare*, who usually stood at the door of entrance himself, with a capacious money box to receive the cash. Many of these benefits have been known to produce little short of 200*l.*

4062. *A stage was erected in the centre of the court*, about four feet from the ground, upon which the sparring *bouts* with the gloves took place; and care was taken so to match men, according to proficiency and weight, as to enhance the interest of the exhibition. The men were usually stripped to their waists, so that the full development of their muscular powers was perceptible, and every movement could be accurately appreciated. The sports commenced with the third and fourth rate performers, with an occasional display between two *roughs* (novices), who indulged the spectators with a glove fight, "drawing corks," and administering contusions, which frequently led to remunerating showers of *copper*, often agreeably relieved by the lights and shades of *silver*. The scale of merit gradually ascended to the *stars*, who vied with each other to show the perfection of the art, and many distinguished competitors often "fought their battles o'er again," drawing down thunders of applause. The amusements usually closed with a "wind up" between the man whose benefit was taken and some chosen antagonist. The former, before he set-to, in a pithy if not an eloquent speech, returned thanks for the honour conferred upon him. Many new men here made their bows, and laid the ground for future matches. Challenges were given and accepted, and appointments made at some sporting house, usually kept by a retired pugilist, to draw up articles, deposit the stakes, and agree upon time and place. At these meetings the house of rendezvous was thronged to excess, the backers of both men attending to settle the preliminaries, as well as their respective admirers, when bets were often made to an enormous extent — the cash, among strangers, being deposited in the hands of the host, who kept a book for registering his receipts.

4063. *The Tennis-court.* At a later period of our history, in consequence of some jealousy, a *split* took place among some of the "great actors," and a rival benefit establishment was adopted at the Tennis-court in Windmill-street, which after the Fives-court had been pulled down, became the only arena for such purposes, with the exception of occasional displays at the public theatres, which were often most attractive, and not less profitable. The "minor fry" usually took benefits at public-houses. It does not appear, however, that wisdom followed experience; for as time progressed, there was a gradual falling off in the character of the exhibitions at the Tennis-court. Men were announced to *set-to* who never made their appearance — a contemptible spirit of rivalship arose — the competitors were unequally matched — gentlemen disposed to uphold the principle of boxing became disgusted, and gradually withdrew their patronage — the boxing men suicidically destroyed "the goose which laid the golden egg," and at last benefits ceased to be profitable, and the Tennis-court having been let by the proprietor for the purposes of a theatre of another description, the *milling* fraternity lost their "local habitation" and almost "their name," a result attributable solely to themselves, a fitting issue to a false pride, which the generous indulgence of their patrons but too frequently engendered.

4064. *Patriotic and humane character of the boxing fraternity.* Although truth obliges us thus to record the approaching "decline of the *milling empire*," we must "try back," and "render unto Cæsar that which is Cæsar's due." To the credit of the professors and patrons of boxing, they were never "backward in coming forward" to aid the work of charity, or to answer those appeals to public sympathy which the ravages of war, the visitations of Providence, the distresses of trade and commerce, or the afflictions of private calamity, frequently excited. Under the active auspices of Mr. Jackson, who was ever foremost in drawing forth the brighter features of his "companions in arms," benefits were frequently got up to meet existing exigences: thus "the starving Irish," "the British prisoners in France," "the Portuguese unfortunates," "the suffering families of the heroes who had fallen and bled on the plains of Waterloo," "the famishing weavers, and the claims of widows, wives and children whose misfortunes had been occasioned or aggravated by the casualties of the ring," with other instances too numerous to detail, afforded opportunities for appeals which were never made in vain. It was then that the generous spirit which warmed the heart of a true British boxer shone forth with its sterling brilliancy; then all selfishness was set aside, and no sooner was "the standard of charity" unfurled, than every man who could wield a fist, from the olden veteran to the youngest practitioner, rushed forward, anxious and ardent to evince the feelings of his soul, and to lend his hand to the work of benevolence. There were then no skulkers, no humbugging apologies; and the difficulty only was to keep within compass the host of talent which stood forth nerved at all points to "do battle" in aid of such purposes. Hundreds and hundreds of pounds have been thus raised, large sums have been handed over to public subscriptions, and in private the tears of the widowed mother, and the cries of starving children, have thus been dried and hushed by the generous contributions of the boxers of England and their staunch and liberal admirers.

4065. *In granting rewards to merit*, equal generosity has been displayed. The valiant but unsuccessful pugilist never went without "a healing salve" to his bodily and mental wounds. At the conclusion of every fight, Mr. Jackson went round, "hat in hand," to raise a subscription for the beaten man. Never was this appeal made in vain; and in proportion to the qualities exhibited, his collections became successful, in many instances the loser actually receiving as much as the winner, a proof that *honest* valour never went without its consideration. Even Mr. Jackson himself participated in this noble trait in the character of pugilistic amateurs, for in the year 1820 a service of plate of the most magnificent description was presented to him of the value of 300 guineas, to which all ranks contributed, from the prince to the prize-fighter. In like manner were *silver cups* subscribed for, and presented to the leading members of the ring, including Tom Cribb, Tom Spring, Ned Neal, Josh. Hudson, and others, which on all public festivals at their respective houses stand prominent in the decorations of their tables, and are often filled with generous wine, and emptied to the ever welcome toast, "*Success to British boxing, and its honest and honourable principles!*"

4066. *Temporary decline of the ring—its history in modern times.* We have already said that the period of the establishment of "The Pugilistic Club," in 1814, might be termed "the palmy days of the ring," and we shall now briefly refer to its history from that time to the present. It would be foreign to our purpose to introduce the names of the numerous new competitors who, subsequent to 1814, "strutted their hour upon the stage," or "illumined the milling hemisphere;" we shall hereafter refer to those authorities where their deeds will be found duly chronicled; but it may be as well to say, it was after this season that *Tom Spring* who succeeded *Tom Cribb* as "Champion of England," and *Jem Ward*, who followed Tom Spring, made their appearance; as did *Jack Langan*, with whom Spring closed his fighting career; *Jack Randall*, truly called the *Nonpareil* of the middle weights (ten stone seven pounds); and *Dick Curtis*, the *Pink* of the light weights (nine stone), and denominated "*the Pet of the Fancy*."

4067. *From* 1814 *to* 1820 *the Pugilistic Club increased in influence and stability*, fresh members were constantly enrolling, and Jackson's rooms were still the most attractive lounge at the West End of the town. Fight followed fight in quick succession, and the lively scenes and extraordinary display of what in those days were called Corinthian equipages, which followed to the scene of action, gave support to these breaches of the peace. Parish constables were idle and inert, the rural police were not in existence, and the efforts of nine magistrates who were adverse to these exhibitions would be paralysed by the quiet acquiescence of a tenth who was. So a fight once arranged was pretty sure to come off sooner or later, until it became part of the tactics to arrange different localities to which to adjourn in case of interruption at the place of meeting. These scrambles across country of lawless mobs — many of them bent on plunder — were far worse than steadily conducted fights, and did much to unpopularise and precipitate the downfall of the ring. In these hurried flights the most incongruous vehicles used to be enlisted, and we have even known a hearse put in requisition for the conveyance of passengers; for whatever the parties chose to claim they generally got, so great was their preponderance of power, and so imperative their demands.

4068. *Continued patronage of pugilists by George the Fourth.* It has been already stated, that the Prince of Wales in his youthful days was a staunch patron of boxing; and although he discontinued, by his presence, to give countenance to the sport, yet frequent indications of his desire for its promotion were observable. He was a constant reader of the sporting papers, and was familiar with the names of all the men who in succession obtained celebrity or notoriety, and upon many occasions it was known that contributions came indirectly from him, either to reward the exertions of unsuccessful valour, or to soothe the distresses of those upon whom the hand of misfortune had cast its afflictions. Mr. Jackson was ever remembered with a kindly feeling, and, when seen, honoured with a recognition. If confirmation of these facts were wanting, it was amply furnished at the period of his majesty's coronation in July, 1821. At this ceremonial, the splendour of which admitted of no parallel, an extraordinary degree of excitement prevailed in the public mind, not only from its novelty, upwards of fifty years having elapsed since a similar exhibition had been witnessed, but from an apprehension that the friends of Queen Caroline, who, it will be remembered, was excluded from the throne, might imprudently display their feelings in a way to mar the joyous character of the festival. Independent of these considerations, it was felt, from the vast multitude which would be assembled, and the amount of valuable property exposed, that more than usual care would be necessary to preserve order and restrain the lawless. Of the zeal and loyalty of the military no doubt was entertained; but as their duties were confined to the exterior of Westminster Hall, it was deemed important to select such men to guard the avenues leading to the interior as combined firmness and courage with a personal knowledge of the parties (who it was foreseen would seek admission either surreptitiously, or by means of tickets improperly obtained), and whose presence would check unwelcome or designing intruders. For this purpose, under his majesty's sanction, it was determined to employ eighteen of the most distinguished *prize fighters* of the day, upon whose humanity, integrity, and loyalty, his majesty was pleased to say he felt every reliance. To Lord Gwydyr (the lord great chamberlain) the task of making this arrangement was deputed, who immediately sent for Mr. Jackson, to whom his majesty's pleasure was made known. Mr. *Jackson* lost no time in calling in the aid of Mr. *Watson* (a well known amateur, and since the host of the Castle Tavern at Moorgate), and the following men were selected for the duty, which they undertook with proud alacrity,—*Cribb, Spring, Tom Belcher, Carter, Richmond, Ben Burn, Harmer, H. Lee, Tom Owen, Josh. Hudson, Tom Oliver, H. Holt, Crawley, Curtis, Medley, Purcell, Sampson, and Bill Eales.* These men were all provided with the dresses of pages, and were stationed at the different entrances, Mr. Jackson, Tom Cribb, and Tom Spring, being at the great doors of the hall, where the former received a condescending notice from his majesty as he passed to the platform on his way to Westminster Hall.

4069. *The admirable conduct of these men* from first to last, not only during the ceremony, but on the subsequent day, on which the hall was thrown open to the public, when their courage and humanity were prominently exemplified, was universally acknowledged, and letters of thanks were afterwards addressed individually to each man engaged by Lord Gwydyr, his lordship adding a *golden coronation medal*, which he said he had received from the hands of his majesty *expressly for the boxers*, and which, after a dinner, also provided at his lordship's expense, was raffled for and won by *Tom Belcher*, who doubtless retained it as a trophy of royal favour, never to be parted with until death forced him to leave his worldly goods behind him.

4070. *On the* 18*th of May following* (1822), Cribb publicly resigned the championship on the stage at the Fives-court, on which occasion he was presented with a belt, and was succeeded by Tom Spring, who retained the rank till he in turn resigned, and Jem Ward claimed the distinction. With Jem Ward the honour remained till the late defeat of *Deaf Burke* by *Bendigo* alias Thompson, when the form of giving Bendigo a belt was gone through by Ward; but Bendigo was afterwards challenged to decide the right to the championship by a man of the name of *Count*, of gigantic size, with whom, after a great deal of correspondence, no match was made; and now (1857) we see a Mr. Tom Sayers and a Mr. Bill Benjamin laying claim to its neglected honours, which we anticipate a very short time will see extinct.

4071. *Subsequent and previous to the coronation*, a vast number of important battles took place, in which men of the highest reputation were engaged, and entitled themselves to and obtained the approval of their patrons. Unfortunately, however, cases occurred, in which there was good reason to believe that temptations too strong for resistance were held out, by which some of those men, who stood high in the list of prize fighters, were induced to sacrifice their own character to the desire of gain, and purposely to lose fights upon which large sums had been staked, thereby deceiving their best friends. That similar practices were had recourse to in horse racing and other sporting events, there can be no doubt; but the commission of fraud in one class can be no apology for following the example in another. The "secrets" were almost invariably betrayed when the mischief was done; and those men who for the moment received the reward of their perfidy, afterwards experienced the painful consequences of their fall, and were regarded with contempt and distrust even by their seducers, to this day carrying with them the indelible mark of obloquy, which shuts them out from that sympathy always shown towards honest worth in adversity. Although these disgraceful occurrences may not have been so numerous as many are disposed to believe, yet they were sufficiently frequent, and sufficiently mortifying in their results, to create distrust and suspicion. The more distinguished patrons of the ring gradually withdrew their countenance, the subscriptions to "the Pugilistic Club" were discontinued, and finally the club was altogether broken up. Mr. Jackson relinquished his rooms in Bond-street in 1824, and retired into private life, occupying a house in Grosvenor-street West, long enjoying the unabated confidence and esteem of his old friends. The last fight in which Mr. Jackson took an active part was that between *Simon Byrne* and *Sandy M'Kay* (the Irish and English champions), at Seley Forest near Stoney Stratford, on the 2d June, 1830, when the latter was defeated and subsequently died.

4072. *It was always remarked*, that after any fatal issue to a prize battle the exhibitions in "the prize ring" were to a great extent paralysed: public prejudice was roused, and the good sense of the practitioners themselves restrained them in a pursuit which might damnify the parties who were yet to take their trials for their participation in the alleged offence. Attempts too were not unfrequently made to involve *gentlemen* of rank, who were present at these fatal rencontres, in the criminal proceedings which followed. This was more particularly the case in respect to M'Kay, and the names of individuals of distinction were "booked" for indictment should the prosecution of the principal, Simon Byrne, end in a conviction. Fortunately, Simon Byrne was pronounced "not guilty," and those threatened prosecutions were abandoned. Still the legal liability of the parties present at the fight could not be denied; and this fact again operated to render the willing patrons of the manly sports of their country more cautious in exposing themselves to the casualties which the judicial interference of certain unpaid magistrates rendered but too likely. As a proof of the disinclination of juries to expose men to the "lash of the law" for offences which were evidently the effects of *accident*, and *not design*, they have almost invariably, where a doubt could fairly be created, given the prisoners the benefit of that doubt, and acquitted them; an illustration of which was not only afforded in the case of Byrne, but of Deaf Burke, who was afterwards tried for causing the death of this very Byrne, who, by a sort of retributive justice, himself fell a victim to Burke's superior fighting qualities at Noman's Land, Herts, on the 30th May, 1833. Other instances of the like sort have occurred; and they have been the more frequent from the very severe sentences which, where men have been found guilty, were imposed both by the judges of the land at assizes, and by magistrates at sessions, the jurors often declaring, on witnessing these harsh visitations, that had they anticipated the sentences, they would have acquitted the offenders altogether. Sufficient reasons are here given for the fluctuations in the progress of prize fighting; but to these are to be added the lawless proceedings of a certain class of depredators, who are to be found at all public assemblages, and who, upon the retirement of Mr. Jackson and the exhaustion of the funds of the Pugilistic Club, from which certain old prize fighters were paid for preserving order, acted without control, broke in the ring, and in the confusion robbed the bystanders with impunity. The apprehension of personal violence was thus superadded to other causes of distaste, independent of which, these outrageous "doings" altogether shut out from the view of distant spectators, who wisely confined themselves to their carriages or waggons, the progress of the battle, and thus the chances of witnessing the details of "a fair stand-up fight" became every day less to be relied upon, and the inducements to a long and expensive journey were diminished in proportion.

4073. *The Fair Play Club.* An attempt was made, by the establishment of a *Fair Play Club*, as it was called, to resume the regularity of olden times, but the members wanted influence. That link which kept the pugilists themselves together, and which the reign of Mr. Jackson supplied, was broken, and has not since been united, although it must be admitted that many battles have been fought with comparative good order, without the effectual re-establishment, and so what with popular distaste and judicial restraint, the P. C. may be said to be at a discount.

4074. *It is not surprising that the combined causes thus detailed* — the dishonesty of some of the pugilists themselves, the decided determination of the magistrates to suppress prize fighting, and the irregularity of the class of followers to whom we have referred — should have reduced the sports of the ring to a low ebb, and operated as a check to that hardy breed of British boxers, who were in times gone by the pride and boast of their country. Those men who formerly distinguished themselves in the ring are either dead or have been absorbed into other walks of life. The major part who live have turned tavern keepers and publicans, and are now enjoying the reward of their former good character in prosperous trade. While referring to these men, it may not be uninteresting to state the singular fact, that from among them we have lived to see *a British pugilist take his seat as a senator in the House of Commons:* we allude to Mr. *John Gully*, whose memorable battles with *Pearce* (styled the Game Chicken) and *Gregson*, in 1805, 1807, and 1808, placed him foremost among the heroes of his day. Mr. Gully, after becoming a publican, and keeping the Plough in Carey-street, from his aptitude at calculation and quickness of perception became a speculator in turf transactions, and realised a large fortune. Having purchased an estate near Pontefract, and become the principal proprietor of the Hetton Colliery, near Sunderland, he was in 1832 elected as representative of the borough of Pontefract, and sat in the House of Commons till the dissolution in 1837, when he declined his legislative career. While in parliament he was universally respected for his straightforward and unpretending conduct, and throughout life has obtained the good opinion of all with whom he came in contact. It would be unjust not to add, that he did not seek but was wooed by his constituents to accept the honour which he received, and would perhaps have declined the distinction, for he had no personal vanity to gratify, had he not been taunted by the Tory interest, and almost laughed into the contest which ended in their discomfiture.

4075. *Tom Cribb*, like Mr. Gully, was likewise a publican, and kept the Union Arms, Panton-street, Haymarket. His successor in the championship, *Tom Spring*, kept the Castle Tavern, Holborn; and *Jem Ward*, who followed Spring, kept a tavern in Williamson-square, Liverpool, from whence he returned to London; while Langan, who was the great contemporary and opponent of Spring, built a tavern in Liverpool, and realised a large fortune in the double business of publican and cattle speculator. These, however, it will be observed, are all great guns in the pugilistic ring, and their career and subsequent successes must not be taken as the general characteristics of the race. On the contrary, it is not to be denied that the lives and pursuits of too many of what are called fighting men will not bear investigation, and the name now carries no recommendation into any circle that we are acquainted with.

4076. *On looking back to the days when the above men were in their zenith*, and comparing them with the race who now hold their places, it may well be said, "The ring is in its sear and yellow leaf." There are now no "big men" to "throw down the gauntlet," or men whose names are likely to "live in story;" nor are there backers of sufficient influence or with sufficient inclination, having the means, to revive that spirit which up to the extinction of the Pugilistic Club was so apparent. The best men of the present day, with few exceptions, do not exceed ten stone in weight; and these are so scattered through the country, as scarcely to deserve the name of "class." Matches are got up by stealth, and by a combination of many backers of humble circumstances, as will be apparent to any one who will be at the trouble to go and see a fighting train or a Thames steamer starting with their precious freights. In a recent case the judges of assize had to be "shunted" while one of these flying cargoes of peace breakers whisked by to the scene of action. Now that an efficient rural police is established throughout the country, with electric telegraph wires parallel with each line of railway, we may confidently anticipate that these lawless proceedings will soon be at an end.

4077. *Some may regret this state of things* when they refer to the *new rules* of the *ring*, which were adopted after a fatal fight between *Owen Swift* (the most accomplished of the light weights of modern times) and a comparative novice, called *Brighton Bill*, but whose real name was *Phelps*. This fight took place near Royston, Hertfordshire, on the 13th of March, 1838; and, from the seconds, under "the old rules of Broughton," not being interdicted from carrying their men, even when exhausted, to "the scratch," terminated in the total prostration of strength in the men; for both were carried in a state of insensibility from the ground, and the latter fell a victim to over-exertion, and an effusion of blood on the brain. We fear, however, that the new rules would have but little weight with Lord Campbell or any other judge, with a verdict of "guilty" pronounced by a jury upon a prisoner in a dock on a charge of murder for killing a man in a money conflict of this sort; still less with Mr. Ketch, when he came out with the usual concomitants of what modern phraseology elegantly denominates the scaffold. Stabbing, cutting, kicking, gouging, and other barbarous practices, are all to be reprobated; but attempting to put them down by prize-fighting is introducing a remedy that is worse than the disease.

NEW RULES OF PRIZE FIGHTING.

1. That the ring shall be made on turf, and shall be four and twenty feet square, formed of eight stakes and ropes, the latter extending in double lines, the uppermost line being four feet from the ground, the lower two feet from the ground. That in the centre of the ring a mark be formed, to be termed *a scratch;* and that at two opposite corners, as may be selected, spaces be inclosed by other marks sufficiently large for the reception of the seconds and bottle holders, to be entitled *the corners*.

2. That each man shall be attended to the ring by a second and a bottle holder, the former provided with a sponge, and the latter with a bottle of water. That the combatants, on shaking hands, shall retire until the seconds of each have tossed for choice of position; which adjusted, the winner shall choose his corner according to the state of the wind or sun, and conduct his man thereto, the loser taking the opposite corner.

3. That each man shall be provided with a handkerchief of a colour suitable to his own fancy, and that the seconds proceed to entwine these handkerchiefs at the upper end of one of the centre stakes. That these handkerchiefs shall be called the colours, and that the winner of the battle at its conclusion shall be entitled to their possession as the trophy of victory.

4. That two umpires shall then be chosen by the seconds to watch the progress of the battle, and take exception to any breach of the rules hereafter stated. That a referee shall be chosen by the umpires, to whom all disputes shall be referred; and that the decision of this referee, whatever it may be, shall be *final*, and strictly binding on all parties, whether as to the matter in dispute or the issue of the battle. That the umpires shall be provided with a watch, for the purpose of calling *time;* and that they mutually agree upon which this duty shall devolve, the call of that umpire only to be attended to, and no other person whatever to interfere in calling time. That the referee shall withhold all opinion till appealed to by the umpires, and that the umpires strictly abide by his decision without dispute.

5. That on the men being stripped, it shall be the duty of the seconds to examine their shoes and drawers, and if any objection arises either as to insertion of improper spikes in the former, or substances in the latter, they shall appeal to their umpires, who, with the concurrence of the referee, shall direct if any and what alteration shall be made.

6. That both men being ready, each man shall be conducted to that side of the scratch next his corner previously chosen; and the seconds on the one side, and the men on the other, having shaken hands, the former shall immediately return to their corners, and there remain within the prescribed marks till the

round be finished, on no pretence whatever approaching their principals during the round, on penalty of losing the battle.

7. That at the conclusion of the round, when one or both of the men are down, the seconds and bottle holders shall step forward and carry or conduct their principal to his corner, there affording him the necessary assistance, and that no person whatever be permitted to interfere in this duty.

8. That at the expiration of *thirty seconds* (unless otherwise agreed upon) the umpire appointed shall cry *time*, upon which each man shall rise from the knee of his bottle holder and walk to his own side of the scratch unaided, the seconds and bottle holders remaining at their corners; and that either man failing so to be at the scratch within *eight seconds*, shall be deemed to have lost the battle.

9. That on no consideration whatever shall any person be permitted to enter the ring during the battle, or till it shall have been concluded; and that in the event of such unfair practice, or the ropes and stakes being disturbed or removed, it shall be in the power of the umpires and referee to award the victory to that man who in their honest opinion shall have the best of the contest.

10. That the seconds and bottle holders shall not interfere, advise, or direct the adversary of their principal, and shall refrain from all offensive or irritating expressions, in all respects conducting themselves with order and decorum, and confine themselves to the diligent and careful discharge of their duties to their principals.

11. That in picking up their men, should the seconds or bottle holder wilfully injure the antagonist of their principals, he shall be deemed to have forfeited the battle, on the decision of the umpires or referee.

12. That it shall be "a fair stand-up fight," and if either man shall *wilfully* throw himself down without receiving a blow, he shall be deemed to have lost the battle; but that this rule shall not apply to a man who, in a close, slips down from the grasp of his opponent to avoid punishment.

13. That *butting* with the head shall be deemed *foul*, and the party resorting to this practice shall be deemed to have lost the battle.

14. That a blow struck when a man is thrown or *down*, shall be deemed *foul*. That a man with one knee and one hand on the ground, or with both knees on the ground, shall be deemed down; and a blow given in either of those positions shall be considered *foul*, providing always, that when in such position the man so down shall not himself strike or attempt to strike.

15. That a blow struck below the waistband shall be deemed *foul*, and that in a close, seizing an antagonist below the waist, by the thigh or otherwise, shall be deemed *foul*.

16. That all attempts to inflict injury by *gouging*, or *tearing the flesh* with the fingers or nails, and *biting*, shall be deemed *foul*.

17. That kicking, or deliberately falling on an antagonist with the knees or otherwise when down, shall be deemed *foul*.

18. That all bets shall be paid as the battle money after a fight is awarded.

19. That no person on any pretence whatever shall be permitted to approach nearer the ring than ten feet, with the exception of the umpires and referee, and the persons appointed to take charge of the water or other refreshment for the combatants, who shall take their seats close to the corners selected by the seconds.

20. That due notice shall be given by the stakeholder of the day and place where the battle money is to be given up, and that he be exonerated from all responsibility upon obeying the direction of the umpires and referee; and that all parties be strictly bound by these rules; and that in future all articles of agreement for a contest be entered into with a strict and willing adherence to the letter and spirit of these rules, and without reserve or equivocation.

21. That in the event of magisterial interference, it shall be the duty of the umpires and referee to name the time and place for the next meeting, if possible on the same day.

22. That should the event not be decided on the day named, all bets shall be deemed void, unless again declared on by mutual agreement; but that the battle money shall remain in the hands of the stakeholder till fairly won or lost by a fight, unless each party shall agree to withdraw his stake.

23. That all stage fights be as nearly as possible in conformity with the foregoing rules.

4078. *The prize ring.* At the commencement of this article a sketch is given of the form and character of the arena in which prize fights take place; and on referring to that sketch, the application of some portion of the foregoing rules will be more easily understood. In the centre the men are seen in actual combat, while at the opposite corners their seconds and bottle holders are ready to pick them up the moment the round is over. On the right hand sit the two umpires and the referee, while, close to the corners selected by the seconds, sit the men in charge of the baskets, containing water or other necessary refreshment. The persons within the outer circle are generally gentlemen who, for a fee, are permitted the privilege of sitting down close to the arena, while the great bulk of the spectators are kept at a distance; and it is the duty of men appointed for the purpose to preserve this order as much as possible from first to last.

4079. *Form of articles for a prize battle.* In making matches the following is the form usually adopted, which of course is altered according to circumstances: —

"Articles of agreement entered into this 1st day of January, 1840, between A. B. and C. D. The said A. B. agrees to fight the said C. D. a fair stand-up fight in a four-and-twenty feet roped ring, half-minute time, according to the New Rules, by which the said A. B. and C. D. hereby mutually agree to be bound. The said fight shall be for the sum of One Hundred Pounds a side [or such other sum as may be agreed upon], and shall take place on [stating the day] within thirty miles of [the place and distance]. In pursuance of this agreement, ten pounds [or any other sum] a side are now deposited in the hands of Mr. E. F., who shall be the stakeholder [or in the hands of G. H. who shall transmit the same to Mr. E. F., who shall be final stakeholder]. That the second deposit of ten pounds a side [or any other sum] shall be made at the house of [name the amount of the future deposits, the days, and places in succession till the last deposit], on which occasion a toss shall take place to decide which man shall be entitled to name the place of meeting, of which one week's notice [or such other time as shall be agreed upon] shall be given to the loser of the toss. That the said deposits shall be made between the hours of eight and ten o'clock in the evening [or such other hours as may be agreed upon], and that the party failing shall forfeit the money down. That the men shall be in the ring between the hours of twelve and one o'clock [name the time], or the man absent to forfeit the battle money. That two umpires shall be chosen on the ground by each man, by whom a referee shall be chosen, to whom in the event of dispute all points shall be referred, and his decision shall be binding. That in the event of magisterial interference, the umpires and referee shall decide the next time and place of meeting, if possible on the same day. That the expenses of the ropes and stakes shall be borne mutually, share and share alike [or by the winner as may be agreed upon]. In pursuance of this agreement, we hereunto attach our names,

A. B.
Witness, I. K. C. D."

4080. *Last great exhibition of the art of self-defence.*—It has already been stated that, at the closing of "the Tennis-court," there was no public arena, with the exception of the theatres, or in the confined spaces to be found in public-houses, where "the Art of Self-defence," according to the practice of the ring, could be advantageously displayed. It was accidentally discovered, however, that ample space for this purpose could be afforded at the *National Baths in the Westminster-road*, where, on the withdrawal of the water from the swimming bath, a commodious stage was erected, affording accommodation for the reception of between four and five thousand spectators. One experiment, in a benefit got up for Bressy, a provincial pugilist, proved the desirable character of the location; and an arrangement was entered into with the proprietor for having eight benefits, in the profits of which he was to be a participator. An *Association* was then formed of fourteen of the most celebrated members of the ring, who bound themselves under certain penalties to set-to on each night of performance, thus securing the certainty of scientific display. Among these men were the veteran Tom Cribb, Tom Spring, Peter Crawley, Tom Oliver, Ned O'Neal, Deaf Burke, Curtis, Swift, Tisdale, Aaron, Alex Reid, Hannan, Walker, Maley, &c. who, being aided by other members of the prize ring, embraced such a *dramatis personæ* as proved unusually attractive. The exhibitions took place once a fortnight in the evenings, the price of admission being 2*s*. and 1*s*. to different parts of the edifice.

4081. *Teachers of the Art of Self-defence.* A gentleman of our acquaintance was once indebted for a most elaborate licking to his having begun to take lessons in the noble art of self-defence. Being anxious to try his prowess, he pitched upon an unlucky opponent, and the above was the result. We forget who was his master; but among the best teachers of the art, Tom Spring, Peter Crawley, Alex Reid, Owen Swift, Dick Curtis, Hannan, and Walker, may be named. Our friend was very soon satisfied, and did not finish his course of study in that line.

4082. *Boxing and training authorities.* Our limits forewarn us to draw to a close. We professed, in the outset, merely to give a sketch of the rise and progress of British Boxing, and to that extent have we confined ourselves. But to those who may be desirous of extending their researches, we can refer with confidence to the pages of *Boxiana*, as commenced by Pierce Egan, and completed by Mr. Bee,—6 vols. in all. Also to *Fistiana*, or the *Oracle of the Ring*, commenced by the late Mr. Vincent Dowling, and carried on by his successor to the editorial chair of *Bell's Life in London*. Though differing with Mr. Dowling generally in his views on the subject of prize fighting, we yet gladly bear testimony to his high and honourable character, to his consistent disinterested zeal in the cause he espoused, and to his manly, charitable, generous, gentlemanly disposition. Sorry we are to have to close this notice of a pursuit that his pen ever adorned by stating that his life was prematurely sacrificed by his devotion to the pugilistic ring; a severe cold caught at one of these exhibitions having laid the foundation of an illness from which he never recovered. Peace to his *manes*, say we!

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APPENDIX.

ON PEDESTRIAN EXERCISES.

4083. It is not out of place here to introduce, for the benefit of those who are little accustomed to a country life, but who may intend to indulge in rural sports, or a pedestrian tour for a brief holiday, some useful directions, derived chiefly from an admirable, yet unpretending, little work, entitled *Hints for Pedestrians* (Simpkin and Co. 1843.). The town-reader will derive advantage from making himself acquainted with the contents of the little treatise we quote from. Trifling as some of the particulars alluded to may at the first glance seem, by a due regard being had to them, we can assure the seeker after health and enjoyment that both these desirable possessions will be more readily attained. The excursionist should begin to train himself for his undertaking a few days before setting out, by a warm bath and a dose of gently-purgative medicine; then the condition of toe-nails, corns, and bunions, if any, should be looked into; and in winter care should be taken to prevent the access of chilblains. "Sportsmen in snipe or grouse shooting on the moors may always avoid them by a careful attention to the dryness of their feet, on return from shooting, before any refreshment is taken, and most especially before the feet are placed near a fire." Walking up and down a room after drying wet or cold feet, gentle friction with a flesh-brush, or horse-hair scrubbing brush, are to be recommended as preventive means. In summer, on the other hand, many persons are apt to be troubled with profuse perspiration of the feet, which, however, must not be summarily checked, but only moderated. Woollen stockings or socks should always be worn, and often changed; black ones should be avoided, for the dye increases the disagreeable smell. The feet should be *rarely washed*, but wiped occasionally with a moist, and often with a dry, towel. Colonel Shaw (*Memoirs of Wars in Spain, &c.*), in giving hints to those about to undertake pedestrian expeditions, says, "For some days before starting, dip your feet in hot water as often as possible for a few moments; then rub them quite dry. Let this be done morning and evening till you find the feet quite free from a damp feeling. Provide yourself with a good-sized tin box, full of soft soap. Before starting in the morning, rub the soles of the feet, especially about the heels and toes, well with the soap, until it has the appearance of a good lather for shaving, and then put your woollen stockings on. Let this be done every morning before starting, and you will find, even in the hottest or wettest weather, you will be able to do a great deal of work, and at the end of the day find your feet cool and free from blisters. Instead of washing the feet at the end of a journey, rub them first with a damp cloth, and then dry them completely." Next to the care of the feet themselves, regard their immediate clothing. Woollen stockings, knitted by hand on wires, are the best; socks are more portable, and, in so far, better where a knapsack must be carried; lambs' wool socks, "midge-socks," or merino, are the very best for the purpose. Use an "Oxford" shoe, which laces up the middle and over the instep, with an additional sole, a heel not too high or heavy, and small nails at the toes and sides. The shoes should be right and left, fully an inch longer than the foot, broad at the toes, and, if possible, of soft supple well-tanned leather; if they fail in the last particular, they ought to be repeatedly well oiled. A plaided shooting jacket, especially when its numerous pockets may supply the place of a knapsack, a silk night-cap, a double-breasted waistcoat, gambaroon trowsers, calico shirts, Woodstock gloves, a cloak of some description, and a cap or hat, complete the rest of the pedestrian's costume. A good light cane or umbrella is, according to taste, an appendage of no small importance. In a pedestrian excursion, the proper allotment of the amount of exercise for each day is of the greatest consequence: it will always be well to limit the first and even the second day's travelling to something under what may generally be effected without discomfort; thus, those who can accomplish twenty miles in a day's walk, should begin by no more than a dozen or fifteen, and they may walk twenty on the next, and perhaps twenty-five on the third day, and increase a little on each day after without inconvenience. The little work from which we quote has some hints for the times and constituents of meals, which we may pass over. As regards quenching the thirst on the road-side, we may extract the following remarks: — " Drink as little as possible of anything, and do not give way to the first sensation of thirst. Be not always tempted by the crystal fountains you may meet with, being yourself warm. Rinsing the mouth with cold spring water, and the use of a soft tooth-brush, are refreshing and quenching to the thirst. To thirsty men, drinking water only gives momentary relief; but if the legs are wetted, the relief, though not at first apparent, positively destroys the pain of thirst." The undrinkable water of muddy pools may, therefore, be made available, the legs being plunged in and out of the water two or three times. The same author recommends " singing or shouting as you go along," as goodly exercise for the lungs of the pedestrian, while crossing some open moorland. Swimming scarcely comes under the denomination of a field sport; yet, as sportsmen in their adventures by field are liable to accidents by flood, we may find a place for the few following hints with respect to their position in deep water. Should an individual who *fears* he cannot swim (for this is a fallacy, if he will but inflate his chest well) find himself in danger of drowning, let him immediately float on his back, keep his chest full of air, and his hands in the water, and neither plunge nor struggle; finally, he is safe if he maintains a collected mind. To save a drowning person demands more technical knowledge. " A swimmer who may attempt to preserve the life of a person in the water by bringing him to shore must avoid getting within such struggling person's reach, or he will in all probability lose his own life in the attempt rashly to save that of another. Let him remember, then, to avoid the *death-grasp*, as it is called, of the drowning, for it can *seldom be quitted* when once fastened, and both go down inevitably! The way is to swim round till their plunging slackens, and they rise to the surface of the water generally for the last time, when you must go *behind* them — never *before* them; seize either the back of the neck, or even a lock of the back hair will be quite sufficient to hold them and to urge them before you to shore — holding by one hand and swimming with the other. Parties should practise swimming with either hand alone, and they will be more fitted, having tested their own resources this way, to rely upon their ability for any attempt to rescue others. Sometimes the foot can be readiest seized; this will do, though not so well. Always keep clear of their arms and hands, with one exception perhaps — the back of the arm, or grasping the shoulders round and under the armpit from behind. They must be made your prisoner in one of these ways, which are the chief, or else you may be made, however unintentionally, theirs, which is fatal to both. A person had better not jump in to help, under the promptings of a noble anxiety, unless he can with presence of mind put these precautions into practice." — *Hints for Pedestrians*, pp. 102–3.

4084. Reverting for an instant to the subject of clothing, and here particularly addressing our observations to those who are little practised in field sports, we may call to mind that a great object of the sportsman is to remain at all times unseen by the game he pursues. Mr. St. John (*Tour in Sutherlandshire*, pp. 249, 250.) remarks that nothing is less noticeable on a hill-side than the common shepherd's check of a small pattern, which has at a distance an indistinct grey colour, difficult to distinguish from grey rock, and accordingly of this kind of stuff, a small-sized black and white check, he recommends the sportsman's outer covering should consist — at any rate in that part of the north to which his remarks bear reference. In other districts, and at different periods of the year, clothing of a different hue may properly be worn, it being always borne in mind that to screen the sportsman from the observation of his game, his dress should be as nearly as possible of the colour of surrounding objects.

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